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MOTOROLA  
**HEP**  
 PROGRAM

# SEMICONDUCTOR

## CROSS-REFERENCE GUIDE *and* CATALOG



**MOTOROLA** Semiconductor Products Inc.

**1975 EDITION**

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### NOTE:

**The HEP numbering system has been changed.  
HEP devices with the former numbers are still good  
and should be cross-referenced to the new HEP numbers on Page 4.**



## CROSS-REFERENCE GUIDE

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This guide has been prepared by the Motorola HEP technical staff to provide a cross-reference for the Hobbyist, Experimenter, and Professional service technician. The information contained herein is based on an analysis of the published specifications of each device listed. This analysis was then compared to HEP specifications and the HEP device that best met or exceeded the important mechanical and electrical characteristics of the original was selected as the replacement. Every care has been taken to meet or exceed published parameters, but because of industry-wide differences in quality control, manufacturing, and testing process, which result in size and characteristic variations, and

because some of the Motorola HEP devices are capable of higher performance than the original, Motorola Semiconductor Products, Inc. cannot guarantee that the listed items will provide an exact replacement in every instance and/or application.

Motorola HEP takes great pride in offering the most complete line of semiconductor devices appealing to the hobbyist-experimenter and replacement markets. All of the HEP devices feature complete published specifications, which will allow the safe "design" of circuits in a manner that will assure maximum device capabilities, as well as determining if the device is operating within its limits.

### IMPORTANT TIPS On Using Semiconductors

Each Motorola HEP device will give excellent performance when operated within its published specifications, however, due to the very nature of the term "replacement" there are certain aspects that require consideration when making substitutions. In the greatest majority of cases it will be found that direct replacement can be made, requiring no circuit or mechanical changes. Occasionally the "stubborn" circuit will appear, where other components have changed value, or the original design was extremely critical. With these thoughts in mind, the following application tips are presented:

**NOTE:** Many device numbers will be followed by a color notation (black, red, brown, etc.). This notation references either a color dot or the color of the ink used on the device.

**Low-power Transistors** – Lead configuration may differ; check original and replacement devices to be sure that collector, emitter, and base lead connections are correct. In most cases, fourth lead (shield) can be cut off and eliminated. Current and voltages must be checked, being certain not to exceed device ratings. Occasionally resistance values will have to be changed in order to achieve correct biasing. Tuned circuits may require realignment.

**High-power Transistors** – Make certain that voltage and current ratings are not exceeded. Adjust bias resistance to obtain optimum performance (many circuits use a small potentiometer for this purpose). Check all circuit components (resistors, coils, etc.) that might have been damaged if the original transistor was shorted. In most auto radio

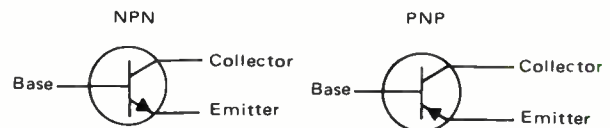
output stages, check emitter resistor (replacement transistor will be permanently damaged if this resistor is defective).

In order to assure maximum power dissipation, adequate heat-sinking must be provided. Also, contact surfaces should be coated with high-quality silicone grease. (Refer to HEP accessory list for each of these items.)

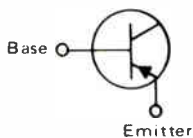
**CAUTION:** When replacing high power horizontal and vertical output transistors make certain that preceding driver stages are functioning properly. Malfunction of these driver stages (as well as output stage circuitry) is often cause for failure of output devices, and replacements can be destroyed if this condition exists.

**General Transistor Replacement Considerations** – Frequently special-numbered transistors, that are not listed in any cross-reference guide, will be encountered. In most cases, a suitable replacement can be determined by following a few simple procedures.

1. **NPN or PNP** – Schematic symbol will indicate device polarity (note symbols below). Arrow always points away from base and collector when device is NPN, and arrow always points toward base and collector when device is PNP.



If schematic symbol is not available, polarity can be determined in following manner: With circuit energized, connect negative lead of voltmeter to emitter and measure voltage to base. If voltage reading is Positive, transistor is NPN; if voltage reading is Negative, transistor is PNP.



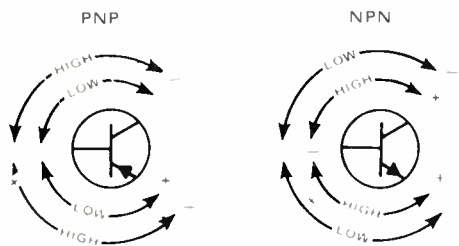
**CAUTION:**

Before using any ohmmeter to check semiconductor devices the ohmmeter should be checked to determine that:

1. No more than 1½ to 3 volts is available at the test probes on any ohms range.
2. The current available to be sourced by the test probes be limited to a few milliamperes on any ohm range.

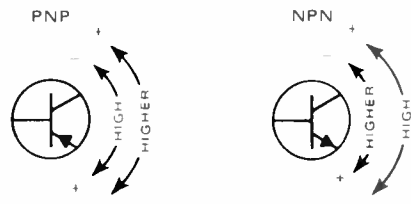
Failure to observe these two precautions could result in serious damage to the semiconductor device under test.

Polarity can also be determined in following manner using an ohmmeter. Note: For this test, + and - of ohmmeter probes *must* be known and connected as indicated in following illustrations.



2. Germanium or Silicon – Measure voltage from emitter to base. If voltage is approximately 0.25 volt, transistor is germanium. If voltage is approximately 0.6 volt, transistor is silicon.

Also, an ohmmeter can be used for this test in following manner:



Germanium – will give meter reading  
Silicon – will be very high (several megohms) to infinity.

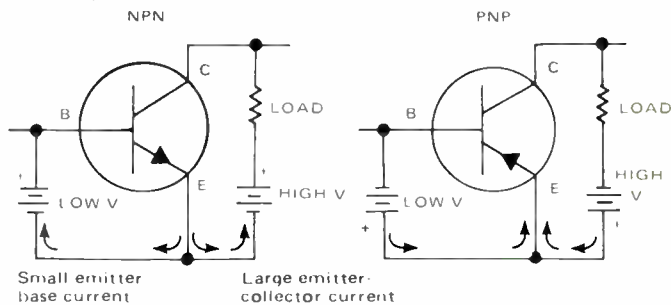
3. Operating Voltage Considerations – Voltages from collector to base, collector to emitter, and emitter to base should be noted from either schematic or by actual measurement with voltmeter. Device selected for replacement should have voltage ratings of at least three to four times actual operating voltages for each of three categories. This type of safety factor is necessary to protect

against voltage spikes, transients, and surges that are inherent in most circuits.

4. Collector Current Requirements – This factor is rarely noted on schematics, however, a meter can be easily connected in series with collector and actual current requirements can be determined. Again, a safety factor of at least three to four times measured current should be used. This measurement must be made during maximum-power conditions.

5. Gain Considerations – Due to complex scope of this subject only one gain parameter will be considered. This parameter is common-emitter small-signal dc current gain, referred to as  $h_{FE}$ , beta, or  $\beta$ . From standpoint of common applications, following general rules should be used as guideline. High gain devices ( $h_{FE}$  from 300 up) will find usage in preamps, RF stages, and converters. Medium gain devices ( $h_{FE}$  from 100 to 300) will find usage in RF and IF stages, oscillators, mixers, drivers, etc. Low gain devices ( $h_{FE}$  up to 100) will find usage in output stages, AGC, drivers, video amplifiers, etc.

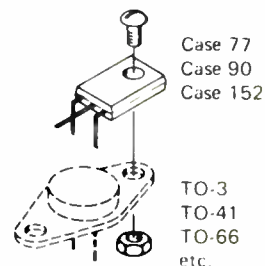
6. Transistor Biasing – Occasionally bias resistor(s) may have to be changed in order to achieve proper circuit operation. Following two diagrams are intended to show typical PNP and NPN circuit current flow and biasing voltages:



(Note that only difference is reversed battery polarity and opposite direction current flow)

Different Case Styles – Frequently there is quite a difference between case style of original part and recommended replacement. However, in most instances, this problem can be solved in following manner:

TO-5, TO-39, and similar case styles can be easily replaced with HEP devices that use case 152 by merely reforming leads to correct pattern. TO-3, TO-41, TO-66, and similar case styles can be easily replaced with HEP devices that use case 77, case 90, or case 152 by reforming leads and using only one of original mounting holes for attachment. Since collector of each of these devices is connected to metal tab, electrical isolation *must* conform to original device. Silicone grease should always be used with power devices to promote heat dissipation.



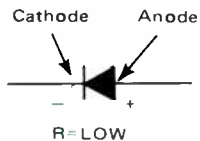


2276  
647

-2200  
500-1

**Silicon Rectifiers** – Make certain that polarity is correct and that voltage and current ratings of replacement device(s) are not exceeded. Additional current can be handled by using two diodes in parallel, and additional peak inverse voltage can be obtained by connecting diodes in series. For replacement devices, make certain that PIV and  $I_C$  are at least 3 to 4 times normal circuit operating conditions.

Rectifier and diode polarity can easily be determined by using an ohmmeter. Note: for this test, + and – of ohmmeter probes *must* be known and connected as indicated in following illustrations.



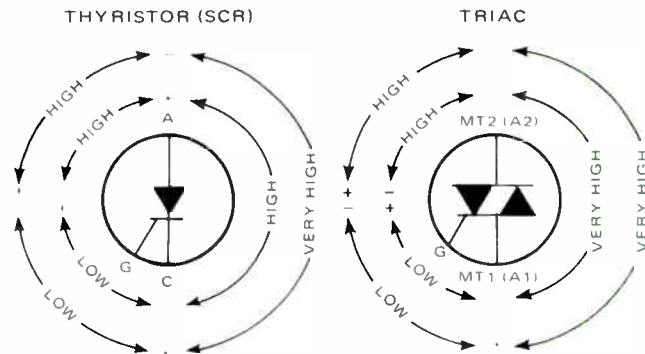
**Replacing Selenium, Metal-Oxide, or Vacuum Tube Rectifiers** – Silicon rectifiers are much more efficient than other types of power rectifiers and do not become weaker with continued usage. In other words they are either good or they are bad. Due to increased efficiency, however, it is recommended that a 10 watt resistor be placed in series with B+ line to limit output voltage to required level. Resistance value may be determined experimentally or from equation  $R = E/I$  where E is dc voltage to be dropped and I is total dc current through circuit.

**Zener Diodes** – Optimum zener operation will result when specified  $I_{ZT}$  is maintained during normal circuit conditions. Zener diodes may be connected in series to increase zener voltage (6.2, 9.1, and 12.0 volt diodes in series would result in 25.3 final zener voltage, plus or minus device tolerances). Zener diode polarity can be determined in same manner as Silicon Rectifiers (above).

**Silicon Dual Diodes** – Excellent performance and customer satisfaction can be obtained by replacing weak or defective selenium or diode vacuum tubes with silicon devices. Leads may be formed to proper shape and plugged directly into original tube socket holes. (Leads may be bent and twisted to assure good electrical contact, soldering these in place is best procedure.)

**Thyristors (SCR's) and Triacs** – Most important characteristics, from replacement standpoint, would include Peak Reverse Voltage ( $V_{RM}$ ), Forward Current ( $I_f$ ), and Gate Trigger Current (sensitivity) ( $I_{GT}$ ).  $V_{RM}$  and  $I_f$  *must* exceed normal operating conditions. If replacement device does not trigger under normal conditions it is possible that  $I_{GT}$  (sensitivity) is too high. If replacement device triggers prematurely it is possible that  $I_{GT}$  is too low.

Polarity, or terminal identification, of a Thyristor or Triac can be determined by an ohmmeter as follows: Note: for this test, + and – of ohmmeter probes *must* be known and connected as indicated:



Nomenclature  
SCR - Silicon Controlled Rectifier  
A - Anode  
C - Cathode  
G - Gate

Nomenclature  
MT1 - Main Terminal 1 (formerly referred to as Anode 1)  
MT2 - Main Terminal 2 (formerly referred to as Anode 2)  
G - Gate

**Integrated Circuits** – An integrated circuit which has failed will very often show little or no change in the D.C. voltages measured at the pins. For this reason the voltage and/or resistance methods of troubleshooting are usually of little value.

There are, however, two other methods to troubleshoot an I/C suspected of failure which are reliable. These are: 1) signal tracing method, and 2) substitution method. The signal tracing method requires a knowledge of the internal I/C circuit function. When using the substitution method (substituting a known good device for the suspected bad one) all voltages applied to the I/C should be determined to be within safe limits BEFORE the known good device is installed in the circuit.

## New HEP Numbers Cross-Referenced to Former HEP Numbers

NOTE: The HEP numbering system has been changed. HEP devices with the former numbers are still good and should be cross-referenced to the new HEP numbers below.

| Former Hep No. | New Hep No. | Former Hep No. | New Hep No. | Former Hep No. | New Hep No. | Former Hep No. | New Hep No. |
|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|
| 1              | G0008       | 253            | G0005       | 611            | Z0433       | 733            | S0033       |
| 2              | G0002       | 254            | G0005       | 612            | Z0436       | 734            | S0020       |
| 3              | G0003       | 300            | R1241       | 613            | Z0439       | 735            | S0015       |
| 50             | S0011       | 302            | R1243       | 620            | R1205       | 736            | S0015       |
| 51             | S0012       | 304            | R1301       | 621            | R1202       | 737            | S0024       |
| 52             | S0013       | 306            | R1304       | 622            | R1222       | 738            | S0030       |
| 53             | S0014       | 310            | S9002       | 623            | G6013       | 739            | S0032       |
| 54             | S0015       | 311            | R2002       | 624            | G6013       | 740            | S5021       |
| 55             | S0015       | 320            | R1001       | 625            | G6018       | 801            | F0010       |
| 56             | S0016       | 340            | R1751       | 626            | G6014       | 802            | F0015       |
| 57             | S0019       | 400            | B0400       | 627            | G6015       | 803            | F1036       |
| 75             | S3013       | 408            | B0408       | 628            | G6013       | C3400P         | None        |
| 76             | S3014       | 409            | B0409       | 629            | G0005       | C3401P         | None        |
| 101            | Z0413       | 410            | B0410       | 630            | G0006       | C6017          | None        |
| 102            | Z0402       | 411            | B0411       | 631            | G0005       | C6018          | None        |
| 103            | Z0408       | 413            | B0413       | 632            | G0005       | C6019          | None        |
| 104            | Z0412       | 415            | B0415       | 633            | G0007       | C6049G         | None        |
| 105            | Z0415       | 416            | B0416       | 634            | G0007       | C6051L         | C6051P      |
| 134            | R9134       | 417            | B0417       | 635            | G0001       | G0004          | G0006       |
| 135            | R9135       | 418            | B0418       | 636            | G0008       | G0010          | G0008       |
| 151            | R0160       | 450            | A0450       | 637            | G0003       | HMA07          | B0007       |
| 153            | R0162       | 451            | A0451       | 638            | G0009       | HMA32          | B0032       |
| 154            | R0050       | 452            | A0452       | 639            | G0008       | HMA33          | B0033       |
| 156            | R0052       | 453            | A0453       | 640            | G0008       | HMA36          | B0036       |
| 157            | R0053       | 454            | A0454       | 641            | G0011       | HMA37          | B0037       |
| 158            | R0054       | 455            | A0455       | 642            | G6016       | HMA38          | B0038       |
| 159            | R0055       | 456            | A0456       | 643            | G6016       | R1101          | None        |
| 160            | R0056       | 457            | A0457       | 644            | G6017       | R1102          | None        |
| 161            | R0090       | 458            | A0458       | 700            | S5006       | R1103          | None        |
| 162            | R0092       | 500            | A0500       | 701            | S5000       | R3101          | None        |
| 165            | R9001       | 501            | A0501       | 702            | S5018       | R3201          | None        |
| 166            | R9002       | 502            | A0502       | 703            | S5019       | R3203          | None        |
| 170            | None        | 503            | A0503       | 704            | S7004       | S0001          | S0005       |
| 175            | R0801       | 553            | None        | 705            | S7003       | S0002          | S0024       |
| 176            | R0803       | 554            | None        | 706            | S5024       | S0003          | S0024       |
| 177            | R0804       | 556            | None        | 707            | S5020       | S0004          | S0025       |
| 178            | R0805       | 558            | None        | 708            | S5022       | S0006          | S0019       |
| 200            | G6000       | 570            | C2003P      | 709            | S0017       | S0007          | S0005       |
| 230            | G6003       | 571            | C2002P      | 710            | S5023       | S0019          | S0019       |
| 231            | G6004       | 573            | C2005P      | 712            | S5025       | S0021          | S0015       |
| 232            | G6005       | 581            | C2007G      | 713            | S5026       | S0022          | S0015       |
| 233            | G6006       | 582            | C008G       | 714            | S3019       | S0023          | S0015       |
| 234            | G6007       | 583            | C2009G      | 715            | S0019       | S3022          | S3021       |
| 235            | G6008       | 584            | C2010G      | 716            | S0019       | S3031          | S3032       |
| 236            | G6009       | 590            | C6091       | 717            | S0031       | S3023          | S3024       |
| 237            | G6010       | 592            | C6092G      | 718            | S0020       | S3025          | S3024       |
| 238            | G6011       | 593            | C6093C      | 719            | S0020       | S3026          | S3024       |
| 239            | G6012       | 594            | C6094P      | 720            | S0020       | S3027          | S3028       |
| 240            | S5011       | 595            | C6095P      | 721            | S0015       | S3029          | S3028       |
| 241            | S5012       | 600            | None        | 722            | S0015       | S3030          | S3032       |
| 242            | S5013       | 601            | R0222       | 723            | S0015       | S3031          | S3032       |
| 243            | S5014       | 602            | Z0405       | 724            | S0015       | S5001          | S5004       |
| 244            | S5015       | 603            | Z0407       | 725            | S0015       | S5002          | S5005       |
| 245            | S5000       | 604            | Z0414       | 726            | S0015       | S5003          | S5000       |
| 246            | S5006       | 605            | Z0416       | 727            | S0025       | S5007          | S5006       |
| 247            | S7002       | 606            | Z0417       | 728            | S0015       | S5008          | S5005       |
| 248            | S7003       | 607            | Z0418       | 729            | S0025       | S5009          | S5005       |
| 250            | G0005       | 608            | Z0424       | 730            | S0024       | S5010          | S5005       |
| 251            | G0006       | 609            | Z0426       | 731            | S0033       |                |             |
| 252            | G0005       | 610            | Z0432       | 732            | S0033       |                |             |

## HEP Semiconductor Description and Packaging Index

Dimensions and Outline Drawings for all Cases Referenced in the Following Chart are shown on Pages 10, 11, and 12

| HEP NO. | CASE STYLE | DESCRIPTION  | HEP NO. | CASE STYLE | DESCRIPTION  |
|---------|------------|--|---------|------------|--|
| C0900P  | TO-116     | IC—HTL—Dual 4-Input Line Driver                                      | C6051P  | TO-116     | IC—Linear—Dual Operational Amplifier   |
| C0901P  | TO-116     | IC—HTL—Dual J-K Flip-Flop  | C6052G  | Case 601   | IC—Linear—Operational Amplifier  |
| C0902P  | TO-116     | IC—HTL—Dual 2-Input NAND Gate  | C6052P  | Case 626   | IC—Linear—Operational Amplifier  |
| C0903P  | TO-116     | IC—HTL—Dual 4-Input Expander   | C6053G  | TO-99      | IC—Linear—Operational Amplifier  |
| C0904P  | TO-116     | IC—HTL—Triple 3-Input NAND Gate                                      | C6053L  | TO-116     | IC—Linear—Operational Amplifier  |
| C0905P  | TO-116     | IC—HTL—Dual 4-Input NAND Gate  | C6054G  | Case 602A  | IC—Linear—Voltage Regulator (Negative)                                       |
| C0906P  | TO-116     | IC—HTL—Master-Slave R-S Flip-Flop                                    | C6054R  | Case 614   | IC—Linear—Voltage Regulator (Negative)                                       |
| C0907P  | TO-116     | IC—HTL—Quad Latch  | C6055L  | TO-116     | IC—Linear—Stereo Preamplifier  |
| C0908P  | TO-116     | IC—HTL—Hex Inverter  | C6056P  | TO-116     | IC—Linear—FM Multiplex Stereo Demodulator                                    |
| C0909P  | TO-116     | IC—HTL—Quad 2-Input NAND Gate  | C6057P  | TO-116     | IC—Linear—Dual Balanced Chroma Demodulator                                   |
| C0910P  | TO-116     | IC—HTL—Triple Level Translator                                       | C6059P  | Case 626   | IC—Linear—IF and AGC Amplifier   |
| C0911P  | TO-116     | IC—HTL—Dual Monostable Multivibrator                                 | C6060P  | TO-116     | IC—Linear—TV FM Limiting Amplifier, Detector, Preamp, and Driver             |
| C0912P  | TO-116     | IC—HTL—Dual 2-Wide 2-Input AND-OR-INVERT Gate                        | C6061P  | TO-116     | IC—Linear—High-Gain FM/ IF Amplifier   |
| C1030P  | TO-116     | IC—DTL—Dual 4 Input NAND Gate  | C6062P  | TO-116     | IC—Linear—FM/ IF Amplifier with Quadrature Detector                          |
| C1032P  | TO-116     | IC—DTL—Dual 4-Input Buffer   | C6063P  | TO-116     | IC—Linear—FM/ IF Amplifier, Limiter, Detector, Driver, Electronic Attenuator |
| C1033P  | TO-116     | IC—DTL—Dual 4-Input Expander   | C6065P  | Case 647   | IC—Linear—FM Multiplex Stereo Demodulator                                    |
| C1035P  | TO-116     | IC—DTL—Hex Inverter (no pullup resistors)                            | C6066P  | TO-116     | IC—Linear—Chroma Demodulator   |
| C1038P  | TO-116     | IC—DTL—Decade Counter  | C6067G  | TO-100     | IC—Linear—Dual Doubly Balanced Chroma Demodulator                            |
| C1039P  | TO-116     | IC—DTL—Divide-By-Sixteen Counter                                     | C6068P  | Case 647   | IC—Linear—FM Multiplex Stereo Demodulator                                    |
| C1044P  | TO-116     | IC—DTL—Dual 4-Input NAND Power Gate                                  | C6069G  | Case 686   | IC—Linear—AFT/ Amplifier/ Detector/ Driver                                   |
| C1045P  | TO-116     | IC—DTL—Clocked Flip-Flop   | C6070P  | Case 648   | IC—Linear—Subcarrier Regenerator   |
| C1052P  | TO-116     | IC—DTL—Dual J-K Flip-Flop  | C6071P  | TO-116     | IC—Linear—Chroma Amplifier   |
| C1058P  | TO-116     | IC—DTL—Quad 2-Input NAND Power Gate                                  | C6072P  | TO-116     | IC—Linear—Balanced Chroma Demodulator  |
| C1062P  | TO-116     | IC—DTL—Triple 3-Input NAND Gate                                      | C6073P  | Case 675   | IC—Linear—2/ Watt Audio Amplifier  |
| C2001P  | TO-116     | IC—RTL—Quad 2-Input Expander   | C6074P  | Case 647   | IC—Linear—FM Multiplex Stereo Demodulator                                    |
| C2002P  | TO-116     | IC—RTL—Dual Buffer   | C6075P  | TO-116     | IC—Linear—TV Color Processing Circuit  |
| C2003P  | TO-116     | IC—RTL—Quad 2-Input NOR Gate   | C6076P  | TO-116     | IC—Linear—Video IF Amplifier and AGC   |
| C2004P  | TO-116     | IC—RTL—Dual J-K Flip-Flop  | C6077P  | TO-116     | IC—Linear—TV Color Processing Circuit  |
| C2005P  | TO-116     | IC—RTL—Hex Inverter  | C6078R  | Case 614   | IC—Linear—Power Booster  |
| C2006P  | TO-116     | IC—RTL—Dual 2-Input NOR Gate   | C6079P  | Case 626   | IC—Linear—Video Detector   |
| C2007P  | TO-116     | IC—RTL—4-Input OR/ NOR Gate  | C6080P  | TO-116     | IC—Linear—Low-Noise Stereo Preamplifier                                      |
| C2008P  | TO-116     | IC—RTL—Dual Buffer   | C6081P  | TO-116     | IC—Linear—Signal Processor   |
| C2009P  | TO-116     | IC—RTL—J-K Flip-Flop   | C6082P  | Case 647   | IC—Linear—IF Amplifier and Quadrature Detector                               |
| C2010P  | TO-116     | IC—RTL—Dual 2-Input NOR Gate   | C6083P  | Case 647   | IC—Linear—IF Amp/ Limited/ FM Detector/ Driver/ Attenuator                   |
| C2500P  | TO-116     | IC—RTL—Dual 4-Input Expander   | C6085P  | TO-116     | IC—Linear—Signal Processor   |
| C2501P  | Case 612   | IC—RTL—BCD-to-Decimal Decoder  | C6087P  | TO-116     | IC—Linear—Low-Noise Stereo Preamplifier                                      |
| C2502P  | TO-116     | IC—RTL—Quad 2-Input NOR Gate   | C6089   | Case 1A1   | IC—Linear—Chroma Demodulator   |
| C2503P  | TO-116     | IC—RTL—Multifunction Device (1 J-K Flip-Flop, 1 Inverter, 2 Buffers) | C6090   | Case 1A2   | IC—Linear—Dual 2-Watt Audio Amplifier  |
| C3000P  | TO-116     | IC—TTL—Quad 2-Input NAND Gate  | C6091G  | Case 602B  | IC—Linear—High Frequency Amplifier   |
| C3001P  | TO-116     | IC—TTL—Quad 2-Input NAND Gate (direct output)                        | C6092G  | Case 602B  | IC—Linear—Stereo Preamplifier  |
| C3004P  | TO-116     | IC—TTL—Hex Inverter  | C6093G  | Case 602B  | IC—Linear—Audio Power Amplifier  |
| C3010P  | TO-116     | IC—TTL—Triple 3-Input NAND Gate                                      | C6094P  | TO-116     | IC—Linear FM Multiplex Stereo Demodulator                                    |
| C3020P  | TO-116     | IC—TTL—Dual 4-Input NAND Gate  | C6095P  | TO-116     | IC—Linear FM Multiplex Stereo Demodulator                                    |
| C3030P  | TO-116     | IC—TTL—8-Input NAND Gate   | C6096P  | TO-116     | IC—Linear—FM Multiplex Stereo Demodulator                                    |
| C3040P  | TO-116     | IC—TTL—Dual 4-Input NAND Buffer                                      | C6099P  | Case 626   | IC—Linear—IF Amplifier   |
| C3041P  | Case 612   | IC—TTL—BCD-to-Decimal Decoder and High-Level Driver                  | C6100P  | TO-116     | IC—Linear—Automatic Frequency Control  |
| C3050P  | TO-116     | IC—TTL—Dual 2-Wide 2-Input AND-OR-INVERT Gate                        | C6101P  | Case 647   | IC—Linear—FM IF Amplifier, Limiter, Detector, Audio Preamp                   |
| C3073P  | TO-116     | IC—TTL—Dual J-K Flip-Flop  | C6102P  | Case 626   | IC—Linear—Dual Operational Amplifier   |
| C3075P  | Case 612   | IC—TTL—Quad Latch  | C6103P  | Case 626   | IC—Linear—Operational Amplifier  |
| C3800P  | TO-116     | IC—TTL—Decade Counter  | C6104L  | TO-116     | IC—Linear—Voltage Regulator  |
| C3801P  | TO-116     | IC—TTL—Divide-By-Twelve Counter                                      | C6105P  | 199        | IC—Linear—Voltage Regulator  |
| C3802P  | Case 612   | IC—TTL—Seven-Segment Character Generator                             | C6107P  | Case 626   | IC—Linear—Operational Amplifier  |
| C3803P  | TO-116     | IC—TTL—Retriggerable Monostable Multivibrator                        | C6110P  | 199(A)     | 5.0V Positive Voltage Regulator  |
| C3804P  | TO-116     | IC—TTL—Programmable Module—N Decode Counter                          | C6111P  | 199(A)     | 6.0V Positive Voltage Regulator  |
| C3805P  | TO-116     | IC—TTL—Dual Voltage-Controlled Multivibrator                         | C6112P  | 199(A)     | 8.0V Positive Voltage Regulator  |
| C3806P  | TO-116     | IC—TTL—Phase-Frequency Detector                                      | C6113P  | 199(A)     | 12.0V Positive Voltage Regulator   |
| C6001   | Case 643A  | IC—Linear—FM IF Amplifier (Replacement for $\mu$ A703 or CA3053)     | C6114P  | 199(A)     | 15.0V Positive Voltage Regulator   |
| C6002   | Case 644A  | IC—Linear—Low-Noise Audio Preamplifier                               | C6115P  | 199(A)     | 18.0V Positive Voltage Regulator   |
| C6003   | Case 206A  | IC—Linear—1/4-Watt Audio Amplifier                                   | C6116P  | 199(A)     | 24.0V Positive Voltage Regulator   |
| C6004   | Case 644A  | IC—Linear—1-Watt Audio Amplifier and Preamp                          | C6117P  | 199(B)     | 2.0V Negative Voltage Regulator  |
| C6007   | Case 206A  | IC—Linear—Single Toggle Flip-Flop                                    | C6118P  | 199(B)     | 5.0V Negative Voltage Regulator  |
| C6008   | Case 643A  | IC—Linear—1/ Watt Audio Amplifier and Preamp                         | C6119P  | 199(B)     | 5.2V Negative Voltage Regulator  |
| C6009   | Case 643A  | IC—Linear—Electronic Remote-Control Attenuator                       | C6120P  | 199(B)     | 6.0V Negative Voltage Regulator  |
| C6010   | Case 206A  | IC—Linear—Wide-Band Amplifier  | C6121P  | 199(B)     | 8.0V Negative Voltage Regulator  |
| C6011   | Case 643A  | IC—Linear—Dual-Toggle Flip-Flop                                      | C6122P  | 199(B)     | 12V Negative Voltage Regulator   |
| C6012   | Case 643A  | IC—Linear—Voltage Regulator  | C6123P  | 199(B)     | 15V Negative Voltage Regulator   |
| C6013   | Case 206A  | IC—Linear—Class A Audio Driver                                       | C6124P  | 199(B)     | 18V Negative Voltage Regulator   |
| C6014   | Case 206A  | IC—Linear—Voltage Regulator  | C6125P  | 199(B)     | 24V Negative Voltage Regulator   |
| C6015   | Case 643A  | IC—Linear—Dual-Toggle Flip-Flop with Reset                           | F0015   | TO-72(A)   | Field Effect Transistor—Audio—N-Channel                                      |
| C6016   | Case 644A  | IC—Linear—Class B Audio Driver                                       | F0015   | TO-92(E)   | Field Effect Transistor—RF—N-Channel   |
| C6049G  | Case 602A  | IC—Linear—Voltage Regulator (Positive)                               | F0021   | TO-92(E)   | Field Effect Transistor—VHF/ UHF—N-Channel                                   |
| C6049R  | Case 614   | IC—Linear—Voltage Regulator (Positive)                               |         |            |  |
| C6050G  | Case 602A  | IC—Linear—Balanced Modulator/ Demodulator                            |         |            |  |



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Dimensions and Outline Drawings for all Cases Referenced in the Following Chart are shown on Pages 10, 11, and 12

| HEP NO. | CASE STYLE  | DESCRIPTION                                     |
|---------|-------------|---|
| F1035   | TO-92(F)    | Field Effect Transistor—RF—P-Channel            |
| F1036   | TO-72(D)    | Field Effect Transistor—Audio RF—P-Channel      |
| F2004   | TO-72(B)    | MOS FET—Dual Gate—VHF—N-Channel                 |
| F2005   | TO-72(A)    | MOS FET—VHF/UHF—N-Channel                       |
| F2007   | Case 206    | MOS FET—Dual Gate—N-Channel                     |
| G0001   | TO-3        | Ge RF Transistor—PNP—200MHz 150mW               |
| G0002   | TO-5(A)     | Ge RF Transistor—PNP—750MHz 300mW               |
| G0003   | TO-72(C)    | Ge RF Transistor—PNP—400MHz 100mW               |
| G0005   | TO-5(A)**   | Ge General Purpose Transistor—PNP—200MHz 225mW  |
| G0006   | TO-5(A)     | Ge General Purpose Audio Amplifier—PNP          |
| G0007   | TO-5(A)     | Ge General Purpose Audio Amplifier—PNP          |
| G0008   | TO-18       | Ge General Purpose RF/IF/Osc—PNP                |
| G0009   | TO-18       | Ge RF Transistor PNP—25MHz 200mW                |
| G0011   | TO-18       | Ge RF Transistor PNP—150MHz 150mW               |
| G6000   | TO-3        | Ge High Current Pwr Transistor—30V 3A 90W       |
| G6001   | TO-3        | Ge High Current Pwr Transistor—PNP—90V 25A 85W  |
| G6002   | TO-36       | Ge High Current Pwr Transistor—PNP—40V 65A 170W |
| G6003   | TO-3        | Ge High Current Pwr Transistor—PNP—30V 5A 90W   |
| G6004   | TO-3        | Ge High Current Pwr Transistor—PNP—30V 15A 170W |
| G6005   | TO-3        | Ge High Current Pwr Transistor—PNP—70V 7A 90W   |
| G6006   | TO-3        | Ge High Current Pwr Transistor—PNP—65V 15A 170W |
| G6007   | TO-3        | Ge High Current Pwr Transistor—PNP—200V 5A 56W  |
| G6008   | TO-3        | Ge High Current Pwr Transistor—PNP—320V 10A 56W |
| G6009   | TO-41       | Ge High Current Pwr Transistor—PNP—80V 25A 106W |
| G6010   | TO-36       | Ge High Current Pwr Transistor—PNP—75V 30A 170W |
| G6011   | TO-5(A)     | Ge High Current Pwr Transistor—PNP—60V 3A 20W   |
| G6012   | TO-5(A)     | Ge High Current Pwr Transistor—100V 3A 20W      |
| G6013   | TO-3        | Ge General Purpose Audio Power Amplifier—PNP    |
| G6014   | TO-3        | Ge High Current Pwr Transistor—PNP—80V 20A 85W  |
| G6015   | TO-3        | Ge High Current Pwr Transistor—PNP—80V 10A 85W  |
| G6016   | TO-3        | Ge High Current Pwr Transistor—PNP—30V 7A 57W   |
| G6017   | TO-3        | Ge High Current Pwr Transistor—160V 10A 85W     |
| G6018   | TO-3        | Ge High Current Pwr Transistor—100V 10A 90W     |
| P0001   | Case 82     | Si Phototransistor—NPN                          |
| P0002   | Case 173    | Si Phototransistor—NPN                          |
| P0003   | Case 171(A) | Si Phototransistor—NPN                          |
| P1001   | TO-92(L)    | Si Darlington Amplifier Phototransistor—NPN     |
| P2000   | Case 171(B) | Light-Emitting Diode                            |
| P2001   | Case 234-02 | Light-Emitting Diode                            |
| P2002   | Case 171(B) | Infrared-Emitting Diode                         |
| P2003   | Case 171(B) | Light-Emitting Diode                            |
| P2004   | Case 234-02 | Light-Emitting Diode (Diffused Lens)            |
| P2005   | Case 279    | Light-Emitting Diode                            |
| R0050   | DO-41       | Silicon Rectifier, Axial Lead, 50PIV 1Amp       |
| R0051   | DO-41       | Silicon Rectifier, Axial Lead, 100PIV 1Amp      |
| R0052   | DO-41       | Silicon Rectifier, Axial Lead, 200PIV 1Amp      |
| R0053   | DO-41       | Silicon Rectifier, Axial Lead, 400PIV 1Amp      |
| R0054   | DO-41       | Silicon Rectifier, Axial Lead, 600PIV 1Amp      |
| R0055   | DO-41       | Silicon Rectifier, Axial Lead, 800PIV 1Amp      |
| R0056   | DO-41       | Silicon Rectifier, Axial Lead, 1000PIV 1Amp     |
| R0080   | Case 70     | Si Press-Fit Rectifier—50PIV 3A                 |
| R0081   | Case 70     | Si Press-Fit Rectifier—100PIV 3A                |
| R0082   | Case 70     | Si Press-Fit Rectifier—200PIV 3A                |
| R0084   | Case 70     | Si Press-Fit Rectifier—400PIV 3A                |
| R0086   | Case 70     | Si Press-Fit Rectifier—600PIV 3A                |
| R0090   | Case 60     | Si "Top Hat" Rectifier—50PIV 3A                 |
| R0091   | Case 60     | Si "Top Hat" Rectifier—100PIV 3A                |
| R0092   | Case 60     | Si "Top Hat" Rectifier—200PIV 3A                |
| R0094   | Case 60     | Si "Top Hat" Rectifier—400PIV 3A                |
| R0096   | Case 60     | Si "Top Hat" Rectifier—600PIV 3A                |
| R0097   | Case 60     | Si "Top Hat" Rectifier—800PIV 3A                |
| R0098   | Case 60     | Si "Top Hat" Rectifier—1000PIV 3A               |
| R0100   | Case 194    | Si "Axial Lead" Rectifier—50PIV 6A              |
| R0101   | Case 194    | Si "Axial Lead" Rectifier—100PIV 6A             |
| R0102   | Case 194    | Si "Axial Lead" Rectifier—200PIV 6A             |
| R0104   | Case 194    | Si "Axial Lead" Rectifier—400PIV 6A             |
| R0106   | Case 194    | Si "Axial Lead" Rectifier—600PIV 6A             |
| R0130   | DO-4(A)     | Si Stud Mount Rectifier—50PIV 12A               |
| R0131   | DO-4(A)     | Si Stud Mount Rectifier—100PIV 12A              |
| R0132   | DO-4(A)     | Si Stud Mount Rectifier—200PIV 12A              |
| R0134   | DO-4(A)     | Si Stud Mount Rectifier—400PIV 12A              |
| R0136   | DO-4(A)     | Si Stud Mount Rectifier—600PIV 12A              |
| R0137   | DO-4(A)     | Si Stud Mount Rectifier—800PIV 12A              |
| R0138   | DO-4(A)     | Si Stud Mount Rectifier—1000PIV 12A             |
| R0160   | DO-5        | Si Stud Mount Rectifier—50PIV 15A               |
| R0161   | DO-5        | Si Stud Mount Rectifier—100PIV 15A              |

| HEP NO. | CASE STYLE  | DESCRIPTION                                 |
|---------|-------------|---|
| R0162   | DO-5        | Si Stud Mount Rectifier—200PIV 15A          |
| R0164   | DO-5        | Si Stud Mount Rectifier—400PIV 15A          |
| R0166   | DO-5        | Si Stud Mount Rectifier—600PIV 15A          |
| R0220   | DO-21       | Si Press-Fit Rectifier—50PIV 25A            |
| R0222   | DO-21       | Si Press-Fit Rectifier—200PIV 25A           |
| R0250   | DO-5        | Si Stud Mount Rectifier—50PIV 35A           |
| R0251   | DO-5        | Si Stud Mount Rectifier—100PIV 35A          |
| R0253   | DO-5        | Si Stud Mount Rectifier—200PIV 35A          |
| R0254   | DO-5        | Si Stud Mount Rectifier—300PIV 35A          |
| R0255   | DO-5        | Si Stud Mount Rectifier—400PIV 35A          |
| R0256   | DO-5        | Si Stud Mount Rectifier—500PIV 35A          |
| R0257   | DO-5        | Si Stud Mount Rectifier—600PIV 35A          |
| R0600   | DO-41       | Si Fast Recovery Rectifier, 50PIV 1Amp      |
| R0602   | DO-41       | Si Fast Recovery Rectifier, 200PIV 1Amp     |
| R0604   | DO-41       | Si Fast Recovery Rectifier, 400PIV 1Amp     |
| R0606   | DO-41       | Si Fast Recovery Rectifier, 600PIV 1Amp     |
| R0700   | TO-92A      | Si UHF Diode (Hot-Carrier)                  |
| R0801   | Case 108    | Full Wave Bridge Rectifier—50PIV 1Amp       |
| R0802   | Case 108    | Full Wave Bridge Rectifier—100PIV 1Amp      |
| R0803   | Case 108    | Full Wave Bridge Rectifier—200PIV 1Amp      |
| R0804   | Case 108    | Full Wave Bridge Rectifier—400PIV 1Amp      |
| R0805   | Case 108    | Full Wave Bridge Rectifier—600PIV 1Amp      |
| R0841   | Case 216    | Full-Wave Bridge Rectifier, 50Volt 1.8Amp   |
| R0842   | Case 216    | Full-Wave Bridge Rectifier, 100Volt 1.8Amp  |
| R0843   | Case 216    | Full-Wave Bridge Rectifier, 200Volt 1.8Amp  |
| R0845   | Case 216    | Full-Wave Bridge Rectifier, 400Volt 1.8Amp  |
| R0846   | Case 216    | Full-Wave Bridge Rectifier, 600Volt 1.8Amp  |
| R0875   | Case 179    | Full-Wave Bridge Rectifier, 50Volt 12Amp    |
| R0876   | Case 179    | Full-Wave Bridge Rectifier, 100Volt 12Amp   |
| R0877   | Case 179    | Full-Wave Bridge Rectifier, 200Volt 12Amp   |
| R0878   | Case 179    | Full-Wave Bridge Rectifier, 400Volt 12Amp   |
| R0879   | Case 179    | Full-Wave Bridge Rectifier, 600Volt 12Amp   |
| R0880   | Case 179    | Full-Wave Bridge Rectifier, 50Volt 27Amp    |
| R0881   | Case 179    | Full-Wave Bridge Rectifier, 100Volt 27Amp   |
| R0882   | Case 179    | Full-Wave Bridge Rectifier, 200Volt 27Amp   |
| R0883   | Case 179    | Full-Wave Bridge Rectifier, 400Volt 27Amp   |
| R0884   | Case 179    | Full-Wave Bridge Rectifier, 600Volt 27Amp   |
| R1001   | TO-92(G)    | Thyristor (SCR)—30V 800mA                   |
| R1002   | TO-92(G)    | Thyristor (SCR)—60V 800mA                   |
| R1003   | TO-92(G)    | Thyristor (SCR)—100V 800mA                  |
| R1004   | TO-92(G)    | Thyristor (SCR)—150V 800mA                  |
| R1005   | TO-92(G)    | Thyristor (SCR)—200V 800mA                  |
| R1202   | Case 87L    | Thyristor (SCR)—50V 8Amp                    |
| R1205   | Case 87L    | Thyristor (SCR)—400V 8Amp                   |
| R1215   | Case 77(B)  | Sensitive-Gate Thyristor (SCR)—30Volt 4Amp  |
| R1216   | Case 77(B)  | Sensitive-Gate Thyristor (SCR)—60Volt 4Amp  |
| R1217   | Case 77(B)  | Sensitive-Gate Thyristor (SCR)—100Volt 4Amp |
| R1218   | Case 77(B)  | Sensitive-Gate Thyristor (SCR)—200Volt 4Amp |
| R1220   | Case 90(A)  | Thyristor (SCR)—50V 8A                      |
| R1221   | Case 90(A)  | Thyristor (SCR)—200V 8A                     |
| R1222   | Case 90(A)  | Thyristor (SCR)—400V 8A                     |
| R1223   | Case 90(A)  | Thyristor (SCR)—600V 8A                     |
| R1241   | Case 86(A)  | Thyristor (SCR)—50V 8A                      |
| R1242   | Case 86(A)  | Thyristor (SCR)—100V 8A                     |
| R1243   | Case 86(A)  | Thyristor (SCR)—200V 8A                     |
| R1244   | Case 86(A)  | Thyristor (SCR)—300V 8A                     |
| R1245   | Case 86(A)  | Thyristor (SCR)—400V 8A                     |
| R1246   | Case 86(A)  | Thyristor (SCR)—500V 8A                     |
| R1247   | Case 86(A)  | Thyristor (SCR)—600V 8A                     |
| R1300   | Case 175(A) | Thyristor (SCR)—25V 20A                     |
| R1301   | Case 175(A) | Thyristor (SCR)—50V 20A                     |
| R1302   | Case 175(A) | Thyristor (SCR)—100V 20A                    |
| R1304   | Case 175(A) | Thyristor (SCR)—200V 20A                    |
| R1306   | Case 175(A) | Thyristor (SCR)—300V 20A                    |
| R1307   | Case 175(A) | Thyristor (SCR)—400V 20A                    |
| R1471   | Case 175(A) | Thyristor (SCR)—50V 35A                     |
| R1472   | Case 175(A) | Thyristor (SCR)—100V 35A                    |
| R1473   | Case 175(A) | Thyristor (SCR)—200V 35A                    |
| R1475   | Case 175(A) | Thyristor (SCR)—400V 35A                    |
| R1721   | Case 90(B)  | Triac—50V 8A                                |
| R1722   | Case 90(B)  | Triac—100V 8A                               |
| R1723   | Case 90(B)  | Triac—200V 8A                               |
| R1725   | Case 90(B)  | Triac—400V 8A                               |
| R1750   | Case 86(B)  | Triac—50V 10A                               |
| R1751   | Case 86(B)  | Triac—200V 10A                              |
| R1752   | Case 86(B)  | Triac—400V 10A                              |



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Dimensions and Outline Drawings for all Cases Referenced in the Following Chart are shown on Pages 10, 11, and 12

| HEP NO. | CASE STYLE  | DESCRIPTION  | HEP NO. | CASE STYLE | DESCRIPTION  |
|---------|-------------|--|---------|------------|--|
| R1781   | Case 175(B) | Triac—50V 25A  | S3013   | TO-39      | Si RF Power Transistor—NPN—250MHz 3W   |
| R1782   | Case 175(B) | Triac—100V 25A   | S3014   | TO-39      | Si RF Power Transistor—NPN—250MHz 3W   |
| R1783   | Case 175(B) | Triac—200V 25A   | S3019   | Case 152   | Si High Voltage Audio Amplifier—NPN  |
| R1785   | Case 175(B) | Triac—400V 25A   | S3020   | Case 152   | Si Medium Power Transistor—NPN—60V 1A 5W—150MHz  |
| R2001   | TO-92(H)    | Si Bidirectional Switch—8V 2A  | S3021   | Case 152   | Si High Voltage Transistor—NPN—250V 1A 5W—100MHz $h_{FE}$ 120 typ  |
| R2002   | TO-92A(B)   | Si Bilateral Trigger Diode   | S3024   | Case 152   | Si General Purpose Amplifier—NPN—35V 1.5A 8W—50MHz $h_{FE}$ 200 typ  |
| R2021   | TO-92(K)    | Si Unidirectional Switch—8V 2A   | S3028   | Case 152   | Si General Purpose Amplifier—PNP—35V 1.5A 8W—50MHz $h_{FE}$ 200 typ  |
| R2500   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—6.1 to 7.5 pf                    | S3032   | Case 152   | Si Medium Power Transistor—PNP—100V 2A 10W—100MHz  |
| R2501   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—9.0 to 11.0 pf                   | S3033   | TO-39      | Si Medium Power Transistor—NPN—160V 100mA 1W—110 MHz   |
| R2502   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—13.5 to 16.5 pf                  | S3034   | TO-39      | Si Medium Power Transistor—NPN—210V 100mA 1W—110MHz  |
| R2503   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—29.7 to 36.3 pf                  | S3035   | TO-39      | Si Medium Power Transistor—NPN—270V 100mA 1W—110MHz  |
| R2504   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—50.4 to 61.6 pf                  | S5000   | Case 77(A) | Si General Purpose Power Amplifier—NPN—80V 4A 40W  |
| R2505   | TO-92A(A)   | Si Voltage-Variable Capacitance Diode—90.0 to 110.0 pf                 | S5004   | Case 90(C) | Si General Purpose Power Amplifier—NPN—90V 7A 90W  |
| R3010   | DO-41       | Si Fast Recovery High Voltage Rectifier—1200PIV 3 $\mu$ sec            | S5005   | Case 90(C) | Si General Purpose Power Amplifier—PNP—90V 7A 90W  |
| R3012   | DO-41       | Si Fast Recovery High Voltage Rectifier—1600PIV 1Amp 3 $\mu$ sec       | S5006   | Case 77(A) | Si General Purpose Power Amplifier—PNP—80V 4A 40W  |
| R3100   | Case 277    | Si High Voltage Rectifier—45,000V 2.2mA 300mSec                        | S5011   | TO-66      | Si Pwr Transistor—NPN—300V 500mA 10W   |
| R9001   | TO-92(C)    | Si Dual Diode—Common Cathode   | S5012   | TO-66      | Si High Power Transistor — NPN — 160V 5A 40W   |
| R9002   | TO-92(D)    | Si Dual Diode—Common Anode   | S5013   | TO-5(A)    | Si Med Power Transistor—PNP—60V 3A 6W (Comp. to 243)   |
| R9003   | TO-92(A)    | Si Dual Diode—Series Connected   | S5014   | TO-5(A)    | Si Med Power Transistor—NPN—60V 3A 6W (Comp. to 242)   |
| R9134   | TO-18A      | Ge Diode   | S5015   | Case 77(A) | Si High Voltage Pwr Transistor—NPN—300V 500mA  |
| R9135   | TO-18A      | Ge Diode   | S5018   | TO-66      | Si General Purpose Audio Amplifier—PNP   |
| S0005   | TO-92(A)    | Si General Purpose High Voltage Amplifier—NPN                          | S5019   | TO-66      | Si General Purpose Audio Amplifier—NPN   |
| S0008   | TO-92(B)    | Si VHF Transistor 1st and 2nd Video IF—NPN                             | S5020   | TO-3       | Si High Voltage High Pwr—NPN (400V 10Amp)  |
| S0009   | TO-92(B)    | Si VHF Transistor Mixer and 3rd Video IF—NPN                           | S5021   | TO-3       | Si High Voltage High Pwr—NPN (700V 3.5Amp)   |
| S0010   | TO-92(B)    | Si VHF/ UHF Transistor Mixer/ Oscillator—NPN                           | S5022   | TO-18      | Si Low Pwr RF Amplifier—PNP  |
| S0011   | TO-18       | Si General Purpose Amplifier   | S5023   | TO-5(A)    | Si Low Freq RF and Audio Amplifier—PNP   |
| S0012   | TO-5(A)     | Si RF Transistor—PNP—150MHz 600mW                                      | S5024   | TO-39      | Si General Purpose Audio Amplifier—NPN   |
| S0013   | TO-18       | Si RF Transistor—PNP—200MHz 400mW                                      | S5025   | TO-5(A)    | Si Low Freq Oscillator Mixer RF Amp (NPN)  |
| S0014   | TO-5(A)     | Si RF Transistor—NPN—200MHz 600mW                                      | S5026   | TO-5(A)    | Si Low Freq Oscillator Mixer RF Amp (NPN)  |
| S0015   | TO-92(A)    | Si General Purpose Transistor Low-Power Large-Signal—NPN               | S7000   | TO-3       | Si High Power Transistor—NPN—100V 30A 200W   |
| S0016   | TO-92(B)    | Si VHF/ UHF Transistor FM and TV Mixer/ Oscillator—NPN                 | S7001   | TO-3       | Si High Power Transistor—PNP—100V 30A 200W   |
| S0017   | TO-72(C)    | Si UHF Oscillator Mixer, RF Amplifier—NPN                              | S7002   | TO-3       | Si High Power Transistor—NPN—70V 10A 150W  |
| S0019   | TO-92(A)    | Si General Purpose Medium Current Amplifier and Switch—PNP             | S7003   | TO-3       | Si High Power Transistor—PNP—70V 10A 150W  |
| S0020   | TO-92(A)    | Si VHF Transistor Mixer—NPN  | S7004   | TO-3       | Si General Purpose Audio Amplifier NPN   |
| S0024   | TO-92(A)    | Si Transistor Low-Level Low-Noise—NPN                                  | S7005   | TO-3       | Si High Voltage High Power—NPN—(1400 Volts 2.5 Amp)  |
| S0025   | TO-92(A)    | Si General Purpose Transistor Amplifier/ Switch—NPN                    | S9001   | TO-92(G)   | Programmable Unijunction Transistor (unijunction characteristics such as $R_{BB}$ , $\eta$ , $I_{11}$ , and $I_1$ can be altered (programmed) by merely changing the gate bias and supply resistors) |
| S0026   | TO-92(A)    | Si General Purpose Transistor Audio Driver/ Output—PNP                 | S9002   | TO-92(J)   | Si Unijunction Transistor 300mW  |
| S0027   | TO-92(A)    | Si High-Voltage Transistor Complement to S0028—NPN                     | S9100   | TO-92(A)   | Si Darlington Amplifier—NPN  |
| S0028   | TO-92(A)    | Si High-Voltage Transistor Complement to S0027—PNP                     | S9101   | Case 77(A) | Si Darlington Amplifier—NPN—60V 4A 40W   |
| S0029   | TO-92(A)    | Si High-Voltage General Purpose Transistor Amplifier/ Mixer Driver—PNP | S9102   | Case 90(C) | Si Darlington Amplifier—NPN—60V 5A 70W   |
| S0030   | TO-92(A)    | General Purpose RF Amplifier—NPN                                       | S9103   | Case 152   | Medium Power Darlington Amp—NPN  |
| S0031   | TO-92(A)    | General Purpose Amplifier—NPN  | S9120   | TO-92(A)   | Si Darlington Amplifier—PNP  |
| S0032   | TO-92(A)    | Medium Speed Switch—PNP  | S9121   | Case 77(A) | Si Darlington Amplifier—PNP—60V 4A 40W   |
| S0033   | TO-92(B)    | General Purpose—NPN  | S9122   | Case 90(C) | Si Darlington Amplifier—PNP—60V 5A 70W   |
| S3001   | TO-39       | Si RF Power Transistor—NPN—65V 1A 5W P out @ 500MHz                    | S9123   | Case 152   | Medium Power Darlington Amplifier—PNP  |
| S3002   | TO-39       | Si Medium Power Transistor—NPN—80V 5A 6W 30MHz                         | S9140   | TO-3       | Si Darlington Amplifier—NPN—60V 5A 90W   |
| S3003   | TO-39       | Si Medium Power Transistor—PNP—80V 5A 6W 30MHz                         | S9141   | TO-3       | Si Darlington Amplifier—PNP—60V 5A 90W   |
| S3004   | TO-39       | Si RF Power Transistor—NPN—27MHz 3.4W                                  | S9142   | TO-3       | Si Darlington Amplifier—NPN—100V 16A 150W  |
| S3005   | Case 144B   | Si RF Power Transistor—NPN—36V 1A 2W P out @ 175MHz                    | S9143   | TO-3       | Si Darlington Amplifier—PNP—100V 16A 150W  |
| S3006   | Case 144B   | Si RF Power Transistor—NPN—36V 3A 10W P out @ 175MHz                   | Z0206   | TO-92A(A)  | 3.3 Volt Zener Diode 500mW   |
| S3007   | Case 145A   | Si RF Power Transistor—NPN—36V 5A 25W P out @ 175MHz                   | Z0208   | TO-92A(A)  | 3.9 Volt Zener Diode 500mW   |
| S3008   | TO-39       | Si RF Power Transistor—NPN—55V 400mA 1.5W P out @ 400MHz               | Z0210   | TO-92A(A)  | 4.7 Volt Zener Diode 500mW   |
| S3009   | Case 145A   | Si RF Power Transistor—NPN—36V 6A 40W P out @ 175MHz                   | Z0211   | TO-92A(A)  | 5.1 Volt Zener Diode 500mW   |
| S3010   | TO-39       | Si Medium Power Transistor—NPN—70V 4A 10W—30MHz                        | Z0212   | TO-92A(A)  | 5.6 Volt Zener Diode 500mW   |
| S3011   | TO-39       | Si Medium Power Transistor—NPN—70V 1A 1W—100MHz Complement to S3012    | Z0214   | TO-92A(A)  | 6.2 Volt Zener Diode 500mW   |
| S3012   | TO-39       | Si Medium Power Transistor—PNP—70V—1A—1W 100MHz Complement to S3011    | Z0215   | TO-92A(A)  | 6.8 Volt Zener Diode 500mW   |
|         |             |  | Z0216   | TO-92A(A)  | 7.5 Volt Zener Diode 500mW   |
|         |             |  | Z0217   | TO-92A(A)  | 8.2 Volt Zener Diode 500mW   |
|         |             |  | Z0219   | TO-92A(A)  | 9.1 Volt Zener Diode 500mW   |

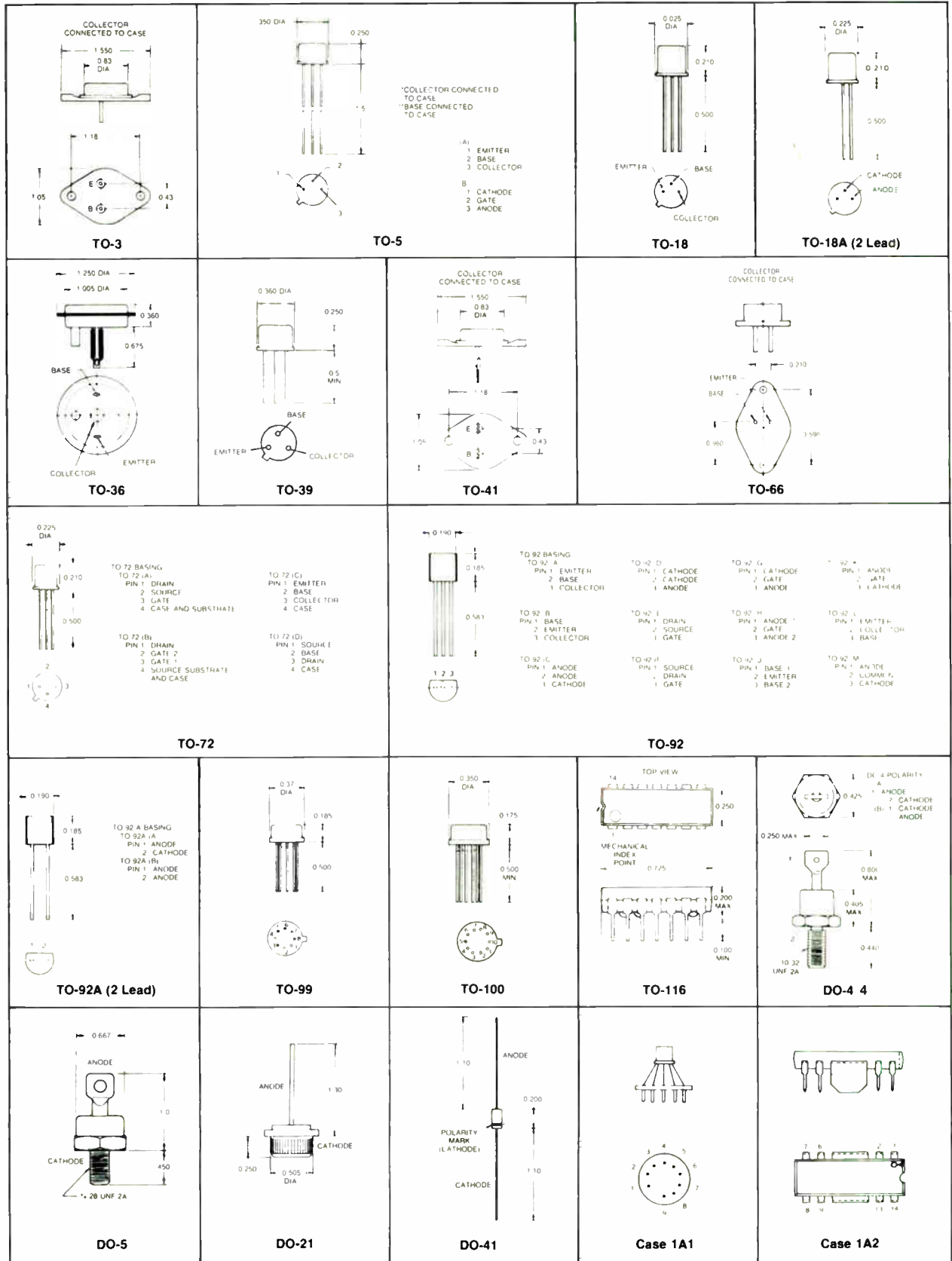
# HEP Semiconductor Description and Packaging Index

Dimensions and Outline Drawings for all Cases Referenced in the Following Chart are shown on Pages 10, 11, and 12

| HEP NO. | CASE STYLE | DESCRIPTION                 |
|---------|------------|-----------------------------|
| Z0220   | TO-92A(A)  | 10 Volt Zener Diode 500mW   |
| Z0222   | TO-92A(A)  | 12 Volt Zener Diode 500mW   |
| Z0225   | TO-92A(A)  | 15 Volt Zener Diode 500mW   |
| Z0228   | TO-92A(A)  | 18 Volt Zener Diode 500mW   |
| Z0230   | TO-92A(A)  | 20 Volt Zener Diode 500mW   |
| Z0231   | TO-92A(A)  | 22 Volt Zener Diode 500mW   |
| Z0234   | TO-92A(A)  | 27 Volt Zener Diode 500mW   |
| Z0254   | TO-92A(A)  | 130 Volt Zener Diode 500mW  |
| Z0255   | TO-92A(A)  | 140 Volt Zener Diode 500mW  |
| Z0401   | DO-41      | 3.3 Volt Zener Diode 1 Watt |
| Z0402   | DO-41      | 3.6 Volt Zener Diode 1 Watt |
| Z0403   | DO-41      | 3.9 Volt Zener Diode 1 Watt |
| Z0405   | DO-41      | 4.7 Volt Zener Diode 1 Watt |
| Z0406   | DO-41      | 5.1 Volt Zener Diode 1 Watt |
| Z0407   | DO-41      | 5.6 Volt Zener Diode 1 Watt |
| Z0408   | DO-41      | 6.2 Volt Zener Diode 1 Watt |
| Z0409   | DO-41      | 6.8 Volt Zener Diode 1 Watt |
| Z0410   | DO-41      | 7.5 Volt Zener Diode 1 Watt |
| Z0411   | DO-41      | 8.2 Volt Zener Diode 1 Watt |
| Z0412   | DO-41      | 9.1 Volt Zener Diode 1 Watt |
| Z0413   | DO-41      | 10 Volt Zener Diode 1 Watt  |
| Z0414   | DO-41      | 11 Volt Zener Diode 1 Watt  |
| Z0415   | DO-41      | 12 Volt Zener Diode 1 Watt  |
| Z0416   | DO-41      | 13 Volt Zener Diode 1 Watt  |
| Z0417   | DO-41      | 14 Volt Zener Diode 1 Watt  |
| Z0418   | DO-41      | 15 Volt Zener Diode 1 Watt  |
| Z0419   | DO-41      | 16 Volt Zener Diode 1 Watt  |
| Z0420   | DO-41      | 18 Volt Zener Diode 1 Watt  |
| Z0421   | DO-41      | 20 Volt Zener Diode 1 Watt  |
| Z0422   | DO-41      | 22 Volt Zener Diode 1 Watt  |
| Z0423   | DO-41      | 24 Volt Zener Diode 1 Watt  |
| Z0424   | DO-41      | 27 Volt Zener Diode 1 Watt  |
| Z0425   | DO-41      | 28 Volt Zener Diode 1 Watt  |
| Z0426   | DO-41      | 33 Volt Zener Diode 1 Watt  |
| Z0427   | DO-41      | 36 Volt Zener Diode 1 Watt  |
| Z0428   | DO-41      | 39 Volt Zener Diode 1 Watt  |
| Z0430   | DO-41      | 47 Volt Zener Diode 1 Watt  |
| Z0432   | DO-41      | 56 Volt Zener Diode 1 Watt  |
| Z0433   | DO-41      | 62 Volt Zener Diode 1 Watt  |
| Z0436   | DO-41      | 82 Volt Zener Diode 1 Watt  |
| Z0438   | DO-41      | 100 Volt Zener Diode 1 Watt |
| Z0439   | DO-41      | 110 Volt Zener Diode 1 Watt |

| HEP NO. | CASE STYLE | DESCRIPTION                  |
|---------|------------|------------------------------|
| Z0440   | DO-41      | 120 Volt Zener Diode 1 Watt  |
| Z0442   | DO-41      | 150 Volt Zener Diode 1 Watt  |
| Z0444   | DO-41      | 180 Volt Zener Diode 1 Watt  |
| Z0445   | DO-41      | 200 Volt Zener Diode 1 Watt  |
| Z2500   | Case 17    | 3.3 Volt Zener Diode 5 Watt  |
| Z2502   | Case 17    | 3.9 Volt Zener Diode 5 Watt  |
| Z2504   | Case 17    | 4.7 Volt Zener Diode 5 Watt  |
| Z2506   | Case 17    | 5.6 Volt Zener Diode 5 Watt  |
| Z2508   | Case 17    | 6.2 Volt Zener Diode 5 Watt  |
| Z2510   | Case 17    | 7.5 Volt Zener Diode 5 Watt  |
| Z2513   | Case 17    | 9.1 Volt Zener Diode 5 Watt  |
| Z2514   | Case 17    | 10 Volt Zener Diode 5 Watt   |
| Z2516   | Case 17    | 12 Volt Zener Diode 5 Watt   |
| Z2519   | Case 17    | 15 Volt Zener Diode 5 Watt   |
| Z2522   | Case 17    | 18 Volt Zener Diode 5 Watt   |
| Z2525   | Case 17    | 22 Volt Zener Diode 5 Watt   |
| Z2526   | Case 17    | 24 Volt Zener Diode 5 Watt   |
| Z2528   | Case 17    | 27 Volt Zener Diode 5 Watt   |
| Z2530   | Case 17    | 30 Volt Zener Diode 5 Watt   |
| Z2531   | Case 17    | 33 Volt Zener Diode 5 Watt   |
| Z2537   | Case 17    | 56 Volt Zener Diode 5 Watt   |
| Z2542   | Case 17    | 82 Volt Zener Diode 5 Watt   |
| Z2545   | Case 17    | 100 Volt Zener Diode 5 Watt  |
| Z2547   | Case 17    | 120 Volt Zener Diode 5 Watt  |
| Z2548   | Case 17    | 130 Volt Zener Diode 5 Watt  |
| Z2551   | Case 17    | 160 Volt Zener Diode 5 Watt  |
| Z3500   | DO-4(A)    | 3.9 Volt Zener Diode 10 Watt |
| Z3502   | DO-4(A)    | 4.7 Volt Zener Diode 10 Watt |
| Z3504   | DO-4(A)    | 5.6 Volt Zener Diode 10 Watt |
| Z3505   | DO-4(A)    | 6.2 Volt Zener Diode 10 Watt |
| Z3507   | DO-4(A)    | 7.5 Volt Zener Diode 10 Watt |
| Z3511   | DO-4(B)    | 9.1 Volt Zener Diode 10 Watt |
| Z3512   | DO-4(B)    | 10 Volt Zener Diode 10 Watt  |
| Z3514   | DO-4(B)    | 12 Volt Zener Diode 10 Watt  |
| Z3516   | DO-4(B)    | 15 Volt Zener Diode 10 Watt  |
| Z3518   | DO-4(B)    | 18 Volt Zener Diode 10 Watt  |
| Z3520   | DO-4(B)    | 22 Volt Zener Diode 10 Watt  |
| Z3522   | DO-4(B)    | 27 Volt Zener Diode 10 Watt  |
| Z3524   | DO-4(B)    | 33 Volt Zener Diode 10 Watt  |
| Z3530   | DO-4(B)    | 56 Volt Zener Diode 10 Watt  |
| Z3534   | DO-4(B)    | 82 Volt Zener Diode 10 Watt  |
| Z3536   | DO-4(B)    | 100 Volt Zener Diode 10 Watt |

# HEP Semiconductor Outline Dimensions





# HEP Semiconductor Outline Dimensions

|                        |                        |                         |                        |                        |
|------------------------|------------------------|-------------------------|------------------------|------------------------|
| <p><b>Case 17</b></p>  | <p><b>Case 60</b></p>  | <p><b>Case 70</b></p>   | <p><b>Case 71</b></p>  | <p><b>Case 77</b></p>  |
| <p><b>Case 82</b></p>  | <p><b>Case 85</b></p>  | <p><b>Case 86</b></p>   | <p><b>Case 87L</b></p> | <p><b>Case 87L</b></p> |
| <p><b>Case 90</b></p>  | <p><b>Case 108</b></p> | <p><b>Case 145A</b></p> | <p><b>Case 152</b></p> | <p><b>Case 152</b></p> |
| <p><b>Case 171</b></p> | <p><b>Case 173</b></p> | <p><b>Case 175</b></p>  | <p><b>Case 175</b></p> | <p><b>Case 175</b></p> |
| <p><b>Case 179</b></p> | <p><b>Case 194</b></p> | <p><b>Case 199</b></p>  | <p><b>Case 206</b></p> | <p><b>Case 206</b></p> |

# HEP Semiconductor Outline Dimensions

|                         |                        |   |                         |                         |
|-------------------------|------------------------|---|-------------------------|-------------------------|
| <p><b>Case 206A</b></p> | <p><b>Case 216</b></p> | <p><b>Case 234-02</b></p> <p>PIN 1 ANODE<br/>2 CATHODE<br/>Cathode indicated by larger lead</p>   | <p><b>Case 277</b></p>  | <p><b>Case 602A</b></p> |
| <p><b>Case 612</b></p>  | <p><b>Case 614</b></p> | <p><b>Case 626</b></p> <ol style="list-style-type: none"> <li>1. Measure to center line of leads when parallel</li> <li>2. Four insulating stand offs are provided</li> </ol> | <p><b>Case 643A</b></p> | <p><b>Case 644A</b></p> |
| <p><b>Case 647</b></p>  | <p><b>Case 648</b></p> | <p><b>Case 675</b></p>  | <p><b>Case 686</b></p>  |                         |

# SILICON TRANSISTORS

## LOW POWER

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Polarity | Collector-Base Voltage $BV_{CBO}$ | Collector-Emitter Voltage $BV_{CEO}$ | Emitter-Base Voltage $BV_{EBO}$ | Collector Current $I_C$ (mA dc) | Total Device Dissipation (mW) | Operating Junction Temp. ( $^\circ\text{C}$ max) | Typical Cut-Off Freq. $f_t$ (MHz) | Typical Current Gain $h_{FE} (\beta)$ | Typical Collector Cut-Off Current @ $V_{CB}$ $I_{CBO}$ | Case     |
|--------------|----------|-----------------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|--|-----------------------------------|---------------------------------------|--|----------|
| S0008        | NPN      | 40                                | 30                                   | 4.0                             | 20                              | 310                           | 135  | 440                               | 35 @ 4 mA                             | 50 nA, 10V   | TO-92(B) |
| S0009        | NPN      | 45                                | 45                                   | 4.0                             | 100                             | 500                           | 135  | 700                               | 75 @ 7 mA                             | 50 nA, 30V   | TO-92(B) |
| S0010        | NPN      | 30                                | 25                                   | 3.0                             | 20                              | 350                           | 150  | 800                               | 75 @ 4 mA                             | 100 nA, 30V  | TO-92(B) |
| S0011        | NPN      | 25                                | 15                                   | 4.0                             | 300                             | 400                           | 175  | 250                               | 85                                    | 100 nA, 20V  | TO-18    |
| S0012        | PNP      | 30                                | 25                                   | 4.0                             | 600                             | 600                           | 175  | 150                               | 80 @ 150 mA                           | 1 $\mu\text{A}$ , 20V                                  | TO-5(A)  |
| S0013        | PNP      | 30                                | 30                                   | 4.0                             | 200                             | 400                           | 175  | 200                               | 95                                    | 200 nA, 30V  | TO-18    |
| S0014        | NPN      | 35                                | 30                                   | 4.0                             | 600                             | 600                           | 175  | 200                               | 85                                    | 50 nA, 30V   | TO-5(A)  |
| S0015 ②      | NPN      | 60                                | 40                                   | 6.0                             | 600                             | 310                           | 135  | 300                               | 200 @ 150 mA                          |  | TO-92(A) |
| S0016        | NPN      | 35                                | 25                                   | 2.0                             | 100                             | 310                           | 135  | 850                               | 40 @ 4 mA                             | 100 nA, 25V  | TO-92(B) |
| S0017        | NPN      | 30                                | 15                                   | 3.0                             | 50                              | 300                           | 175  | 600                               | 50 @ 3 mA                             | 10 nA, 15V   | TO-72(C) |
| S0019 ②      | PNP      | 40                                | 40                                   | 5.0                             | 600                             | 310                           | 135  | 300                               | 200 @ 150 mA                          | 500 nA, 10V  | TO-92(A) |
| S0020        | NPN      | 30                                | 20                                   | 3.0                             | 100                             | 310                           | 135  | 800                               | 75 @ 2 mA                             | 50 nA, 15V   | TO-92(A) |
| S0024 ①      | NPN      | 50                                | 50                                   | 4.5                             | 50                              | 310                           | 135  | 80                                | 400 @ 100 $\mu\text{A}$               | 50 nA, 35V   | TO-92(A) |
| S0025        | NPN      | 60                                | 40                                   | 6.0                             | 600                             | 350                           | 150  | 300                               | 100 @ 150 mA                          |  | TO-92(A) |
| S0026        | PNP      | 80                                | 80                                   | 4.0                             | 500                             | 500                           | 135  | 175                               | 125 @ 100 mA                          | 100 nA, 80V  | TO-92(A) |
| S0030        | NPN      | 45                                | 45                                   | 4.0                             | 50                              | 310                           | 135  | 250                               | 250 @ 10 mA                           | 50 nA, 35V   | TO-92(A) |
| S0031 ①      | PNP      | 50                                | 50                                   | 3.0                             | 50                              | 310                           | 135  | 80                                | 400 @ 100 $\mu\text{A}$               | 50 nA, 35V   | TO-92(A) |
| S0032*       | PNP      | 40                                | 35                                   | 25                              | 150                             | 310                           | 135  | 4.0                               | 100 @ 12 mA                           | 100 nA, 10V  | TO-92(A) |
| S0033        | NPN      | 40 (CB)                           | 40                                   | 4.0                             | 25                              | 310                           | 135  | 400                               | 80 @ 4 mA                             | 50 nA, 20V   | TO-92(B) |

\*Silicon replacement for 2N404.

① ② These devices may be used as complementary pairs.

## RF POWER

|       |     |    |        |     |     |             |     |      |                |                       |       |
|-------|-----|----|--------|-----|-----|-------------|-----|------|----------------|-----------------------|-------|
| S3001 | NPN | 65 | 40     | 4.0 | 1 A | P out 5 W   | 175 | 150† | 10 min         | 1 mA, 65V             | TO-39 |
| S3004 | NPN | 60 | 30     | 3.0 | 500 | P out 3.5 W | 175 | 27†  | 10 min @ 400   | 1 nA, 30V             | TO-39 |
| S3005 | NPN | 36 | 30 CES | 4.0 | 1 A | P out 2 W   | 200 | 175† | 10 min         | 1 mA, 15V             | 145A  |
| S3006 | NPN | 36 | 30 CES | 4.0 | 3 A | P out 10 W  | 200 | 175† | 10 min         | 1 mA, 15V             | 145A  |
| S3007 | NPN | 36 | 30 CES | 4.0 | 5 A | P out 25 W  | 200 | 175† | 10 min         | 1 mA, 15V             | 145A  |
| S3008 | NPN | 55 | 30 CES | 4.0 | 400 | P out 1.5 W | 200 | 150† | 10 min         | 1 $\mu\text{A}$ , 25V | TO-39 |
| S3009 | NPN | 36 | 36 CES | 4.0 | 6 A | P out 40 W  | 200 | 175† | 5 min          | 2 mA, 15V             | 145A  |
| S3013 | NPN | 25 | 20     | 3.5 | 400 | P out 1 W   | 175 | 400† | 15 min @ 50 mA | 1 $\mu\text{A}$ , 25V | TO-39 |
| S3014 | PNP | 25 | 20     | 3.5 | 400 | P out 1 W   | 175 | 400† | 15 min @ 50 mA | 1 $\mu\text{A}$ , 25V | TO-39 |

†Frequency in MHz at which power output rating is listed.

## MEDIUM POWER

|         |     |    |    |     |       |      |     |         |              |                         |       |
|---------|-----|----|----|-----|-------|------|-----|---------|--------------|-------------------------|-------|
| S3002 ③ | NPN | 80 | 80 | 5.0 | 5 A   | 6 W  | 200 | 30      | 80           | 100 $\mu\text{A}$ , 80V | TO-39 |
| S3003 ③ | PNP | 80 | 80 | 5.0 | 5 A   | 6 W  | 200 | 30      | 80           | 100 $\mu\text{A}$ , 80V | TO-39 |
| S3010   | NPN | 70 | 60 | 5.0 | 4 A   | 10 W | 175 | 30      | 70           | 100 $\mu\text{A}$ , 70V | TO-39 |
| S3011   | NPN | 70 | 50 | 5.0 | 1 A   | 7 W  | 200 | 100 min | 100          | 200 nA, 35V             | TO-39 |
| S3012   | PNP | 70 | 50 | 5.0 | 1 A   | 7 W  | 200 | 100 min | 100          | 200 nA, 35V             | TO-39 |
| S3020   | NPN | 60 | 60 | 4.0 | 2 A   | 10 W | 150 | 150     | 100 @ .25 A  | 100 nA, 40V             | 52    |
| S3024 ④ | NPN | 50 | 40 | 5.0 | 2.0 A | 8 W  | 135 | 50 min  | 150 @ 100 mA | 100 nA, 40V             | 152   |
| S3028 ④ | PNP | 50 | 40 | 5.0 | 2.0 A | 8 W  |     | 50 min  | 150 @ 100 mA | 100 nA, 40V             | 152   |
| S5013 ① | PNP | 40 | 40 | 5.0 | 3 A   | 6 W  | 200 | 4.0     | 85 @ 150 mA  | 500 $\mu\text{A}$ , 40V | TO-5  |
| S5014 ① | NPN | 60 | 40 | 6.0 | 3 A   | 6 W  | 200 | 4.0     | 85 @ 150 mA  | 500 $\mu\text{A}$ , 40V | TO-5  |

① ② ③ ④ These devices may be used as complementary pairs.



**SILICON TRANSISTORS (Continued)****MEDIUM POWER**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Polarity | Collector-Base Voltage $BV_{CBO}$ | Collector-Emitter Voltage $BV_{CEO}$ | Emitter-Base Voltage $BV_{EBO}$ | Collector Current $I_C$ (mA dc) | Total Device Dissipation (mW) | Operating Junction Temp. ( $^\circ\text{C}$ max) | Typical Cut-Off Freq. $f_t$ (MHz) | Typical Current Gain $h_{FE} (\beta)$ | Typical Collector Cut-Off Current @ $V_{CB}$ $I_{CBO}$ | Case  |
|--------------|----------|-----------------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|--|-----------------------------------|---------------------------------------|--|-------|
| S5018 ②      | PNP      | 80                                | 80                                   | 5.0                             | 4 A                             | 25 W                          | 200  | 30 min                            | 50 @ .5 A                             | 100 $\mu\text{A}$ , 80V                                | TO-66 |
| S5019 ②      | NPN      | 80                                | 80                                   | 5.0                             | 4 A                             | 25 W                          | 200  | 30 min                            | 50 @ .5 A                             | 100 $\mu\text{A}$ , 80V                                | TO-66 |
| S5022        | PNP      | 60                                | 0                                    | 5.0                             | 600                             | 1.8 W                         | 175  | 275                               | 85                                    | 3 nA, 30V  | TO-18 |
| S5023        | PNP      | 95                                | 80                                   | 4.5                             | 100                             | 3 W                           | 200  | 200                               | 25                                    | 5 nA, 15V  | TO-5  |

① ② ③ ④ These devices may be used as complementary pairs.

**HIGH POWER**

|         |     |          |     |     |      |       |     |         |             |                                      |       |
|---------|-----|----------|-----|-----|------|-------|-----|---------|-------------|--------------------------------------|-------|
| S5000 ② | NPN | 80       | 80  | 5.0 | 4 A  | 40 W  | 150 | 2.0 min | 60 @ 1.5 A  | 100 $\mu\text{A}$ , 80V              | 77(A) |
| S5004 ③ | NPN | 100 (CB) | 80  | 5.0 | 8 A  | 90 W  | 150 | 2.0 min | 50 @ 4 A    | $I_{CEX}$ , 100 $\mu\text{A}$ , 100V | 90(C) |
| S5005 ③ | PNP | 100 (CB) | 80  | 5.0 | 8 A  | 90 W  | 150 | 2.0 min | 50 @ 4 A    | $I_{CEX}$ , 100 $\mu\text{A}$ , 90V  | 90(C) |
| S5006 ② | PNP | 80       | 80  | 5.0 | 4 A  | 40 W  | 150 | 2.0     | 60 @ 1.5 A  | 100 $\mu\text{A}$ , 80V              | 77(A) |
| S5012   | NPN |          | 125 | 4.0 | 2 A  | 40 W  | 175 | 20      | 60 @ 150 mA |                                      | TO-66 |
| S7000 ④ | NPN | 80       | 80  | 5.0 | 25 A | 200 W | 200 | 4.0 min | 40 @ 10 A   | 1 mA, 80V                            | TO-3  |
| S7001 ④ | PNP | 80       | 80  | 5.0 | 25 A | 200 W | 200 | 4.0 min | 40 @ 10 A   | 1 mA, 80V                            | TO-3  |
| S7002 ① | NPN | 60       | 60  | 5.0 | 10 A | 150 W | 200 | 6.0     | 60 @ 4 A    | 500 $\mu\text{A}$ , 60V              | TO-3  |
| S7003 ① | PNP | 60       | 60  | 5.0 | 10 A | 150 W | 200 | 6.0     | 60 @ 4 A    | 500 $\mu\text{A}$ , 60V              | TO-3  |
| S7004   | NPN | 100 (CB) | 60  | 7.0 | 15 A | 115 W | 200 | 1.0 min | 35 @ 4 A    |                                      | TO-3  |

① ② ③ ④ These devices may be used as complementary pairs.

**HIGH VOLTAGE**

|         |     |          |            |     |       |        |     |         |                |                          |          |
|---------|-----|----------|------------|-----|-------|--------|-----|---------|----------------|--------------------------|----------|
| S0005 ② | NPN | 180      | 160        | 6.0 | 600   | 310 mW | 135 | 200     | 160 @ 10 mA    | 50 nA, 120V              | TO-92(A) |
| S0027 ① | NPN | 300      | 300        | 6.0 | 500   | 625 mW | 150 | 50 min  | 40 min @ 10 mA | 100 nA, 200V             | TO-92(A) |
| S0028 ① | PNP | 300      | 300        | 5.0 | 500   | 625 mW | 150 | 50 min  | 40 min @ 10 mA | 250 nA, 200V             | TO-92(A) |
| S0029 ② | PNP | 160      | 150        | 5.0 | 600   | 310 mW | 135 | 250     | 120 @ 10 mA    | 50 nA, 120V              | TO-92(A) |
| S3019   | NPN | 180      | 180        | 5.0 | 1 A   | 8 W    | 175 | 100 min | 40 min @ 10 mA | 100 nA, 150V             | 152      |
| S3021   | NPN | 300      | 300        | 8.0 | 500   | 10 W   | 150 | 60 min  | 100 @ 10 mA    | 200 nA, 200V             | 152      |
| S3032   | PNP | 100 (CB) | 100        | 4.0 | 2 A   | 10 W   | 150 | 100     | 140 @ 50 mA    | 100 nA, 40V              | 152      |
| S3033   | NPN | 160      | 160        | 5.0 | 50    | 1 W    | 175 | 150     | 35             | 50 $\mu\text{A}$ , 160V  | TO-39    |
| S3034   | NPN | 210      | 210        | 5.0 | 50    | 1 W    | 175 | 150     | 35             | 50 $\mu\text{A}$ , 210V  | TO-39    |
| S3035   | NPN | 270      | 270        | 5.0 | 50    | 1 W    | 175 | 150     | 35             | 50 $\mu\text{A}$ , 270V  | TO-39    |
| S5011   | NPN | 300      | 300        | 6.0 | 500   | 10 W   | 150 | 10      | 115 @ 50 mA    | 100 $\mu\text{A}$ , 300V | TO-66    |
| S5015   | NPN | 300      | 300        | 3.0 | 500   | 20 W   | 150 | 15      | 80 @ 50 mA     | 100 $\mu\text{A}$ , 300V | 77(A)    |
| S5020   | NPN | 400 (CB) | 325        | 5.0 | 10 A  | 125 W  | 150 | 2.5 min | 40 @ 1 mA      |                          | TO-3     |
| S5021   | NPN |          | 700 (CES)  | 5.0 | 5 A   | 125 W  | 150 | 2.5     | 10 min @ 2.5 A | 250 nA, 400V             | TO-3     |
| S5024   | NPN | 350      | 325        | 6.0 | 100   | 4 W    | 175 | 10      | 25             | 1 $\mu\text{A}$ , 150V   | TO-39    |
| S5025   | NPN | 180      | 200        | 5.0 | 50    | 1 W    | 175 | 150     | 35             | 5 $\mu\text{A}$ , 100V   | TO-5     |
| S5026   | NPN | 100      | 100        | 5.0 | 200   | 1 W    | 175 | 150     | 35             | 1 $\mu\text{A}$ , 50V    | TO-5     |
| S7005   | NPN | 1400     | 1400 (CES) | 5.0 | 2.5 A | 10 W   | 115 | 7.5     | —              | $I_{CES}$ 1 mA, 1400V    | TO-3     |

① ② These devices may be used as complementary pairs.

# SILICON TRANSISTORS (Continued)

## DARLINGTON AMPLIFIERS

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Polarity | Collector-Base Voltage $BV_{CBO}$ | Collector-Emitter Voltage $BV_{CEO}$ | Emitter-Base Voltage $BV_{EBO}$ | Collector Current $I_C$ (mA dc) | Total Device Dissipation (mW) | Operating Junction Temp. ( $^\circ\text{C}$ max) | Typical Cut-Off Freq. $f_t$ (MHz) | Typical Current Gain $h_{FE} (\beta)$ | Typical Collector Cut-Off Current @ $V_{CB}$ $I_{CBO}$ | Case     |
|--------------|----------|-----------------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|--|-----------------------------------|---------------------------------------|--|----------|
| S9100 ①      | NPN      | 30                                | 30 (CES)                             | 10                              | 300                             | 500 mW                        | 135  | 200                               | 20K min @ 100 mA                      | 100 nA, 30V  | TO-92(A) |
| S9101 ②      | NPN      | 60                                | 60                                   | 5.0                             | 4 A                             | 40 W                          | 150  | 2.0                               | 750 min @ 1.5 A                       | 200 nA, 60V  | 77(A)    |
| S9102 ③      | NPN      | 60                                | 60                                   | 5.0                             | 5 A                             | 70 W                          | 150  | 2.0                               | 750 min @ 3 A                         | 200 nA, 60V  | 90(C)    |
| S9103 ⑥      | NPN      | 50                                | 40 (CES)                             | 12                              | 2 A                             | 10 W                          | 150  | 300                               | 15K min @ .5 A                        | 100 nA, 30V  | 152      |
| S9120 ①      | PNP      | 30                                | 30 (CES)                             | 8.0                             | 300                             | 500 mW                        | 135  | 175                               | 50K min @ 10 mA                       | 100 nA, 30V  | TO-92(A) |
| S9121 ②      | PNP      | 60                                | 60                                   | 5.0                             | 4 A                             | 40 W                          | 150  | 2.0                               | 750 min @ 1.5 A                       | 200 nA, 60V  | 77(A)    |
| S9122 ③      | PNP      | 60                                | 60                                   | 5.0                             | 5 A                             | 70 W                          | 150  | 2.0                               | 750 min @ 3 A                         | 200 nA, 60V  | 90(C)    |
| S9123 ⑥      | PNP      | 50                                | 40 (CES)                             | 10                              | 2 A                             | 10 W                          | 150  | 300                               | 15K min @ .5 A                        | 100 nA, 30V  | 152      |
| S9140 ④      | NPN      | 60                                | 60                                   | 5.0                             | 8 A                             | 100 W                         | 200  | 4.0                               | 1K min @ 4 A                          |  | TO-3     |
| S9141 ④      | PNP      | 60                                | 60                                   | 5.0                             | 8 A                             | 100 W                         | 200  | 4.0                               | 1K min @ 4 A                          |  | TO-3     |
| S9142 ⑤      | NPN      | 100                               | 100                                  | 5.0                             | 20 A                            | 160 W                         | 200  | 4.0                               | 1K min @ 10 A                         | $I_{CEO}$ 1 mA, 50V                                    | TO-3     |
| S9143 ⑤      | PNP      | 100                               | 100                                  | 5.0                             | 20 A                            | 160 W                         | 200  | 4.0                               | 1K min @ 10 A                         | $I_{CEO}$ 1 mA, 50V                                    | TO-3     |

① ② ③ ④ ⑤ ⑥ These devices may be used as complementary pairs.

# GERMANIUM TRANSISTORS

## LOW POWER

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Polarity | Collector-Base Voltage $BV_{CBO}$ | Collector-Emitter Voltage $BV_{CES}$ | Emitter-Base Voltage $BV_{EBO}$ | Collector Current $I_C$ (mA dc) | Total Device Dissipation (mW) | Junction Temp. $T_J$ ( $^\circ\text{C}$ max) | Typical Cut-Off Frequency $f_t$ | Typical Current Gain $h_{FE} (\beta)$ | Typical Collector Cut-Off Current @ $V_{CB}$ $I_{CBO}$ | Case     |
|--------------|----------|-----------------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|--|---------------------------------|---------------------------------------|--|----------|
| G0001        | PNP      | 30                                | 25                                   | 2.0                             | 100                             | 150                           | 100  | 200 MHz                         | 85 @ 10 mA                            | 5 $\mu\text{A}$ , 5V                                   | TO-5     |
| G0002        | PNP      | 25                                | 25                                   | 0.5                             | 100                             | 300                           | 100  | 750 MHz                         | 25 @ 10 mA                            | 5 $\mu\text{A}$ , 15V                                  | TO-5(A)* |
| G0003        | PNP      | 20                                | 20                                   | 0.5                             | 50                              | 100                           | 100  | 400 MHz                         | 30 @ 3 mA                             | 10 $\mu\text{A}$ , 10V                                 | TO-72(C) |
| G0005        | PNP      | 25                                | 25 (CER)                             | 25                              | 200                             | 200                           | 100  | 2 MHz                           | 60 @ 10 mA                            | 15 $\mu\text{A}$ , 25V                                 | TO-5(A)  |
| G0006        | PNP      | 25                                | 25 (CER)                             | 25                              | 200                             | 200                           | 100  | 2 MHz                           | 100 @ 10 mA                           | 15 $\mu\text{A}$ , 25V                                 | TO-5(A)  |
| G0007        | PNP      | 25                                | 25 (CER)                             | 25                              | 200                             | 200                           | 100  | 2 MHz                           | 200 @ 10 mA                           | 15 $\mu\text{A}$ , 25V                                 | TO-5(A)  |
| G0008        | PNP      | 35                                | 35                                   | 2.0                             | 100                             | 150                           | 100  | 400 MHz                         | 100 @ 3 mA                            | 500 nA, 10V  | TO-18*   |
| G0009        | PNP      | 25                                | 24                                   | 12                              | 350                             | 200                           | 85   | 25 MHz                          | 80 @ 12 mA                            | 5 $\mu\text{A}$ , 12V                                  | TO-18    |
| G0011        | NPN      | 25                                | 15                                   | 10                              | 300                             | 150                           | 85   | 150 MHz                         | 70                                    | 6 $\mu\text{A}$ , 25V                                  | TO-18    |

\*Collector connected to case

## MEDIUM POWER

|       |     |     |          |     |      |      |     |         |           |                         |          |
|-------|-----|-----|----------|-----|------|------|-----|---------|-----------|-------------------------|----------|
| G6000 | PNP | 30  | 30 (CER) | 10  | 3 A  | 90 W | 25  | 600 kHz | 40 @ 1 A  | 6 mA, 30V               | TO-3     |
| G6003 | PNP | 30  | 30 (CER) | 10  | 5 A  | 90 W | 25  | 600 kHz | 60 @ 1 A  | 3 mA, 30V               | TO-3     |
| G6005 | PNP | 70  | 70       | 10  | 7 A  | 90 W | 25  | 600 kHz | 60 @ 3 A  | 80 $\mu\text{A}$ , 2V   | TO-3     |
| G6011 | PNP | 60  | 30 (CEO) | 20  | 3 A  | 20 W | 25  | 200 kHz | 40 @ 1A   | 200 $\mu\text{A}$ , 30V | TO-5(A)* |
| G6012 | PNP | 100 | 30 (CEO) | 20  | 3 A  | 20 W | 25  | 200 kHz | 40 @ 1 A  | 200 $\mu\text{A}$ , 50V | TO-5(A)* |
| G6013 | PNP | 60  | 35 (CEO) | 20  | 15 A | 85 W | 110 | 600 kHz | 100 @ 3 A | 1 mA, 35V               | TO-3     |
| G6014 | PNP | 80  | 50 (CEO) | 2.0 | 20 A | 85 W | 110 | 1 MHz   | 60 @ 5 A  | 10 mA, 80V              | TO-3     |
| G6015 | PNP | 80  | 80 (CEO) | 5.0 | 10 A | 85 W | 110 | 700 kHz | 40 @ 3A   | 20 mA, 80V              | TO-3     |
| G6016 | PNP | 30  | 25 (CEO) | 20  | 7 A  | 57 W | 110 | 350 kHz | 90        | 1 mA, 25V               | TO-66    |
| G6018 | PNP | 100 | 75       | 50  | 10 A | 90 W | 100 | 5 kHz   | 40 @ 10 A | 20 mA, 90V              | TO-3     |

\*Collector connected to case

## GERMANIUM TRANSISTORS (Continued)

## HIGH POWER

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Polarity | Collector-Base Voltage $V_{CB0}$ | Collector-Emitter Voltage $V_{CES}$ | Emitter-Base Voltage $V_{EBO}$ | Collector Current $I_C$ (mA dc) | Total Device Dissipation | Operating Case Temperature $T_C$ ( $^\circ\text{C}$ max) | Typical Cut-Off Frequency $f_t$ | Typical Current Gain $h_{FE} (\beta)$ | Typical Collector Cut-Off Current @ $V_{CB}$ $I_{CBO}$ | Case  |
|--------------|----------|----------------------------------|-------------------------------------|--------------------------------|---------------------------------|--------------------------|--|---------------------------------|---------------------------------------|--|-------|
| G6001        | PNP      | 90                               | 80                                  | 1.5                            | 25 A                            | 85 W                     | 25   | 850 kHz                         | 70                                    | 200 $\mu\text{A}$ , 2.0V                               | TO-3  |
| G6002        | PNP      | 45                               | 45                                  | 25                             | 60 A                            | 170 W                    | 25   | 2 kHz                           | 100                                   | 4 mA, 45V  | TO-36 |
| G6004        | PNP      | 30                               | 30 (CER)                            | 10                             | 15 A                            | 170 W                    | 25   | 500 kHz                         | 40 @ 5 A                              | 6 mA, 30V  | TO-36 |
| G6006        | PNP      | 65                               | 65                                  | 60                             | 15 A                            | 170 W                    | 25   | 500 kHz                         | 55 @ 5 A                              | 20 mA, 65V   | TO-36 |
| G6010        | PNP      | 75                               | 75                                  | 40                             | 30 A                            | 170 W                    | 25   | 270 kHz                         | 50 @ 15A                              | 900 $\mu\text{A}$ , 75V                                | TO-36 |

## HIGH VOLTAGE

|       |     |     |          |     |      |       |    |         |          |                         |       |
|-------|-----|-----|----------|-----|------|-------|----|---------|----------|-------------------------|-------|
| G6007 | PNP | 200 | 200      | 0.5 | 5 A  | 56 W  | 25 | 1.0 MHz | 60 @ 2 A | 400 $\mu\text{A}$ , 10V | TO-3  |
| G6008 | PNP | 320 | 320      | 2.0 | 10 A | 56 W  | 25 | 1.5 MHz | 60 @ 2 A | 400 $\mu\text{A}$ , 10V | TO-3  |
| G6009 | PNP | 80  | 80 (CEO) | 2.0 | 25 A | 106 W | 25 | 430 kHz | 50 @ 3 A | 200 $\mu\text{A}$ , 2V  | TO-41 |
| G6017 | PNP | 160 | 160      | 5.0 | 10 A | 85 W  | 25 | 50 kHz  | 40       | 3 mA, 160V              | TO-3  |

## SILICON UNIUNCTION TRANSISTOR

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | RMS Emitter Current $I_e$ (mA) | Intrinsic Standoff Ratio $\eta$ @ $V_{B2B1} = 10\text{ V}$ |      | Interbase Resistance $R_{BBO}$<br>$V_{B2B1} = 3\text{ V}$<br>$I_E = 0$<br>(k $\Omega$ ) |     | Interbase Voltage (Volts) | RMS Power Dissipation $P_D$ (mW) | Operating Junction Temperature $T_J$ ( $^\circ\text{C}$ ) | Emitter Reverse Current $I_{EB20}$ @ $V_{B2E} = 30\text{ V}$<br>$I_{B1} = 0\text{ V}$<br>( $\mu\text{A}$ ) | Minimum Valley Current $I_v$ @ $V_{B2B1} = 20\text{ V}$<br>$R_{B2} = 100\Omega$<br>(mA) | Case     |
|--------------|--------------------------------|--|------|---|-----|---------------------------|----------------------------------|---|--|---|----------|
|              |                                | Min  | Max  | Min   | Max |                           |                                  |   |  |   |          |
| S9002        | 50                             | 0.70   | 0.85 | 4.0   | 9.1 | 35                        | 300                              | -65 to +125   | 1.0 max  | 2.0 min   | TO-92(A) |

## PROGRAMMABLE UNIUNCTION TRANSISTOR\*

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Forward Anode Current $I_T$ (mA) | Gate Current $I_G$ (mA) | Gate-Cathode Forward Voltage $V_{GKF}$ (Volts) | Gate-Cathode Reverse Voltage $V_{GKB}$ (Volts) | Voltage $V_{AK}$ (Volts) | Power Dissipation $P_D$ (mW) | Case     |
|--------------|----------------------------------|-------------------------|--|--|--------------------------|------------------------------|----------|
| S9001        | 200                              | $\pm 20$                | 40   | 5.0  | $\pm 40$                 | 375                          | TO-92(G) |

\*Unijunction characteristics such as  $R_{BB}$ ,  $\eta$ ,  $I_v$ , and  $I_p$  can be altered (programmed) by merely changing the gate bias and supply resistors.

## SILICON FIELD EFFECT TRANSISTORS

## N-CHANNEL J FET

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. Case | Trans-Conductance ( $\mu\text{mhos}$ ) | Drain-Source Voltage $V_{DS}$ (Volts) | Current (mA dc) | Gate-Source Breakdown Voltage $V_{(BR)GSS}$ (Volts) | Gate Reverse Current $I_{GSS}$ (nA dc) | Zero-Gate Voltage Drain Current $I_{DSS}$ (mA dc) | Total Device Dissipation $P_D$ (mW) | Operating Junction Temperature $T_J$ | ( $^\circ\text{C}$ ) |
|-------------------|--|---------------------------------------|-----------------|---|--|---|-------------------------------------|--------------------------------------|----------------------|
| F0010             | 3000 min                               | 20                                    | 15 $I_D$        | 20  | 1.0                                    | 1.0 to 9.0 <sup>(1)</sup>                         | 200                                 | 125                                  | TO-72(A)             |
| F0015             | 2000 min                               | 25                                    | 10 $I_G$        | 25  | 1.0                                    | 2.0 to 20 <sup>(1)</sup>                          | 200                                 | 125                                  | TO-92(E)             |
| F0021             | 3500 min                               | 25                                    | 30 $I_D$        | 25  | 1.0                                    | 8.0 to 20 <sup>(1)</sup>                          | 310                                 | 150                                  | TO-92(E)             |



## SILICON FIELD EFFECT TRANSISTORS (Continued)

### P-CHANNEL J FET

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Trans-Conductance ( $\mu\text{mhos}$ ) | Drain-Source Voltage $V_{DS}$ (Volts) | Current (mAdc) | Gate-Source Breakdown Voltage $V_{(BR)GSS}$ (Volts) | Gate Reverse Current $I_{GSS}$ (nAdc) | Zero-Gate Voltage Drain Current $I_{DSS}$ (mAdc) | Total Device Dissipation $P_D$ (mW) | Operating Junction Temperature $T_J$ (C) | Case     |
|--------------|--|---------------------------------------|----------------|---|---------------------------------------|--|-------------------------------------|--|----------|
| F1035        | 1000 min                               | 40                                    | 20 $I_D$       | 40  | 10                                    | 0.5 to 14 ①                                      | 310                                 | 135                                      | TO-92(F) |
| F1036        | 1000 min                               | 40                                    | 20 $I_D$       | 40  | 2.0                                   | 1.0 to 7.0 ①                                     | 200                                 | 175                                      | TO-72(D) |

### N-CHANNEL MOS FET

|       |          |    |          |          |       |           |     |     |          |
|-------|----------|----|----------|----------|-------|-----------|-----|-----|----------|
| F2005 | 2000 min | 20 | 10 $I_D$ | $\pm 30$ | 50 pA | 2.0 to 10 | 300 | 175 | TO-72(A) |
|-------|----------|----|----------|----------|-------|-----------|-----|-----|----------|

### N-CHANNEL DUAL GATE MOS FET

|       |            |    |          |     |     |           |     |     |          |
|-------|------------|----|----------|-----|-----|-----------|-----|-----|----------|
| F2004 | 6000 min   | 20 | 50 $I_D$ | 1.0 | 1.0 | 5.0 to 30 | 400 | 174 | TO-72(B) |
| F2007 | 10,000 min | 25 | 30 $I_D$ | 20  | 20  | 5.0 to 30 | 500 | 175 | 206      |

① Pulse Test: Pulse width  $\leq 630$  ms; duty cycle  $\leq 10\%$

## SILICON CONTROLLED RECTIFIERS

### THYRISTORS

RATINGS AND CHARACTERISTICS ( $T_J = 100^\circ\text{C}$ )

| HEP Type No. | Peak Reverse Voltage $V_{RRM}$ (Volts) | Max Gate Trigger Current $I_{GT}$ (mA) | Peak Gate Voltage $V_{RGM}$ Volts | Forward Current RMS (all conduction angles) $I_{T(RMS)}$ (Amp) | Forward "ON" Voltage (Max) $V_{TM}$ (Volts) | Operating Temperature $T_J$ ( $^\circ\text{C}$ ) | Surge Current (1/2 cycle 60 Hz) $I_{TSM}$ (Amp) | Holding Current (Typ) $I_H$ (mA) | Hex Stud Size (Inches) | Case     |
|--------------|--|--|-----------------------------------|--|---|--|---|----------------------------------|------------------------|----------|
| R1001        | 30                                     | 200 $\mu\text{A}$                      | 4.0                               | 0.8  | 1.7   | -65 to +85                                       | 6.0   | 5.0                              |                        | TO-92(G) |
| R1002        | 60                                     | 200 $\mu\text{A}$                      | 4.0                               | 0.8  | 1.7   | -65 to +85                                       | 6.0   | 5.0                              |                        | TO-92(G) |
| R1003        | 100                                    | 200 $\mu\text{A}$                      | 4.0                               | 0.8  | 1.7   | -65 to +85                                       | 6.0   | 5.0                              |                        | TO-92(G) |
| R1004        | 150                                    | 200 $\mu\text{A}$                      | 4.0                               | 0.8  | 1.7   | -65 to +85                                       | 6.0   | 5.0                              |                        | TO-92(G) |
| R1005        | 200                                    | 200 $\mu\text{A}$                      | 4.0                               | 0.8  | 1.7   | -65 to +85                                       | 6.0   | 5.0                              |                        | TO-92(G) |
| R1202        | 50                                     | 9                                      | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               |                        | 87L      |
| R1205        | 400                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               |                        | 87L      |
| R1215        | 30                                     | 200 $\mu\text{A}$                      | 6.0                               | 4.0  | 2.0   | -40 to +110                                      | 25  | 5.0                              |                        | 77(B)    |
| R1216        | 60                                     | 200 $\mu\text{A}$                      | 6.0                               | 4.0  | 2.0   | -40 to +110                                      | 25  | 5.0                              |                        | 77(B)    |
| R1217        | 100                                    | 200 $\mu\text{A}$                      | 6.0                               | 4.0  | 2.0   | -40 to +110                                      | 25  | 5.0                              |                        | 77(B)    |
| R1218        | 200                                    | 200 $\mu\text{A}$                      | 6.0                               | 4.0  | 2.0   | -40 to +110                                      | 25  | 5.0                              |                        | 77(B)    |
| R1220        | 50                                     | 30                                     | 10                                | 8.0  | 1.5   | -40 to +100                                      | 80  | 40                               |                        | 90(A)    |
| R1221        | 200                                    | 30                                     | 10                                | 8.0  | 1.5   | -40 to +100                                      | 80  | 40                               |                        | 90(A)    |
| R1222        | 400                                    | 30                                     | 10                                | 8.0  | 1.5   | -40 to +100                                      | 80  | 40                               |                        | 90(A)    |
| R1223        | 600                                    | 30                                     | 10                                | 8.0  | 1.5   | -40 to +100                                      | 80  | 40                               |                        | 90(A)    |
| R1241        | 50                                     | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1242        | 100                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1243        | 200                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1244        | 300                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1245        | 400                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1246        | 500                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1247        | 600                                    | 30                                     | 10                                | 8.0  | 2.0   | -40 to +100                                      | 100   | 30                               | 7/16                   | 86(A)    |
| R1300        | 25                                     | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A)   |

**SILICON CONTROLLED RECTIFIERS (Continued)****THYRISTORS**RATINGS AND CHARACTERISTICS ( $T_J = 100^\circ\text{C}$ )

| HEP Type No. | Peak Reverse Voltage $V_{RRM}$ (Volts) | Max Gate Trigger Current $I_{GT}$ (mA) | Peak Gate Voltage $V_{RGM}$ Volts | Forward Current RMS (all conduction angles) $I_{T(RMS)}$ (Amp) | Forward "ON" Voltage (Max) $V_{TM}$ (Volts) | Operating Temperature $T_J$ ( $^\circ\text{C}$ ) | Surge Current (1/2 cycle 60 Hz) $I_{TSM}$ (Amp) | Holding Current (Typ) $I_H$ (mA) | Hex Stud Size (Inches) | Case   |
|--------------|--|--|-----------------------------------|--|---|--|---|----------------------------------|------------------------|--------|
| R1301        | 50                                     | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A) |
| R1302        | 100                                    | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A) |
| R1304        | 200                                    | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A) |
| R1306        | 300                                    | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A) |
| R1307        | 400                                    | 40                                     | 10                                | 20   | 1.5   | -40 to +100                                      | 240   | 50                               | 9/16                   | 175(A) |
| R1471        | 50                                     | 40                                     | 10                                | 35   | 1.5   | -40 to +100                                      | 325   | 50                               | 9/16                   | 175(A) |
| R1472        | 100                                    | 40                                     | 10                                | 35   | 1.5   | -40 to +100                                      | 325   | 50                               | 9/16                   | 175(A) |
| R1473        | 200                                    | 40                                     | 10                                | 35   | 1.5   | -40 to +100                                      | 325   | 50                               | 9/16                   | 175(A) |
| R1475        | 400                                    | 40                                     | 10                                | 35   | 1.5   | -40 to +100                                      | 325   | 50                               | 9/16                   | 175(A) |

**TRIACS**

|       | Peak Blocking Voltage $V_{DRM}$ (Volts) |     |  |    |     |             | One Cycle at 60 Hz |    |      |        |
|-------|---|-----|--|----|-----|-------------|--------------------|----|------|--------|
| R1721 | 50                                      | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 |      | 90(B)  |
| R1722 | 100                                     | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 |      | 90(B)  |
| R1723 | 200                                     | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 |      | 90(B)  |
| R1725 | 400                                     | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 |      | 90(B)  |
| R1750 | 50                                      | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 | 7/16 | 86(B)  |
| R1751 | 200                                     | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 | 7/16 | 86(B)  |
| R1752 | 400                                     | 50  |  | 10 | 1.8 | -40 to +100 | 100                | 50 | 7/16 | 86(B)  |
| R1781 | 50                                      | 100 |  | 25 | 1.5 | -40 to +110 | 225                | 75 | 9/16 | 175(B) |
| R1782 | 100                                     | 100 |  | 25 | 1.5 | -40 to +110 | 225                | 75 | 9/16 | 175(B) |
| R1783 | 200                                     | 100 |  | 25 | 1.5 | -40 to +110 | 225                | 75 | 9/16 | 175(B) |
| R1785 | 400                                     | 100 |  | 25 | 1.5 | -40 to +110 | 225                | 75 | 9/16 | 175(B) |

**SILICON ZENER DIODES**PLASTIC ELEMENTS (500 mW) ( $\pm 10\%$  tolerance)RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Nominal Zener Voltage $V_Z @ I_{ZT}$ (Volts) | Test Current $I_{ZT}$ (mA) | Zener Impedance $Z_{ZT} @ I_{ZT}$ (Ohms) | Max DC Zener Current $I_{ZM}$ (mA) | Power Dissipation $P_D$ | Case      |
|--------------|--|----------------------------|--|------------------------------------|-------------------------|-----------|
| Z0206        | 3.3  | 20                         | 50                                       | 152                                | 500 mW                  | TO-92A(A) |
| Z0208        | 3.9  | 20                         | 40                                       | 128                                | 500 mW                  | TO-92A(A) |
| Z0210        | 4.7  | 20                         | 19                                       | 106                                | 500 mW                  | TO-92A(A) |
| Z0211        | 5.1  | 20                         | 17                                       | 98                                 | 500 mW                  | TO-92A(A) |
| Z0212        | 5.6  | 20                         | 15                                       | 89                                 | 500 mW                  | TO-92A(A) |
| Z0214        | 6.2  | 20                         | 14                                       | 80                                 | 500 mW                  | TO-92A(A) |
| Z0215        | 6.8  | 20                         | 17                                       | 74                                 | 500 mW                  | TO-92A(A) |
| Z0216        | 7.5  | 20                         | 23                                       | 67                                 | 500 mW                  | TO-92A(A) |

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**SILICON ZENER DIODES**

PLASTIC ELEMENTS (500 mW) ( $\pm 10\%$  tolerance)

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Nominal Zener Voltage $V_Z @ I_{ZT}$ (Volts) | Test Current $I_{ZT}$ (mA) | Zener Impedance $Z_{ZT} @ I_{ZT}$ (Ohms) | Max DC Zener Current $I_{ZM}$ (mA) | Power Dissipation $P_D$ | Case      |
|--------------|--|----------------------------|--|------------------------------------|-------------------------|-----------|
| Z0217        | 8.2  | 20                         | 34                                       | 61                                 | 500 mW                  | TO-92A(A) |
| Z0219        | 9.1  | 20                         | 50                                       | 55                                 | 500 mW                  | TO-92A(A) |
| Z0220        | 10   | 20                         | 62                                       | 50                                 | 500 mW                  | TO-92A(A) |
| Z0222        | 12   | 20                         | 70                                       | 41                                 | 500 mW                  | TO-92A(A) |
| Z0225        | 15   | 8.5                        | 34                                       | 33                                 | 500 mW                  | TO-92A(A) |
| Z0228        | 18   | 7.0                        | 48                                       | 28                                 | 500 mW                  | TO-92A(A) |
| Z0230        | 20   | 6.2                        | 57                                       | 25                                 | 500 mW                  | TO-92A(A) |
| Z0231        | 22   | 5.6                        | 68                                       | 22.6                               | 500 mW                  | TO-92A(A) |
| Z0234        | 27   | 4.6                        | 98                                       | 18.5                               | 500 mW                  | TO-92A(A) |
| Z0254        | 130  | 0.95                       | 1600                                     | 3.8                                | 500 mW                  | TO-92A(A) |
| Z0255        | 140  | 0.90                       | 1800                                     | 3.5                                | 500 mW                  | TO-92A(A) |

**1-WATT SURMETIC\* ELEMENTS ( $\pm 10\%$ )**

|       |     |      |     |     |     |       |
|-------|-----|------|-----|-----|-----|-------|
| Z0401 | 3.3 | 76   | 10  | 276 | 1 W | DO-41 |
| Z0402 | 3.6 | 69   | 10  | 252 | 1 W | DO-41 |
| Z0403 | 3.9 | 64   | 9.0 | 233 | 1 W | DO-41 |
| Z0405 | 4.7 | 53   | 8.0 | 193 | 1 W | DO-41 |
| Z0406 | 5.1 | 49   | 7.0 | 178 | 1 W | DO-41 |
| Z0407 | 5.6 | 45   | 5.0 | 162 | 1 W | DO-41 |
| Z0408 | 6.2 | 41   | 2.0 | 146 | 1 W | DO-41 |
| Z0409 | 6.8 | 37   | 3.5 | 133 | 1 W | DO-41 |
| Z0410 | 7.5 | 34   | 4.0 | 121 | 1 W | DO-41 |
| Z0411 | 8.2 | 31   | 4.5 | 110 | 1 W | DO-41 |
| Z0412 | 9.1 | 28   | 5.0 | 100 | 1 W | DO-41 |
| Z0413 | 10  | 25   | 7.0 | 91  | 1 W | DO-41 |
| Z0414 | 11  | 23   | 8.0 | 83  | 1 W | DO-41 |
| Z0415 | 12  | 21   | 9.0 | 76  | 1 W | DO-41 |
| Z0416 | 13  | 19   | 10  | 69  | 1 W | DO-41 |
| Z0417 | 14  | 18   | 12  | 65  | 1 W | DO-41 |
| Z0418 | 15  | 17   | 14  | 61  | 1 W | DO-41 |
| Z0419 | 16  | 15.5 | 16  | 57  | 1 W | DO-41 |
| Z0420 | 18  | 14   | 20  | 50  | 1 W | DO-41 |
| Z0421 | 20  | 12.5 | 22  | 45  | 1 W | DO-41 |
| Z0422 | 22  | 11.5 | 23  | 41  | 1 W | DO-41 |
| Z0423 | 24  | 10.5 | 25  | 38  | 1 W | DO-41 |
| Z0424 | 27  | 9.5  | 35  | 34  | 1 W | DO-41 |
| Z0425 | 28  | 9.5  | 35  | 32  | 1 W | DO-41 |
| Z0426 | 33  | 7.5  | 45  | 27  | 1 W | DO-41 |
| Z0427 | 36  | 7.0  | 50  | 25  | 1 W | DO-41 |
| Z0428 | 39  | 6.5  | 60  | 23  | 1 W | DO-41 |
| Z0430 | 47  | 5.5  | 80  | 19  | 1 W | DO-41 |
| Z0432 | 56  | 4.5  | 110 | 16  | 1 W | DO-41 |
| Z0433 | 62  | 4.0  | 125 | 14  | 1 W | DO-41 |
| Z0436 | 82  | 3.0  | 200 | 11  | 1 W | DO-41 |
| Z0438 | 100 | 2.5  | 350 | 9.0 | 1 W | DO-41 |

\*"Surmetic" is a Motorola trademarked term denoting all devices using special technique to achieve high reliability and greater power handling capability.

**SILICON ZENER DIODES****1-WATT SURMETIC\* ELEMENTS ( $\pm 10\%$ )**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Nominal Zener Voltage<br>$V_Z @ I_{ZT}$<br>(Volts) | Test Current<br>$I_{ZT}$<br>(mA) | Zener Impedance<br>$Z_{ZT} @ I_{ZT}$<br>(Ohms) | Max DC Zener Current<br>$I_{ZM}$<br>(mA) | Power Dissipation<br>$P_D$ | Case  |
|--------------|--|----------------------------------|--|--|----------------------------|-------|
| Z0439        | 110  | 2.3                              | 450  | 8.2                                      | 1 W                        | DO-41 |
| Z0440        | 120  | 2.0                              | 550  | 7.5                                      | 1 W                        | DO-41 |
| Z0442        | 150  | 1.7                              | 1000   | 6.0                                      | 1 W                        | DO-41 |
| Z0444        | 180  | 1.4                              | 1200   | 5.0                                      | 1 W                        | DO-41 |
| Z0445        | 200  | 1.2                              | 1500   | 4.5                                      | 1 W                        | DO-41 |

**5-WATT AXIAL LEAD ELEMENTS ( $\pm 10\%$ )**

|       |     |     |     |      |     |    |
|-------|-----|-----|-----|------|-----|----|
| Z2500 | 3.3 | 380 | 3.0 | 1440 | 5 W | 17 |
| Z2502 | 3.9 | 320 | 2.0 | 1220 | 5 W | 17 |
| Z2504 | 4.7 | 260 | 2.0 | 1010 | 5 W | 17 |
| Z2506 | 5.6 | 220 | 1.0 | 865  | 5 W | 17 |
| Z2508 | 6.2 | 200 | 1.0 | 765  | 5 W | 17 |
| Z2510 | 7.5 | 175 | 1.5 | 630  | 5 W | 17 |
| Z2513 | 9.1 | 150 | 2.0 | 520  | 5 W | 17 |
| Z2514 | 10  | 125 | 2.0 | 475  | 5 W | 17 |
| Z2516 | 12  | 100 | 2.5 | 395  | 5 W | 17 |
| Z2519 | 15  | 75  | 2.5 | 315  | 5 W | 17 |
| Z2522 | 18  | 65  | 2.5 | 264  | 5 W | 17 |
| Z2525 | 22  | 50  | 3.5 | 216  | 5 W | 17 |
| Z2526 | 24  | 50  | 3.5 | 198  | 5 W | 17 |
| Z2526 | 24  | 50  | 3.5 | 198  | 5 W | 17 |
| Z2528 | 27  | 50  | 5.0 | 176  | 5 W | 17 |
| Z2530 | 30  | 40  | 8.0 | 158  | 5 W | 17 |
| Z2531 | 33  | 40  | 10  | 144  | 5 W | 17 |
| Z2537 | 56  | 20  | 35  | 86   | 5 W | 17 |
| Z2542 | 82  | 15  | 65  | 58   | 5 W | 17 |
| Z2545 | 100 | 12  | 90  | 47.5 | 5 W | 17 |
| Z2547 | 120 | 10  | 170 | 39.5 | 5 W | 17 |
| Z2548 | 130 | 10  | 190 | 36.6 | 5 W | 17 |
| Z2551 | 160 | 8.0 | 350 | 29.4 | 5 W | 17 |

**10-WATT STUD-MOUNT ELEMENTS ( $\pm 10\%$ )**

|       |     |     |     |      |      |         |
|-------|-----|-----|-----|------|------|---------|
| Z3500 | 3.9 | 640 | 2.0 | 2380 | 10 W | DO-4(A) |
| Z3502 | 4.7 | 530 | 1.2 | 1940 | 10 W | DO-4(A) |
| Z3504 | 5.6 | 445 | 1.0 | 1620 | 10 W | DO-4(A) |
| Z3505 | 6.2 | 405 | 1.1 | 1460 | 10 W | DO-4(A) |
| Z3507 | 7.5 | 335 | 1.3 | 1210 | 10 W | DO-4(A) |
| Z3511 | 9.1 | 275 | 2.0 | 960  | 10 W | DO-4(B) |
| Z3512 | 10  | 250 | 3.0 | 860  | 10 W | DO-4(B) |
| Z3514 | 12  | 210 | 3.0 | 720  | 10 W | DO-4(B) |
| Z3516 | 15  | 170 | 3.0 | 560  | 10 W | DO-4(B) |
| Z3518 | 18  | 140 | 4.0 | 460  | 10 W | DO-4(B) |
| Z3520 | 22  | 115 | 5.0 | 380  | 10 W | DO-4(B) |
| Z3522 | 27  | 95  | 7.0 | 300  | 10 W | DO-4(B) |
| Z3524 | 33  | 75  | 9.0 | 260  | 10 W | DO-4(B) |
| Z3530 | 56  | 45  | 16  | 150  | 10 W | DO-4(B) |
| Z3534 | 82  | 30  | 25  | 100  | 10 W | DO-4(B) |
| Z3536 | 100 | 25  | 40  | 80   | 10 W | DO-4(B) |



**OPTO DEVICES**

**PHOTO TRANSISTORS**

| HEP Type No. | Collector-Emitter Voltage $BV_{CEO}$ | Emitter-Collector Voltage $BV_{ECO}$ | Power Dissipation $P_D$ (mW) | Collector Dark Current $I_{CEO}$ ( $\mu A$ ) | Collector-Emitter Radiation Sensitivity $S_{RCEO}$ (mA/mW/cm <sup>2</sup> ) (minimum) | Angular Alignment For Max Sensitivity $\theta$ (degrees) | Case   |
|--------------|--------------------------------------|--------------------------------------|------------------------------|--|---|--|--------|
| P0001        | 30                                   | 5.0                                  | 400                          | 5.0  | 0.4   | 10   | 82     |
| P0002        | 40                                   | 6.0                                  | 50                           | 5.0  | 0.09  | —  | 173    |
| P0003        | 30                                   | 5.0                                  | 100                          | 1.0  | 0.1   | 10   | 171(A) |

**LIGHT-EMITTING DIODE (LED) — VISIBLE RED**

| HEP Type No. | Reverse Voltage $V_R$ (Volts) | Forward Current $I_F$ (mA) | Power Dissipation $P_D$ (mW) | Brightness $f_L$ (typical) | Case   |
|--------------|-------------------------------|----------------------------|------------------------------|----------------------------|--------|
| P2000        | 4.0                           | 50                         | 100                          | 450                        | 171(B) |
| P2001        | 3.0                           | 40                         | 120                          | 750                        | 234-02 |
| P2003        | 4.0                           | 50                         | 100                          | 50                         | 171(B) |
| P2004        | 4.0                           | 20                         | 120                          | 750                        | 234-02 |
| P2005        | 4.0                           | 60                         | 100                          | 750                        | 279    |

**LIGHT-EMITTING DIODE (LED) — INFRARED**

|       |     |    |     |   |        |
|-------|-----|----|-----|---|--------|
| P2002 | 3.0 | 80 | 120 | — | 171(B) |
|-------|-----|----|-----|---|--------|

**DARLINGTON AMPLIFIER PHOTO TRANSISTOR — NPN**

| HEP Type No. | Collector-Base Voltage $V_{CBO}$ | Collector-Emitter Voltage $V_{CEO}$ | Emitter-Base Voltage $V_{EBO}$ | Collector Light Current $I_L$ (mA) | Power Dissipation $P_D$ (mW) | Case      |
|--------------|----------------------------------|-------------------------------------|--------------------------------|------------------------------------|------------------------------|-----------|
| P1001        | 18                               | 12                                  | 8.0                            | 250                                | 200                          | TO-92(L)* |

\*Clear plastic

**RECTIFIERS AND DIODES**

**GERMANIUM GENERAL PURPOSE DIODES**

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ C$ )

| HEP Type No. | Peak Inverse Voltage PIV (Volts) | Reverse Current $I_R$ ( $\mu A$ ) | Forward Current $I_F$ (mA) | Forward Voltage Drop $V_F$ | Case  |
|--------------|----------------------------------|-----------------------------------|----------------------------|----------------------------|-------|
| R9134        | 50                               | 30 $\mu A$ @ 20V                  | 50                         | 1V @ 5 mA                  | TO-18 |
| R9135        | 30                               | 40 $\mu A$ @ 20V                  | 30                         | 1V @ 5 mA                  | TO-18 |

**SILICON UHF (HOT-CARRIER) DIODE**

RATINGS AND CHARACTERISTICS ( $T_J = +125^\circ C$ )

| HEP Type No. | Reverse Voltage $V_R$ | Power Dissipation $P_D$ (mW) | Diode Capacitance $C_T$ (pF) | Noise Figure $N_F$ (dB) | Reverse Leakage $I_R$ (nA) | Case      |
|--------------|-----------------------|------------------------------|------------------------------|-------------------------|----------------------------|-----------|
| R0700        | 4.0                   | 280                          | 0.88                         | 6.0                     | 20                         | TO-92A(A) |

**RECTIFIERS AND DIODES (Continued)****VOLTAGE-VARIABLE CAPACITANCE DIODES**CHARACTERISTICS @  $T_A = 25^\circ\text{C}$ 

| HEP Type No. | Reverse Voltage $V_V$ (Volts) | Forward Current $I_F$ (mA) | Diode Capacitance (nominal) @ $V_R = 4.0\text{ Vdc}$ $f = 1.0\text{ MHz}$ $P_f$ | Tuning Ratio (typical) $V_R = 2-30\text{ Vdc}$ $f = 1.0\text{ MHz}$ $T_R$ | Power Dissipation $P_D$ (mW) | Case      |
|--------------|-------------------------------|----------------------------|---|---|------------------------------|-----------|
| R2500        | 30                            | 200                        | 6.8   | 2.7   | 280                          | TO-92A(A) |
| R2501        | 30                            | 200                        | 10.0  | 2.9   | 280                          | TO-92A(A) |
| R2502        | 30                            | 200                        | 15.0  | 2.9   | 280                          | TO-92A(A) |
| R2503        | 30                            | 200                        | 33.0  | 3.0   | 280                          | TO-92A(A) |
| R2504        | 30                            | 200                        | 56.0  | 3.0   | 280                          | TO-92A(A) |
| R2505        | 30                            | 200                        | 100.0   | 3.0   | 280                          | TO-92A(A) |

**SILICON GENERAL PURPOSE RECTIFIERS (Axial Lead Surmetic\*)**RATINGS AND CHARACTERISTICS ( $T_A = 75^\circ\text{C}$ , 60 Hz Sinusoidal)

| HEP Type No. | Peak Inverse Voltage PIV (Volts) | RMS Reverse Voltage $V_r$ (Volts) | Average Rectified Forward Current (Half-Wave) $I_O$ (Amp) | Non-Repetitive Peak Surge Current $I_{FM}$ (surge) (Amp) | Operating and Storage Junction Temperature $T_J, T_{STG}$ ( $^\circ\text{C}$ ) | Case  |
|--------------|----------------------------------|-----------------------------------|---|--|--|-------|
| R0050        | 50                               | 35                                | 1.0   | 30   | -65 to +175  | DO-41 |
| R0051        | 100                              | 70                                | 1.0   | 30   | -65 to +175  | DO-41 |
| R0052        | 200                              | 140                               | 1.0   | 30   | -65 to +175  | DO-41 |
| R0053        | 400                              | 280                               | 1.0   | 30   | -65 to +175  | DO-41 |
| R0054        | 600                              | 420                               | 1.0   | 30   | -65 to +175  | DO-41 |
| R0055        | 800                              | 560                               | 1.0   | 30   | -65 to +175  | DO-41 |
| R0056        | 1000                             | 700                               | 1.0   | 30   | -65 to +175  | DO-41 |

\*Surmetic is a Motorola trademarked term denoting all devices manufactured by a special technique.

**SILICON GENERAL PURPOSE RECTIFIERS (Axial Lead Fast Recovery Rectifiers)**

|         |      |      |     |    |             |       |
|---------|------|------|-----|----|-------------|-------|
| R0600*  | 50   | 35   | 1.0 | 30 | -65 to +175 | DO-41 |
| R0602*  | 200  | 140  | 1.0 | 30 | -65 to +175 | DO-41 |
| R0604*  | 400  | 280  | 1.0 | 30 | -65 to +175 | DO-41 |
| R0606*  | 600  | 420  | 1.0 | 30 | -65 to +175 | DO-41 |
| R3010** | 1200 | 840  | 1.0 | —  | -50 to +175 | DO-41 |
| R3012** | 1600 | 1120 | 1.0 | —  | -50 to +175 | DO-41 |

\*Typical reverse recovery time ( $t_{rr}$ ) = 100 nanoseconds\*\*Maximum reverse recovery time ( $t_{rr}$ ) = 3  $\mu\text{sec}$ **SILICON GENERAL PURPOSE RECTIFIERS (Axial Lead Metal Case)**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

|       |      |     |     |     |             |    |
|-------|------|-----|-----|-----|-------------|----|
| R0080 | 50   | 35  | 3.0 | 300 | -65 to +175 | 70 |
| R0081 | 100  | 70  | 3.0 | 300 | -65 to +175 | 70 |
| R0082 | 200  | 140 | 3.0 | 300 | -65 to +175 | 70 |
| R0084 | 400  | 280 | 3.0 | 300 | -65 to +175 | 70 |
| R0086 | 600  | 420 | 3.0 | 300 | -65 to +175 | 70 |
| R0090 | 50   | 35  | 3.0 | 300 | -65 to +175 | 60 |
| R0091 | 100  | 70  | 3.0 | 300 | -65 to +175 | 60 |
| R0092 | 200  | 140 | 3.0 | 300 | -65 to +175 | 60 |
| R0094 | 400  | 280 | 3.0 | 300 | -65 to +175 | 60 |
| R0096 | 600  | 420 | 3.0 | 300 | -65 to +175 | 60 |
| R0097 | 800  | 560 | 3.0 | 300 | -65 to +175 | 60 |
| R0098 | 1000 | 700 | 3.0 | 300 | -65 to +175 | 60 |

## RECTIFIERS AND DIODES (Continued)

### SILICON GENERAL PURPOSE RECTIFIERS (Axial Lead Plastic Case)

RATINGS AND CHARACTERISTICS ( $T_A = 75^\circ\text{C}$ )

| HEP Type No. | Peak Inverse Voltage PIV (Volts) | RMS Reverse Voltage $V_r$ (Volts) | Average Rectified Forward Current Ambient Temp = $60^\circ\text{C}$ P.C. Board Mtg. $I_o$ (Amp) | Average Rectified Forward Current Lead Temp = $60^\circ\text{C}$ Lead Length = 1/8" $I_o$ (Amp) | Non-Repetitive Peak Surge Current $I_{FSM}$ (Amp) | Case |
|--------------|----------------------------------|-----------------------------------|---|---|---|------|
| R0100        | 50                               | 35                                | 6.0   | 22  | 400   | 194  |
| R0101        | 100                              | 70                                | 6.0   | 22  | 400   | 194  |
| R0102        | 200                              | 140                               | 6.0   | 22  | 400   | 194  |
| R0104        | 400                              | 280                               | 6.0   | 22  | 400   | 194  |
| R0106        | 600                              | 420                               | 6.0   | 22  | 400   | 194  |

### SILICON GENERAL PURPOSE RECTIFIERS (Stud Mount)

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Peak Inverse Voltage PIV (Volts) | RMS Reverse Voltage $V_r$ (Volts) | Average Rectified Forward Current (Half-Wave) $I_o$ (Amp) | Peak Repetitive Forward Current $I_{FM}$ (rep) (Amp) | Non-Repetitive Peak Surge Current $I_{FM}$ (surge) (Amp) | Operating and Storage Junction Temperature $T_j, T_{stg}$ ( $^\circ\text{C}$ ) | Case    |
|--------------|----------------------------------|-----------------------------------|---|--|--|--|---------|
| R0130        | 50                               | 35                                | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0131        | 100                              | 70                                | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0132        | 200                              | 140                               | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0134        | 400                              | 280                               | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0136        | 600                              | 420                               | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0137        | 800                              | 560                               | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0138        | 1000                             | 700                               | 12  | 75   | 300  | -65 to +190  | DO-4(A) |
| R0160        | 50                               | 35                                | 15  |  | 250  | -65 to +175  | DO-5    |
| R0161        | 100                              | 70                                | 15  |  | 250  | -65 to +175  | DO-5    |
| R0162        | 200                              | 140                               | 15  |  | 250  | -65 to +175  | DO-5    |
| R0164        | 400                              | 280                               | 15  | 50   | 250  | -65 to +175  | DO-5    |
| R0166        | 600                              | 420                               | 15  | 50   | 250  | -65 to +175  | DO-5    |
| R0250        | 50                               | 35                                | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0251        | 100                              | 70                                | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0253        | 200                              | 140                               | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0254        | 300                              | 210                               | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0255        | 400                              | 280                               | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0256        | 500                              | 350                               | 35  | 150  | 400  | -65 to +190  | DO-5    |
| R0257        | 600                              | 420                               | 35  | 150  | 400  | -65 to +190  | DO-5    |

### SILICON GENERAL PURPOSE RECTIFIERS (Press-Fit And Alternator Replacement)

RATING AND CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ )

| HEP Type No. | Peak Inverse Voltage PIV (Volts) | Average Rectified Forward Current $I_o$ | Non-Repetitive Peak Surge Current $I_{FM}$ (surge) | Storage and Operating Junction Temperature Range ( $^\circ\text{C}$ ) | Case  |
|--------------|----------------------------------|---|--|---|-------|
| R0220        | 50                               | 25 A                                    | 300 A  | -65 to +175   | DO-21 |
| R0222        | 200                              | 25 A                                    | 300 A  | -65 to +175   | DO-21 |

**RECTIFIERS AND DIODES (Continued)****DUAL DIODES**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Reverse Voltage $V_R$ (Volts) | Forward Current $I_F$ (mA) | Peak Forward Surge Current $I_{FM}$ (surge) (mA) | Total Device Dissipation $P_D$ (mW) | Reverse Current $I_R$ ( $\mu\text{A}$ ) | Operating and Storage Junction Temperature $T_J, T_{stg}$ ( $^\circ\text{C}$ ) | Case     |
|--------------|-------------------------------|----------------------------|--|-------------------------------------|---|--|----------|
| R9001 ①      | 70                            | 200                        | 500  | 310                                 | 0.1                                     | -55 to +135  | TO-92(C) |
| R9002 ②      | 70                            | 200                        | 500  | 310                                 | 0.1                                     | -55 to +135  | TO-92(D) |
| R9003 ③      | 100                           | 200                        | 500  | 350                                 | 0.5                                     | -55 to +150  | TO-92(M) |

① Common Cathode    ② Common Anode    ③ Series Connected

**BILATERAL TRIGGER DIODE**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Peak Pulse Current $I_{pulse}$ (Amp) | Typical Breakover Voltage Switching $V_S$ (Volts) | Typical Breakover Current Switching $I_S$ ( $\mu\text{A}$ ) | Minimum Breakback Voltage Forward $\Delta V$ (Volts) | Total Device Dissipation $P_D$ (mW) | Operating Junction Temperature $T_J$ ( $^\circ\text{C}$ ) | Case      |
|--------------|--------------------------------------|---|---|--|-------------------------------------|---|-----------|
| R2002        | 2.0                                  | 28 $\pm$ 4  | 20  | 7.0  | 300                                 | -40 to +100   | TO-92A(B) |

**BIDIRECTIONAL SWITCH**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Repetitive Peak Forward Current $I_{FM}$ (rep) (Amp) | Forward Anode Current $I_F$ (mA) | Typical Switching Voltage $V_S$ (Volts) | Gate Trigger Current (max) $I_{GF}$ ( $\mu\text{A}$ ) | Max Holding Current $I_H$ (mA) | Power Dissipation $P_D$ (mW) | Operating Junction Temperature ( $^\circ\text{C}$ ) | Case     |
|--------------|--|----------------------------------|---|---|--------------------------------|------------------------------|---|----------|
| R2001        | 2.0  | 200                              | 8.0                                     | 100   | 1.5                            | 500                          | -55 to +125   | TO-92(H) |

**UNIDIRECTIONAL SWITCH**

|       |     |     |     |     |     |     |             |          |
|-------|-----|-----|-----|-----|-----|-----|-------------|----------|
| R2021 | 2.0 | 200 | 8.0 | 500 | 1.5 | 300 | -55 to +125 | TO-92(K) |
|-------|-----|-----|-----|-----|-----|-----|-------------|----------|

**FULL-WAVE BRIDGE ASSEMBLIES 1 AMPERE UNITS**RATINGS AND CHARACTERISTICS ( $T_A = 75^\circ\text{C}$ )

| HEP Type No. | Peak Inverse Voltage (per cell) PIV (Volts) | RMS Input Voltage $V_{IN}$ (Volts) | DC Output Current $I_{out}$ (Amp) | DC Output Voltage $V_{out}$ |                   | Non-Repetitive Peak Surge Current $I_{FM}$ (surge) (Amp) | Case |
|--------------|---|------------------------------------|-----------------------------------|-----------------------------|-------------------|--|------|
|              |   |                                    |                                   | Res. Load (Volts)           | Cap. Load (Volts) |  |      |
| R0801        | 50  | 35                                 | 1.0                               | 30                          | 50                | 32   | 108  |
| R0802        | 100   | 70                                 | 1.0                               | 62                          | 100               | 32   | 108  |
| R0803        | 200   | 140                                | 1.0                               | 124                         | 200               | 32   | 108  |
| R0804        | 400   | 280                                | 1.0                               | 250                         | 400               | 32   | 108  |
| R0805        | 600   | 420                                | 1.0                               | 380                         | 600               | 32   | 108  |

**1.8 AMPERE UNITS**

|       |     |     |     |     |     |    |     |
|-------|-----|-----|-----|-----|-----|----|-----|
| R0841 | 50  | 35  | 1.8 | 30  | 50  | 60 | 216 |
| R0842 | 100 | 70  | 1.8 | 62  | 100 | 60 | 216 |
| R0843 | 200 | 140 | 1.8 | 124 | 200 | 60 | 216 |
| R0845 | 400 | 280 | 1.8 | 250 | 400 | 60 | 216 |
| R0846 | 600 | 420 | 1.8 | 380 | 600 | 60 | 216 |



**RECTIFIERS AND DIODES (Continued)****12 AMPERE UNITS**RATINGS AND CHARACTERISTICS ( $T_A = 75^\circ\text{C}$ )

| HEP Type No. | Peak Inverse Voltage (per cell) PIV (Volts) | RMS Input Voltage $V_{IN}$ (Volts) | DC Output Current $I_{out}$ (Amp) | DC Output Voltage $V_{out}$ |                   | Non-Repetitive Peak Surge Current $I_{FM}$ (surge) (Amp) | Case   |
|--------------|---|------------------------------------|-----------------------------------|-----------------------------|-------------------|--|--------|
|              |   |                                    |                                   | Res. Load (Volts)           | Cap. Load (Volts) |  |        |
| R0875        | 50  | 35                                 | 12                                | 30                          | 50                | 300  | 179-01 |
| R0876        | 100   | 70                                 | 12                                | 62                          | 100               | 300  | 179-01 |
| R0877        | 200   | 140                                | 12                                | 124                         | 200               | 300  | 179-01 |
| R0878        | 400   | 280                                | 12                                | 250                         | 400               | 300  | 179-01 |
| R0879        | 600   | 420                                | 12                                | 380                         | 600               | 300  | 179-01 |

**27 AMPERE UNITS**

|       |     |     |    |     |     |     |        |
|-------|-----|-----|----|-----|-----|-----|--------|
| R0880 | 50  | 35  | 27 | 30  | 50  | 300 | 179-02 |
| R0881 | 100 | 70  | 27 | 62  | 100 | 300 | 179-02 |
| R0882 | 200 | 140 | 27 | 124 | 200 | 300 | 179-02 |
| R0883 | 400 | 280 | 27 | 250 | 400 | 300 | 179-02 |
| R0884 | 600 | 420 | 27 | 390 | 600 | 300 | 179-02 |

**HIGH VOLTAGE RECTIFIERS**RATINGS AND CHARACTERISTICS ( $T_A = 75^\circ\text{C}$ )

| HEP Type No. | Repetitive Peak Reverse Voltage | Average Forward Current $I_{out}$ | Reverse Current @ 30 KV | Anode to Cathode Capacitance | Reverse Recovery Time (nanoseconds) | Case |
|--------------|---------------------------------|-----------------------------------|-------------------------|------------------------------|-------------------------------------|------|
| R3100        | 45,000                          | 2.2 mA                            | 10 $\mu$ A              | .75 pf                       | 300                                 | 277  |

**INTEGRATED CIRCUITS****RESISTOR TRANSISTOR LOGIC (RTL)**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Logic Function                         | Power Supply Voltage $V_{CC}$ (Volts) | Typical Fan-Out | Typical Propagation Time (ns) | Power Dissipation $P_D$ (mW) | Case   |
|--------------|--|---------------------------------------|-----------------|-------------------------------|------------------------------|--------|
| C2001P       | Quad 2-Input Expander                  | 3.6                                   | —               | 12                            | 20                           | TO-116 |
| C2002P       | Dual Buffer                            | 3.6                                   | 80              | 20                            | 50                           | TO-116 |
| C2003P       | Quad-2-Input NOR Gate                  | 3.6                                   | 5               | 12                            | 100                          | TO-116 |
| C2004P       | Dual J-K Flip-Flop                     | 3.6                                   | 10              | 36                            | 250                          | TO-116 |
| C2005P       | Hex Inverter                           | 3.6                                   | 5               | 48                            | 130                          | TO-116 |
| C2006G       | Dual 2-Input NOR Gate                  | 3.6                                   | 4               | 27                            | 10                           | TO-99  |
| C2007G       | 4-Input OR/ NOR Gate                   | 3.6                                   | 4               | 60                            | 8.0                          | TO-99  |
| C2008G       | Dual Buffer                            | 3.6                                   | 30              | 52                            | 46                           | TO-99  |
| C2009G       | J-K Flip-Flop                          | 3.6                                   | 2               | 80                            | 23                           | TO-99  |
| C2010G       | Dual 2-Input NOR Gate                  | 3.6                                   | 16              | 12                            | 50                           | TO-99  |
| C2500P       | Dual 4-Input Expander                  | 3.6                                   | —               | 12                            | 20                           | TO-116 |
| C2501P       | BCD-to-Decimal Decoder                 | 3.6                                   | 7               | 36                            | 100                          | 612    |
| C2502P       | Quad 2-Input NOR Gate                  | 3.6                                   | 4               | 27                            | 20                           | TO-116 |
| C2503P       | 1 J-K Flip-Flop, 1 Inverter, 2 Buffers | 3.6                                   | 10/80/80        | —/ 12/ 15                     | 91/ 25/ 25                   | TO-116 |
| C0900P       | Dual 4-Input Line Driver               | 15                                    | 10              | 140                           | 180                          | TO-116 |
| C0901P       | Dual J-K Flip-Flop                     | 15                                    | 10              | 3 MHz                         | 200                          | TO-116 |

**INTEGRATED CIRCUITS (Continued)****HIGH THRESHOLD LOGIC (HTL)**RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Logic Function                         | Power Supply Voltage $V_{CC}$ (Volts) | Typical Fan-Out | Typical Propagation Time (ns) | Power Dissipation $P_D$ (mW) | Case   |
|--------------|--|---------------------------------------|-----------------|-------------------------------|------------------------------|--------|
| C0902P       | Quad 2-Input NAND Gate                 | 15                                    | 10              | 125                           | 176                          | TO-116 |
| C0903P       | Dual 4-Input Expander                  | 15                                    | —               | —                             | —                            | TO-116 |
| C0904P       | Triple 3-Input NAND Gate               | 15                                    | 10              | 125                           | 132                          | TO-116 |
| C0905P       | Dual 4-Input NAND Gate                 | 15                                    | 10              | 125                           | 88                           | TO-116 |
| C0906P       | Master-Slave R-S Flip-Flop             | 15                                    | 10              | 3 MHz                         | 160                          | TO-116 |
| C0907P       | Quad Latch                             | 15                                    | 10              | 100                           | 375                          | TO-116 |
| C0908P       | Hex Inverter                           | 15                                    | 10              | 125                           | 192                          | TO-116 |
| C0909P       | Quad 2-Input NAND Gate                 | 15                                    | 10              | 110                           | 176                          | TO-116 |
| C0910P       | Triple Level Translator                | 15                                    | 8               | 30                            | 104                          | TO-116 |
| C0911P       | Dual Monostable Multivibrator          | 15                                    | 10              | 75                            | 240                          | TO-116 |
| C0912P       | Dual 2-Wide 2-Input AND-OR-INVERT Gate | 15                                    | 10              | 110                           | 160                          | TO-116 |

**DIODE TRANSISTOR LOGIC (DTL)**

|        |                                       |     |    |        |     |        |
|--------|---------------------------------------|-----|----|--------|-----|--------|
| C1030P | Dual 4-Input OR/ NAND Gate            | 8.0 | 8  | 30     | 26  | TO-116 |
| C1032P | Dual 4-Input Buffer                   | 8.0 | 25 | 35     | 88  | TO-116 |
| C1033P | Dual 4-Input Expander                 | 8.0 | —  | —      | —   | TO-116 |
| C1035P | Hex Inverter (no pullup resistors)    | 8.0 | 8  | 30     | 42  | TO-116 |
| C1038P | Decade Counter                        | 8.0 | 8  | 30 MHz | 150 | TO-116 |
| C1039P | Divide-by-Sixteen Counter             | 8.0 | 8  | 30 MHz | 150 | TO-116 |
| C1044P | Dual 4-Input NAND Power Gate          | 8.0 | 27 | 30     | 64  | TO-116 |
| C1045P | Clock Flip-Flop                       | 8.0 | 12 | 40     | 60  | TO-116 |
| C1052P | Dual J-K Flip-Flop (Sep. Clock Input) | 8.0 | 12 | 40     | 120 | TO-116 |
| C1058P | Quad 2-Input NAND Power Gate          | 8.0 | 27 | 30     | 130 | TO-116 |
| C1062P | Triple 3-Input NAND Gate              | 8.0 | 8  | 30     | 39  | TO-116 |

**TRANSISTOR TRANSISTOR LOGIC (TTL)**

|        |  |     |    |        |     |        |
|--------|--|-----|----|--------|-----|--------|
| C3000P | Quad 2-Input NAND Gate                       | 5.0 | 10 | 13     | 40  | TO-116 |
| C3001P | Quad 2-Input NAND Gate (open collector)      | 5.0 | 10 | 35     | 40  | TO-116 |
| C3004P | Hex Inverter                                 | 5.0 | 10 | 13     | 60  | TO-116 |
| C3010P | Triple 3-Input NAND Gate                     | 5.0 | 10 | 13     | 30  | TO-116 |
| C3020P | Dual 4-Input NAND Gate                       | 5.0 | 10 | 13     | 20  | TO-116 |
| C3030P | 8-Input NAND Gate                            | 5.0 | 10 | 13     | 10  | TO-116 |
| C3040P | Dual 4-Input NAND Buffer                     | 5.0 | 30 | 13     | 50  | TO-116 |
| C3041P | BCD-to-Decimal Decoder and High-Level Driver | 5.0 | —  | —      | 105 | 612    |
| C3050P | Dual 2-Wide 2-Input AND-OR-INVERT Gate       | 5.0 | 10 | 13     | 28  | TO-116 |
| C3073P | Dual J-K Flip-Flop                           | 5.0 | —  | 15 MHz | 80  | TO-116 |
| C3075P | Quad Latch                                   | 5.0 | 10 | 30     | 160 | 612    |
| C3800P | Decade Counter                               | 5.0 | 10 | 20     | 160 | TO-116 |
| C3801P | Divide-by-Twelve Counter                     | 5.0 | 10 | 60     | 160 | TO-116 |
| C3802P | Seven-Segment Character Generator            | 5.0 | —  | 45*    | 240 | 612    |
| C3803P | Retriggerable Monostable Multivibrator       | 5.0 | 8  | 25     | 75  | TO-116 |
| C3804P | Programmable Modulo-N Decade Counter         | 5.0 | 8  | 50     | 250 | 612    |
| C3805P | Dual Voltage-Controlled Multivibrator        | 5.0 | 7  | 30 MHz | 150 | TO-116 |
| C3806P | Phase-Frequency Detector                     | 5.0 | 10 | 9.0    | 85  | TO-116 |

\*Address Time

HEP Semiconductor Catalog  
**INTEGRATED CIRCUITS (Continued)**

**LINEAR**

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Description  | Power Supply Voltage (Volts)   |    | Typical Voltage Gain ( $A_v$ ) | Typical Impedances (Ohms) |           | Power Dissipation $P_D$ | Case   |        |
|--------------|--|--------------------------------|----|--------------------------------|---------------------------|-----------|-------------------------|--------|--------|
|              |  | V+                             | V- |                                | $Z_{in}$                  | $Z_{out}$ |                         |        |        |
| C6001        | FM IF Amplifier  | +20                            |    | 40 dB                          |                           |           | 1 W                     | 643A   |        |
| C6002        | Low-Noise Audio Preamp   | +33                            |    | 90 dB                          | 75 k                      | 100       | 1 W                     | 644A   |        |
| C6003        | ¼-Watt Audio Amplifier   | +12                            |    | —                              | —                         | —         | 250 mW                  | 206A   |        |
| C6004        | 1-Watt Audio Amplifier and Preamp  | +22                            |    | 65 dB                          | 1.2 Meg                   | 16        | 1.2 W                   | 644A   |        |
| C6007        | Single Toggle Flip-Flop (3 MHz)  | +19                            |    | —                              | 10 k                      | 2.8 k     | 1 W                     | 206A   |        |
| C6008        | 1-Watt Audio Amplifier and Preamp  | +20                            |    | —                              | —                         | —         | 1 W                     | 643A   |        |
| C6009        | Electronic Attenuator  | +20                            |    | 13 dB                          | —                         | —         | 1 W                     | 643A   |        |
| C6010        | Wide-Band Amplifier  | +18                            |    | 68 dB                          | 16 k                      | 33 k      | 500 mW                  | 206A   |        |
| C6011        | Dual-Toggle Flip-Flop  | +19                            |    | —                              | —                         | —         | 1 W                     | 643A   |        |
| C6012        | Voltage Regulator  | +38                            |    | —                              | —                         | —         | 1 W                     | 643A   |        |
| C6013        | Class A Audio Driver   | +18                            |    | 130 V/V                        | —                         | —         | 1 W                     | 206A   |        |
| C6014        | Voltage Regulator  | +38                            |    | Reg. Volt Out 35               | Max. Load Current 200 mA  |           | 1 W                     | 206A   |        |
| C6015        | Dual-Toggle Flip-Flop with Reset   | +19                            |    | Max. Freq. 3 MHz               | —                         | —         | 1 W                     | 643A   |        |
| C6016        | Class B Audio Driver   | +20                            |    | 87 dB                          | 500 k                     | 3.2       | 1 W                     | 644A   |        |
| C6049G       | Positive Power Supply Voltage Regulator                                      | +9-35                          |    | Reg. Volt Out +2.5-32          | Max Load Current 250 mA   |           | 680 mW                  | 602A   |        |
| C6049R       | Positive Power Supply Voltage Regulator                                      | +9-35                          |    | Reg. Volt Out +2.5-32          | Max. Load Current 600 mA  |           | 3 W                     | 614    |        |
| C6050G       | Balanced Modulator/ Demodulator  | 30                             |    | —                              | —                         | —         | 680 mW                  | 602A   |        |
| C6051P       | Dual Operational Amplifier   | 18                             | 18 | 45 k                           | 400 k                     | 30        | 1 W                     | TO-116 |        |
| C6052G       | Operational Amplifier  | 18                             | 18 | 100 k                          | 1 Meg                     | 75        | 680 mW                  | TO-99  |        |
| C6052P       | Operational Amplifier  | 18                             | 18 | 100 k                          | 1 Meg                     | 75        | 625 mW                  | 626    |        |
| C6053G       | Operational Amplifier  | 18                             | 18 | 100 k                          | 300 k                     | 4 k       | 680 mW                  | TO-99  |        |
| C6053L       | Operational Amplifier  | 18                             | 18 | 100 k                          | 300 k                     | 4 k       | 575 mW                  | TO-116 |        |
| C6054G       | Negative Power Supply Voltage Regulator                                      | +9-35                          |    | Reg. Volt Out 3.8-32           | Max. Load Current 250 mA  |           | 680 mW                  | 602A   |        |
| C6054R       | Negative Power Supply Voltage Regulator                                      | +9-35                          |    | Reg. Volt Out 3.8-32           | Max. Load Current 600 mA  |           | 2.4 W                   | 614    |        |
| C6055L       | Stereo Preamp  | 15                             | 15 | 10 k V/V                       | 100 k                     | 10 k      | 625 mW                  | TO-116 |        |
| C6056P       | FM Multiplex Stereo Demodulator  | +22                            |    | —                              | 20 k                      | —         | 625 mW                  | TO-116 |        |
| C6057P       | Chroma Demodulator   | +30                            |    | —                              | —                         | —         | 625 mW                  | TO-116 |        |
| C6059P       | IF Amplifier with AGC  | +18                            |    | 50 dB                          | —                         | —         | 625 mW                  | 626    |        |
| C6060P       | Wide-Band IF Limiter, Detector, Audio Preamp and Driver                      | +16                            |    | 65 dB                          | —                         | —         | 625 mW                  | TO-116 |        |
| C6061P       | Four-Stage, High-Gain FM/ IF Amplifier                                       | +15                            |    | —                              | —                         | —         | 625 mW                  | TO-116 |        |
| C6062P       | IF Amplifier with Quadrature Detector  | +16                            |    | 60 dB                          | 5 k                       | —         | 625 mW                  | TO-116 |        |
| C6063P       | FM/ IF Amplifier, Limiter, Detector, Audio Driver, and Electronic Attenuator | +12.2                          |    | > 60 dB                        | 17 k                      | 3.25 k    | 625 mW                  | TO-116 |        |
| C6065P       | FM Multiplex Stereo Demodulator  | Intended For Exact Replacement |    |                                |                           |           |                         |        | 647    |
| C6066P       | Chroma Demodulator   | Intended For Exact Replacement |    |                                |                           |           |                         |        | TO-116 |
| C6067G       | Chroma Demodulator   | +30                            |    | —                              | —                         | —         | 625 mW                  | TO-100 |        |
| C6068P       | FM Multiplex Stereo Demodulator  | +22                            |    | —                              | 20 k                      | —         | 625 mW                  | 647    |        |
| C6069G       | AFT/ Amplifier/ Detector/ Driver   | +30                            |    | —                              | 2.5 k                     | 50 k      | 625 mW                  | 686    |        |
| C6070P       | Subcarrier Regenerator   | +30                            |    | —                              | —                         | —         | 625 mW                  | 648    |        |
| C6071P       | Chroma Amplifier   | +30                            |    | 17 dB                          | 2 k                       | 85        | 625 mW                  | TO-116 |        |
| C6072P       | Balanced Chroma Demodulator  | +30                            |    | —                              | 2 k                       | —         | 625 mW                  | TO-116 |        |
| C6073P       | 2-Watt Audio Amplifier   | 32                             |    | —                              | —                         | 4/ 18/ 16 | 2 W                     | 675    |        |
| C6074P       | FM Stereo Demodulator  | +22                            |    | —                              | 20 k                      | —         | 625 mW                  | 647    |        |

# INTEGRATED CIRCUITS (Continued)

## LINEAR

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Description                                      | Power Supply Voltage (Volts)   |     | Typical Voltage Gain ( $A_v$ ) | Typical Impedances (Ohms) |            | Power Dissipation $P_D$ | Case   |
|--------------|--|--------------------------------|-----|--------------------------------|---------------------------|------------|-------------------------|--------|
|              |  | V+                             | V-  |                                | $Z_{in}$                  | $Z_{JOUT}$ |                         |        |
| C6075P       | Color Processing Circuit                         | +11.5                          |     | 60 dB                          | 2.3 k                     | 15         | 625 mW                  | TO-116 |
| C6076P       | Video IF Amplifier and AGC                       | +18                            |     | —                              | —                         | —          | 625 mW                  | TO-116 |
| C6077P       | Color Processing Circuit                         |                                |     | 52 dB                          | —                         | —          | 625 mW                  | TO-116 |
| C6078R       | Power Booster                                    | 18                             | 18  | 3000 (Current)                 | 40                        | 10         | 3 W                     | 614    |
| C6079P       | Video Detector                                   | +24                            |     | —                              | 3.5                       | 180        | 625 mW                  | 626    |
| C6080P       | Low Noise Stereo Preamplifier                    | +16                            |     | 66 dB                          | $R_{in}$ 250 k            | 3 k        | 625 mW                  | TO-116 |
| C6081P       | Signal Processor                                 | +22                            |     | —                              | —                         | —          | 625 mW                  | TO-116 |
| C6082P       | IF Amplifier and Quadrature Detector             | +16                            |     | 65 dB                          | —                         | —          | 625 mW                  | 647    |
| C6083P       | IF Amp/ Limiter/ FM Detector/ Driver/ Attenuator | +12.2                          |     | > 60 dB                        | 17 k                      | 3.25 k     | 625 mW                  | 647    |
| C6085P       | Signal Processor                                 | Intended For Exact Replacement |     |                                |                           |            |                         | TO-116 |
| C6087P       | Stereo Preamplifier                              | Intended For Exact Replacement |     |                                |                           |            |                         | TO-116 |
| C6089        | Chroma Demodulator                               | +28                            |     | —                              | —                         | 3 k        | 680 mW                  | 1A1    |
| C6090        | Dual Audio Amplifier 2-Watts Per Channel         | 30                             |     | 75                             | 10                        | 4/ 8/ 16   | 5 W                     | 1A2    |
| C6091G       | High Frequency Amplifier                         | +20                            |     | 22 (Min)                       | 1.8 k                     | 100 k      | 680 mW                  | 602B   |
| C6092G       | Stereo Preamplifier                              | 9.0                            | 9.0 | 7000 V/ V                      | 10 k                      | 1.7 k      | 680 mW                  | 602B   |
| C6093G       | Audio Power Amplifier                            | 9.0                            | 9.0 | 10,18,36 V/ V                  | 10 k                      | 0.4        | 1 W                     | 602B   |
| C6094P ①     | FM Multiplex Stereo Demodulator                  | +22                            |     | —                              | 20 k                      | —          | 625 mW                  | TO-116 |
| C6095P ②     | FM Multiplex Stereo Demodulator                  | +22                            |     | —                              | 20 k                      | —          | 625 mW                  | TO-116 |
| C6096P       | FM Stereo Demodulator                            | +16                            |     | —                              | 50 k                      | —          | 625 mW                  | TO-116 |
| C6099P       | Radio and TV IF Amplifier                        | 18                             |     | 60 dB                          | —                         | HI         | 625 mW                  | 626    |
| C6100P       | Automatic Frequency Control                      | +30                            |     | —                              | —                         | —          | 625 mW                  | TO-116 |
| C6101P       | FM IF Amp/ Limiter/ Detector/ Preamp             | +16                            |     | 21 dB                          | 5 k                       | —          | 625 mW                  | 647    |
| C6102P       | Dual Operational Amplifier                       | 18                             | 18  | $A_{VOL}$ 100 k                | 1 meg                     | 75         | 625 mW                  | 626    |
| C6103P       | Operational Amplifier                            | 18                             | 18  | $A_{VOL}$ 45 k                 | 250 k                     | 150        | 625 mW                  | 626    |
| C6104L       | Voltage Regulator                                | 9.5-40                         |     | Reg. Volt. Out 2.0-37          | Max. Load Current 150 mA  |            | 500 mW                  | TO-116 |
| C6105P       | Voltage Regulator                                | Intended For Exact Replacement |     |                                |                           |            |                         | 199(A) |
| C6107P       | Operational Amplifier                            | 18                             | 18  | 160                            | $R_{in}$ 2 meg            | —          | 625 mW                  | 626    |
| C6110P       | Postive Voltage Regulator                        | + $V_{in}$<br>7.0-25           |     | Reg. Volt. Out 4.8-5.2         | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6111P       | Postive Voltage Regulator                        | + $V_{in}$<br>8.0-25           |     | Reg. Volt. Out 5.7-6.3         | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6112P       | Postive Voltage Regulator                        | + $V_{in}$<br>10.5-25          |     | Reg. Volt. Out 7.7-8.3         | Max Load Current 1 Amp    |            |                         |        |
| C6113P       | Postive Voltage Regulator                        | + $V_{in}$<br>14.5-30          |     | Reg. Volt. Out 11.5-12.5       | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6114P       | Postive Voltage Regulator                        | + $V_{in}$<br>17.5-30          |     | Reg. Volt. Out 14.4-15.6       | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6115P       | Postive Voltage Regulator                        | + $V_{in}$<br>21-33            |     | Reg. Volt. Out 17.3-18.7       | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6116P       | Postive Voltage Regulator                        | + $V_{in}$<br>27-38            |     | Reg. Volt. Out 23-25           | Max. Load Current 1 Amp   |            | 2 W                     | 199(A) |
| C6117P       | Negative Voltage Regulator                       | - $V_{in}$<br>7.0-25           |     | Reg. Volt. Out 1.9-2.1         | Max. Load Current 1 Amp   |            | 2 W                     | 199(B) |
| C6118P       | Negative Voltage Regulator                       | - $V_{in}$<br>7.0-25           |     | Reg. Volt. Out 4.8-5.2         | Max. Load Current 1 Amp   |            | 2 W                     | 199(B) |
| C6119P       | Negative Voltage Regulator                       | - $V_{in}$<br>7.2-25           |     | Reg. Volt. Out 5.0-5.4         | Max. Load Current 1 Amp   |            | 2 W                     | 199(B) |

① Has built-in stereo channel separation

② Permits use of external control for maximum separation



## INTEGRATED CIRCUITS (Continued)

### LINEAR

RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| HEP Type No. | Description                | Power Supply Voltage (Volts) |                | Typical Voltage Gain (A <sub>v</sub> ) | Typical Impedances (Ohms) |                            | Power Dissipation P <sub>D</sub> | Case   |
|--------------|----------------------------|------------------------------|----------------|--|---------------------------|----------------------------|----------------------------------|--------|
|              |                            | V <sub>+</sub>               | V <sub>-</sub> |  | Z <sub>in</sub>           | Z <sub>JOUT</sub>          |                                  |        |
| C6120P       | Negative Voltage Regulator | -V <sub>in</sub><br>8.0-25   |                | Reg. Volt. Out<br>5.7-6.3              |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |
| C6121P       | Negative Voltage Regulator | -V <sub>in</sub><br>10.5-25  |                | Reg. Volt. Out<br>7.6-8.4              |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |
| C6122P       | Negative Voltage Regulator | -V <sub>in</sub><br>14.5-30  |                | Reg. Volt. Out<br>11.5-12.5            |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |
| C6123P       | Negative Voltage Regulator | -V <sub>in</sub><br>17.5-30  |                | Reg. Volt. Out<br>14.4-15.6            |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |
| C6124P       | Negative Voltage Regulator | -V <sub>in</sub><br>21-33    |                | Reg. Volt. Out<br>17.3-18.7            |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |
| C6125P       | Negative Voltage Regulator | -V <sub>in</sub><br>27-38    |                | Reg. Volt. Out<br>23-25                |                           | Max. Load Current<br>1 Amp | 2 W                              | 199(B) |

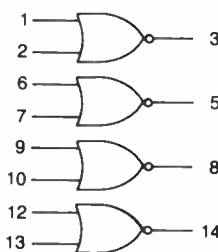
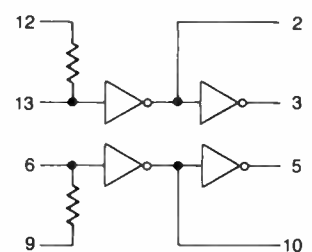
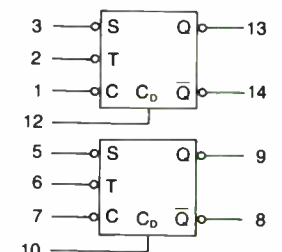
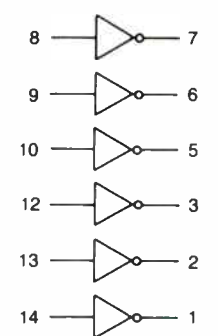
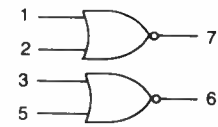
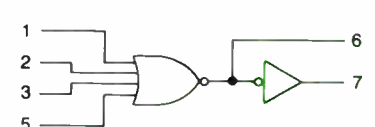
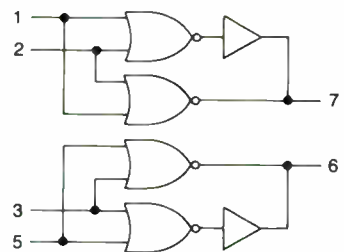
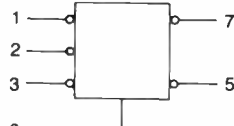
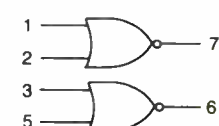
## HOBBY EXPERIMENTER KITS

|                   |       |   |
|-------------------|-------|---|
| IC KIT            | HEK-1 | Contains 2 HEP 580, 1 HEP 581, 1 HEP 582, 1 HEP 583, plus project brochure            |
| FET KIT           | HEK-2 | Contains 1 HEP 801, 1 HEP 802, 1 HEP 50, 1 HEP 51, plus project brochure              |
| RADIO AMATEUR KIT | HEK-3 | Contains 2 HEP 590, 1 HEP 570, plus project brochure                                  |
| HOME HANDYMAN KIT | HEK-4 | Contains 1 HEP 320, 1 HEP 310, 1 HEP 312, 1 HEP 156, 1 HEP 55, plus project brochure. |

## ACCESSORIES

| HEP No. | Description  |
|---------|--|
| A0450   | TO-3 Transistor Mounting Kit                             |
| A0451   | 10 Pin IC Sockets (pkg. of 2)                            |
| A0452   | TO-66 Transistor Mounting Kit                            |
| A0453   | 14 Pin Dual-Inline IC Socket                             |
| A0454   | 8 Pin IC Socket (pkg. of 2)                              |
| A0455   | TO-36 Transistor Mounting Kit                            |
| A0456   | DO-4 Stud Device Mounting Kit (7/16" stud, 10-32 thread) |
| A0457   | DO-5 Stud Device Mounting Kit (11/16", 1/4-28 thread)    |
| A0458   | 16 Pin Dual-Inline IC Socket                             |
| A0500   | TO-3 Heat Sink   |
| A0501   | TO-36 Heat Sink  |
| A0502   | TO-5 Heat Sink   |

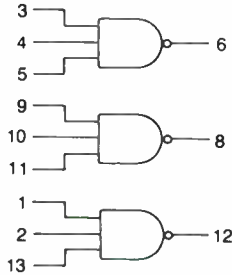
| HEP No. | Description                                     |
|---------|---|
| A0503   | TO-5 Heat Sink and Mounting Adaptor             |
| B0007   | Semiconductor Cross-Reference Guide and Catalog |
| B0400   | Book — Solid State Projects from Motorola       |
| B0408   | Book — Field Effect Transistor Projects         |
| B0410   | Silicon Rectifier Handbook                      |
| B0411   | Motorola Semiconductor Data Library             |
| B0413   | Zener Diode Handbook                            |
| B0415   | MELC IC Data Book                               |
| B0416   | Linear IC Data Book                             |
| B0417   | Phase-Locked Loop Systems Data Book             |
| B0418   | IC Glossary of Terms                            |

|  |  |  |
|--|--|--|
| <p><b>HEP C2003P</b> CASE TO-116<br/>RTL QUAD-2-INPUT NOR GATE</p> <p>This device will replace many RTL gates at a large savings in space and cost, (i.e., two <math>\mu</math>L914 devices can be replaced by one HEP 570).</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 11</p> | <p><b>HEP C2002P</b> CASE TO-116<br/>RTL DUAL BUFFER</p> <p>This device will replace many RTL buffers at a large savings in space and cost, (i.e., two <math>\mu</math>L900 devices can be replaced by one HEP 571).</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 11</p>   | <p><b>HEP C2004P</b> CASE TO-116<br/>RTL DUAL J-K FLIP-FLOP</p> <p>This device will replace many J-K flip-flops at a large savings in space and cost, (i.e., two <math>\mu</math>L923 devices can be replaced by one HEP 572).</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 11</p> |
| <p><b>HEP C2005P</b> CASE TO-116<br/>RTL HEX INVERTER</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 11</p>   | <p><b>HEP C2006G</b> CASE TO-99<br/>RTL DUAL 2-INPUT NOR GATE</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 8</p>   | <p><b>HEP C2007G</b> CASE TO-99<br/>RTL 4-INPUT OR/NOR GATE</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 8</p>   |
| <p><b>HEP C2008G</b> CASE TO-99<br/>RTL DUAL BUFFER</p> <p>This device is designed to drive a greater number of loads than the basic RTL circuit.</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 8</p>   | <p><b>HEP C2009G</b> CASE TO-99<br/>RTL J-K FLIP-FLOP</p> <p>This device is one of the most popular and useful for the hobbyist/experimentor. It may be used as a divide-by-two counter, or combined with other flip-flops it can act as a frequency divider.</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 8</p> | <p><b>HEP C2010G</b> CASE TO-99<br/>RTL DUAL 2-INPUT NOR GATE</p> <p>These gates may be used independently, paralleled for increasing the number of inputs, or cross-connected to form bistable elements.</p>  <p>GND PIN 4<br/><math>V_{CC}</math> PIN 8</p>                     |

# HEP Integrated Circuit Function Chart

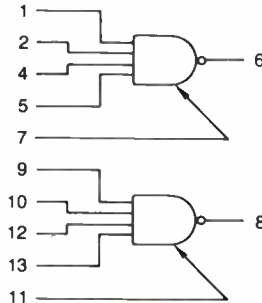
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|--|--|--|
| <p><b>HEP C6091</b> CASE 71<br/>HIGH FREQUENCY RF-IF AMP.</p>  | <p><b>HEP C6092G</b> CASE 71<br/>STEREO PREAMPLIFIER</p>   | <p><b>HEP C6093G</b> CASE 71<br/>AUDIO POWER AMP</p>   |
| <p><b>HEP</b> CASE TO-116<br/>FM MULTIPLEX STEREO DEMODULATOR</p> <p>This device eliminates the need for an external stereo-channel separation control.</p>                                | <p><b>HEP C6095P</b> CASE TO-116</p> <p>This device permits the use of an external stereo-channel separation control for maximum separation.</p>                   | <p><b>HEP C0900P</b> CASE TO-116<br/>HTL EXPANDABLE DUAL 4-INPUT LINE DRIVER</p> <p>This device consists of two expandable 4-input NAND line drivers with active output pullup. This device allows fan-out to 30 HTL gates and drives large capacitive loads.</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> |
| <p><b>HEP C0901P</b> CASE TO-116<br/>HTL DUAL J-K FLIP-FLOP</p> <p>Each flip-flop has a test reset input in addition to the clocked inputs.</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> | <p><b>HEP C0902P</b> CASE TO-116<br/>HTL QUAD 2-INPUT "NAND" GATE</p> <p>This device employs passive output pullup.</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> | <p><b>HEP C0903P</b> CASE TO-116<br/>HTL DUAL 4-INPUT EXPANDER</p> <p>Increases the fan-in capability of other HTL devices to a maximum of 20 while having negligible effect on their performance.</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  |

**HEP C0904P** CASE TO-116  
**HTL TRIPLE 3-INPUT "NAND" GATE**  
 This device employs passive output pullup.



GND PIN 7  
 V<sub>CC</sub> PIN 14

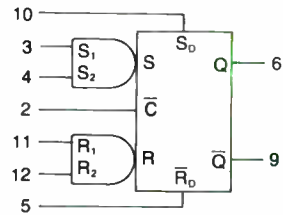
**HEP C0905P** CASE TO-116  
**HTL EXPANDABLE DUAL 4-INPUT "NAND" GATE (PASSIVE OUTPUT PULLUP)**



GND PIN 7  
 V<sub>CC</sub> PIN 14

**HEP C0906P** CASE TO-116  
**MASTER-SLAVE R-S FLIP-FLOP**

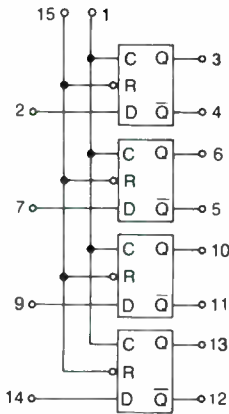
A dc coupled R-S flip-flop operating on the master-slave principle. Information is entered in the master section while the clock pulse is high and is transferred to the slave when the clock goes negative.



GND PIN 7  
 V<sub>CC</sub> PIN 14

**HEP C0907P** CASE TO-116  
**HTL QUAD LATCH**

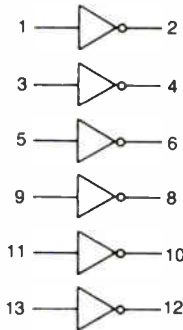
A common Reset (R) input allows resetting of all Q outputs to a logic "0" state independent of C or D.



V<sub>CC</sub> PIN 16  
 GND PIN 8

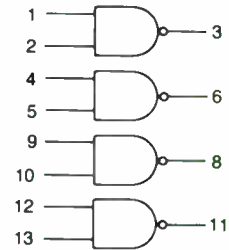
**HEP C0908P** CASE TO-116  
**HTL HEX INVERTER**

This device consists of six inverters designed to drive low current lamps, interface with discrete components, and to facilitate implementation of the "implied AND" function.



GND PIN 7  
 V<sub>CC</sub> PIN 14

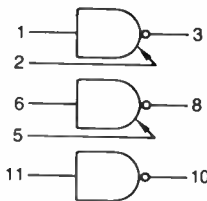
**HEP C0909P** CASE TO-116  
**HTL QUAD 2-INPUT NAND GATE (ACTIVE OUTPUT PULLUP)**



GND PIN 7  
 V<sub>CC</sub> PIN 14

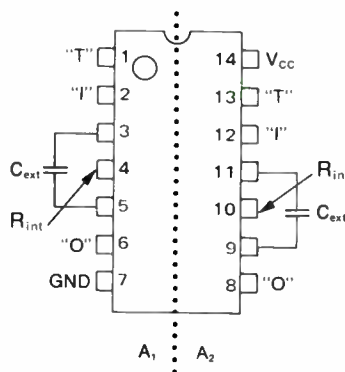
**HEP C0910P** CASE TO-116  
**HTL TRIPLE LEVEL TRANSLATOR**

Translation to DTL or TTL levels is obtained by applying 5.0 volts to terminal 13 and leaving pins 4, 9, and 12 open. Translation to RTL is achieved by applying 3.6 volts to pins 4, 9, and 12; pin 13 may be left open.



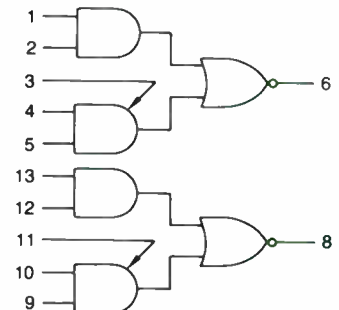
GND PIN 7  
 V<sub>CC</sub> PIN 14

**HEP C0911P** CASE TO-116  
**HTL DUAL MONOSTABLE MULTIVIBRATOR**



GND PIN 7  
 V<sub>CC</sub> PIN 14

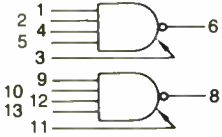
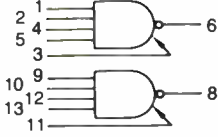
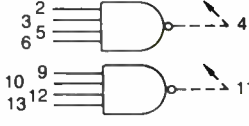
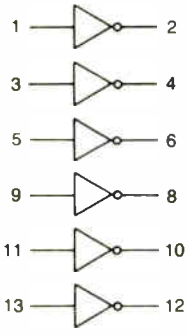
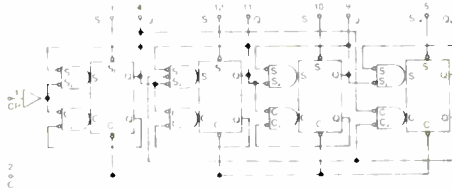
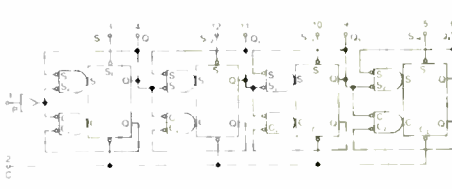
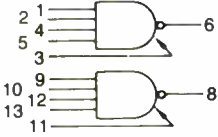
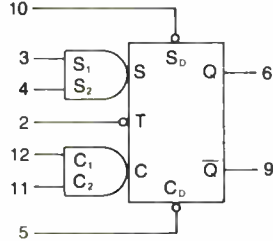
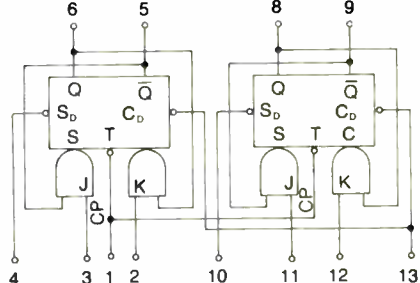
**HEP C0912P** CASE TO-116  
**HTL INTEGRATED CIRCUIT EXPANDABLE DUAL 2-WIDE 2-INPUT "AND-OR-INVERT" GATE**

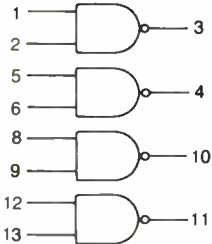
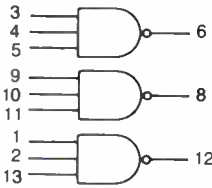
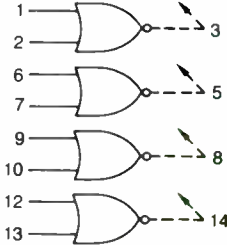
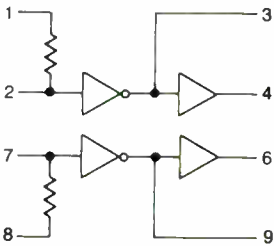
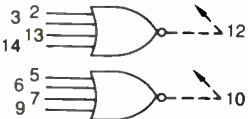
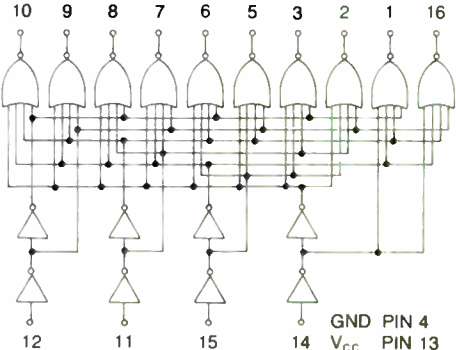
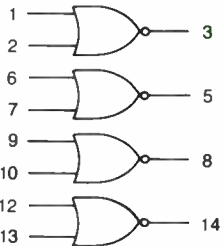
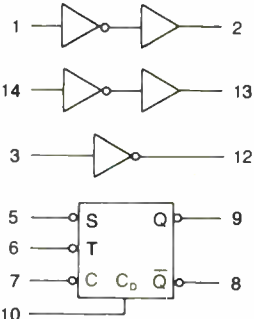
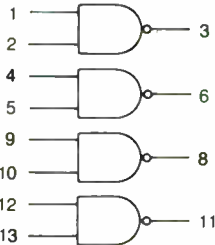


GND PIN 7  
 V<sub>CC</sub> PIN 14

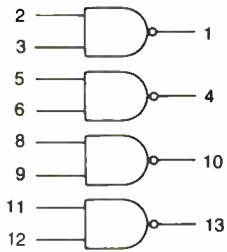
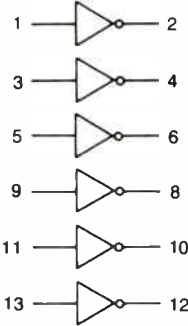
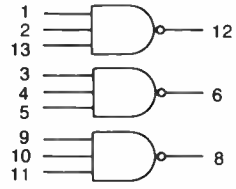
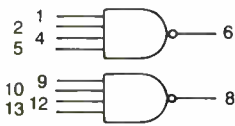
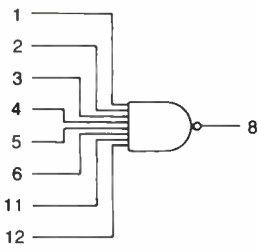
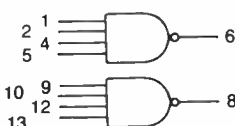
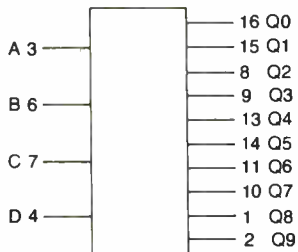
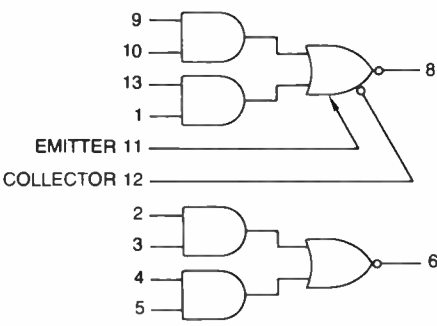
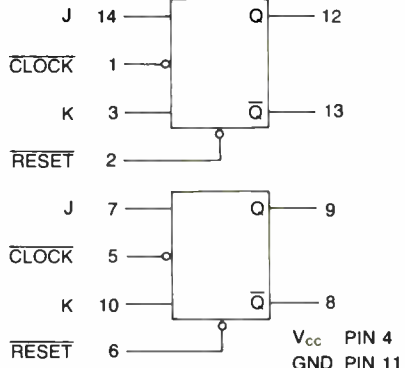


# HEP Integrated Circuit Function Chart

|   |  |   |
|---|--|---|
| <p><b>HEP C1030P</b> CASE TO-116<br/>DTL EXPANDABLE DUAL 4-INPUT "NAND" GATE</p> <p>The elements may be cross-coupled to form a bistable multivibrator, or the outputs may be connected in parallel to perform the logic "OR" function.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  | <p><b>HEP C1032P</b> CASE TO-116<br/>DTL EXPANDABLE DUAL 4-INPUT BUFFER</p> <p>These units are designed especially for driving large capacitive loads at high speeds.</p>  <p>OUTPUTS MAY NOT BE TIED TOGETHER</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>                                     | <p><b>HEP C1033P</b> CASE TO-116<br/>DTL DUAL 4-INPUT EXPANDER</p> <p>Increases the fan-in capability of other DTL devices to a maximum of 20 while having only a slight affect on performance.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  |
| <p><b>HEP C1035P</b> CASE TO-116<br/>DTL HEX INVERTER</p> <p>This hex inverter with no output pullup resistors, is useful in low-voltage applications such as lamp and/or relay drivers and interfacing with discrete component systems.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  | <p><b>HEP C1038P</b> CASE TO-116<br/>DTL DECADE COUNTER</p> <p>The outputs of this device correspond to a standard 8-4-2-1 BCD with individual direct sets and a common direct clear available to preset the counter to any desired condition.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> | <p><b>HEP C1039P</b> CASE TO-116<br/>DTL DIVIDE-BY-SIXTEEN COUNTER</p> <p>The outputs of this device correspond to a standard 8-4-2-1 binary code with individual direct sets and a common direct clear available to preset the counter to any desired condition.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>                                    |
| <p><b>HEP C1044P</b> CASE TO-116<br/>DTL EXPANDABLE DUAL 4-INPUT POWER GATE</p> <p>A dual NAND power gate with an output transistor capable of sinking more current than standard gate elements.</p>  <p>INPUTS AND OUTPUTS MAY BE TIED TOGETHER FOR INCREASED CURRENT CAPABILITY</p> <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> | <p><b>HEP C1045P</b> CASE TO-116<br/>DTL CLOCKED FLIP-FLOP</p> <p>Two direct coupled flip-flops operating on the "master-slave" principle. This flip-flop can be operated in either the R-S or J-K mode.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  | <p><b>HEP C1052P</b> CASE TO-116<br/>DTL DUAL J-K FLIP-FLOP</p> <p>Two directly coupled J-K flip-flops operating on the "master-slave" principle. Operation depends only on voltage levels, so the rise and fall times of the input clock are unimportant in determining the state of the flip-flop.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p> |

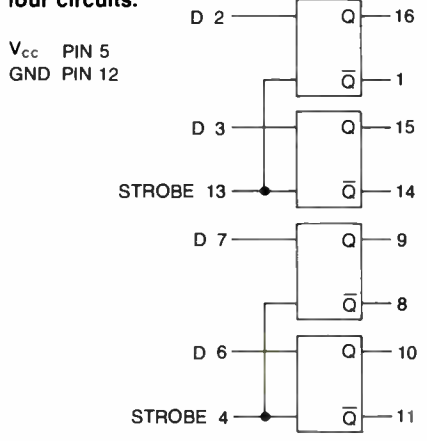
|   |  |   |
|---|--|---|
| <p><b>HEP C1058P</b> CASE TO-116<br/>DTL QUAD 2-INPUT "NAND" POWER GATE</p> <p>This device is capable of sinking more current than standard gates.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>   | <p><b>HEP C1062P</b> CASE TO-116<br/>DTL INTEGRATED CIRCUIT TRIPLE 3-INPUT NAND GATE</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>  | <p><b>HEP C2001P</b> CASE TO-116<br/>RTL QUAD 2-INPUT EXPANDER</p>  <p>GND PIN 4<br/>V<sub>CC</sub> PIN 11</p>   |
| <p><b>HEP C2002P</b> CASE TO-116<br/>RTL DUAL BUFFER</p>  <p>OUTPUTS 3 &amp; 4 OR 6 &amp; 9 MAY NOT BE USED SIMULTANEOUSLY</p> <p>GND PIN 4<br/>V<sub>CC</sub> PIN 14</p>   | <p><b>HEP C2500P</b> CASE TO-116<br/>RTL DUAL 4-INPUT EXPANDER</p> <p>Each may be used independently or combined.</p>  <p>GND PIN 4<br/>V<sub>CC</sub> PIN 11</p>   | <p><b>HEP C2501P</b> CASE 612<br/>RTL BCD-TO-DECIMAL DECODER</p> <p>Eight inverters and ten 4-input NOR gates that are utilized to convert BCD (8-4-2-1) input to an output, via the appropriate one of ten output lines.</p>  <p>GND PIN 4<br/>V<sub>CC</sub> PIN 13</p> |
| <p><b>HEP C2502P</b> CASE TO-116<br/>RTL QUAD 2-INPUT GATE</p> <p>Four 2-input NOR gates that may be used independently, paralleled for increasing the number of inputs, or cross-coupled to form bistable elements.</p>  <p>GND PIN 4<br/>V<sub>CC</sub> PIN 11</p> | <p><b>HEP C2503P</b> CASE TO-116<br/>RTL MULTIFUNCTION DEVICE</p> <p>A medium-power monolithic device consisting of one J-K flip-flop, one inverter, and two buffer circuits in a single package.</p>  <p>GND PIN 4<br/>V<sub>CC</sub> PIN 11</p> | <p><b>HEP C3000P</b> CASE TO-116<br/>TTL QUAD 2-INPUT "NAND" GATE</p> <p>Each gate may be used as an inverter, or two gates may be cross-coupled to form a bistable element.</p>  <p>GND PIN 7<br/>V<sub>CC</sub> PIN 14</p>   |

# HEP Integrated Circuit Function Chart

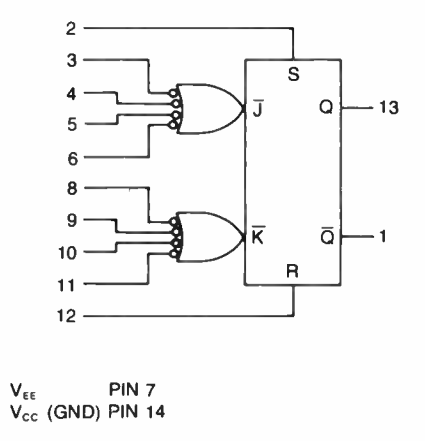
|  |  |   |
|--|--|---|
| <p><b>HEP C3001P</b> CASE 70-116<br/>TTL QUAD 2-INPUT NAND GATE WITH OPEN COLLECTOR</p> <p>This device consists of four 2-input NAND gates with no output pullup circuits. It can be used where the Wired-OR function is required, or for driving discrete components.</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>                | <p><b>HEP C3004P</b> CASE TO-116<br/>TTL HEX INVERTER</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>   | <p><b>HEP C3010P</b> CASE TO-116<br/>TTL TRIPLE 3-INPUT "NAND" GATE</p> <p>Each gate may be used as an inverter, or two gates may be cross-coupled to form bistable circuits.</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>  |
| <p><b>HEP C3020P</b> CASE TO-116<br/>TTL DUAL 4-INPUT "NAND" GATE</p> <p>These gates may be cross-coupled for form a Set-Reset flip-flop.</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>   | <p><b>HEP C3030P</b> CASE TO-116<br/>TTL 8-INPUT "NAND" GATE</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>                                   | <p><b>HEP C3040P</b> CASE TO-116<br/>TTL DUAL 4-INPUT "NAND" BUFFER</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p>  |
| <p><b>HEP C3041P</b> CASE 612<br/>TTL BCD-TO-DECIMAL DECODER AND HIGH LEVEL DRIVER</p> <p>This monolithic device is a BCD to one-of-ten decoder with high-level outputs capable of driving gas filled cold-cathode indicator tubes or other devices requiring high-voltage drivers.</p>  <p>V<sub>cc</sub> PIN 5<br/>GND PIN 12</p> | <p><b>HEP C3050P</b> CASE TO-116<br/>TTL EXPANDABLE DUAL 2-WIDE 2-INPUT "AND-OR-INVERT" GATE</p>  <p>GND PIN 7<br/>V<sub>cc</sub> PIN 14</p> | <p><b>HEP C3073P</b> CASE TO-116<br/>TTL DUAL J-K FLIP-FLOP</p> <p>Dual J-K flip-flop operates on the master-slave principle. The device is quite useful for simple registers and counters where multiple J and K inputs are not required.</p>  <p>V<sub>cc</sub> PIN 4<br/>GND PIN 11</p> |

**HEP C3075P** CASE 612  
TTL QUAD LATCH

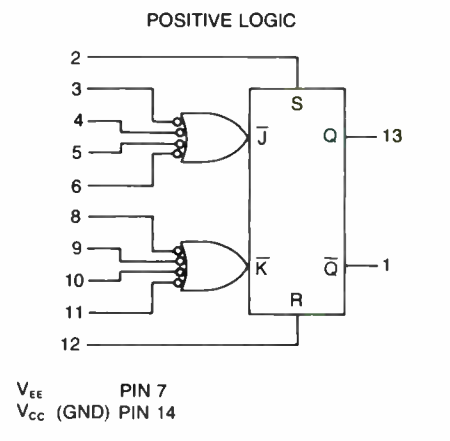
Both Q and  $\bar{Q}$  outputs are available on all four circuits.



**HEP C3400P** CASE TO-116  
ECL II 85-MHz AC-COUPLED J-K FLIP-FLOP

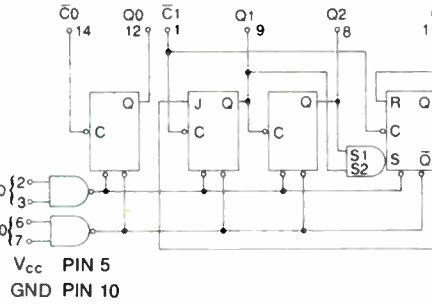


**HEP C3401P** CASE TO-116  
ECL II 120-MHz AC-COUPLED J-K FLIP-FLOP



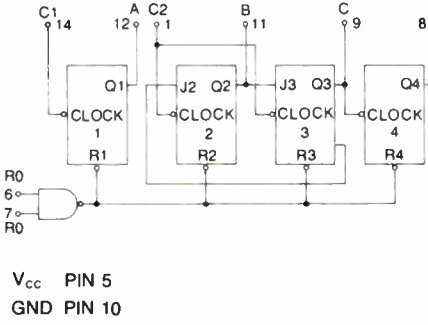
**HEP C3800P** CASE TO-116  
DECADE COUNTER COMPATIBLE WITH ALL TTL & DTL

Comprised of a divide-by-two section and a divide-by-five section. These sections can be used independently, or can be connected to perform the counting function or the simple divide-by-ten function with an output duty cycle of 50%.

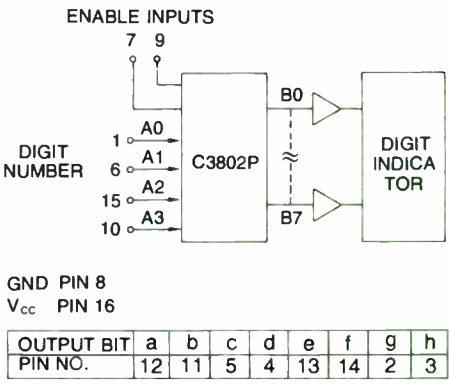


**HEP C3801P** CASE TO-116  
TTL DIVIDE-BY-TWELVE COUNTER

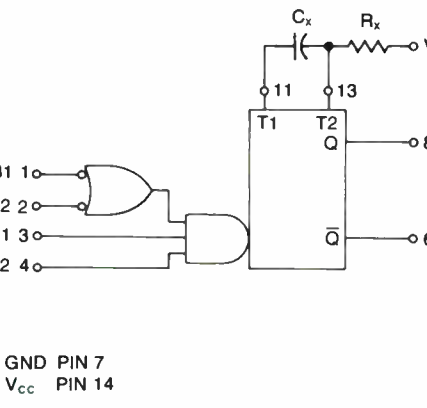
Comprised of a divide-by-two section and a divide-by-six section. These sections can be used independently, or can be connected to perform the divide-by-twelve function.



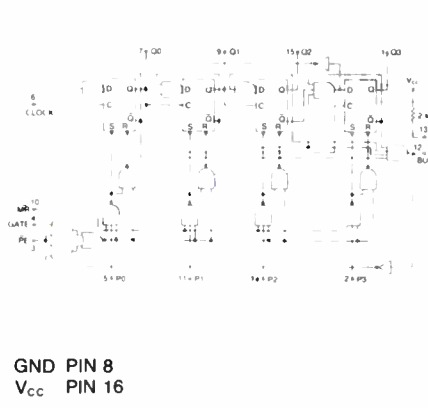
**HEP C3802P** CASE 612  
TTL SEVEN SEGMENT CHARACTER GENERATOR



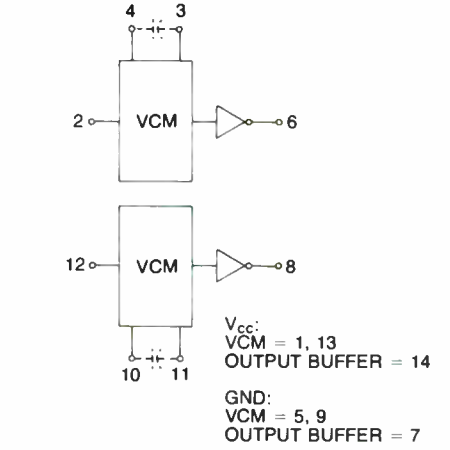
**HEP C3803P** CASE TO-116  
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR



**HEP C3804P** CASE 612  
TTL PROGRAMMABLE MODULO-N DECADE COUNTER



**HEP C3805P** CASE TO-116  
TTL DUAL VOLTAGE CONTROLLED MULTIVIBRATOR

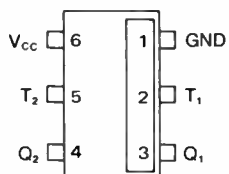


# HEP Integrated Circuit Function Chart

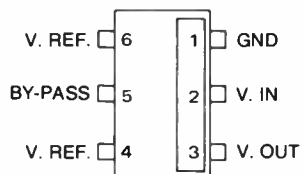
|   |  |   |
|---|--|---|
| <p><b>HEP C3806P</b> CASE TO-116<br/>TTL PHASE-FREQUENCY DETECTOR</p> <p>PHASE-FREQ. DETECTOR 1</p> <p>PHASE-FREQ. DETECTOR 2</p> <p>CHARGE PUMP</p> <p>AMPLIFIER</p> <p>OUTPUT</p> <p><math>V_{cc}</math> PIN 14<br/>GND PIN 7</p> | <p><b>HEP C6001</b> CASE 643<br/>FM IF AMPLIFIER</p> <p>INPUT BY-PASS 6</p> <p>I.F. OUTPUT BY-PASS 5</p> <p>I.F. OUTPUT 4</p> <p>GND 1</p> <p>I.F. INPUT 2</p> <p><math>V_{cc}</math> 3</p>                            | <p><b>HEP C6002</b> CASE 644<br/>LOW NOISE PREAMPLIFIER</p> <p>ROLL-OFF 4</p> <p>INPUT 3</p> <p>INPUT-BIAS 2</p> <p>GND 1</p> <p>BY-PASS 5</p> <p><math>V_{cc}</math> 6</p> <p>OUTPUT 7</p> <p>OUTPUT 8</p> |
| <p><b>HEP C6003</b> CASE 206A<br/>1/4 WATT AUDIO AMPLIFIER</p> <p>OUTPUT 4</p> <p><math>V_{cc}</math> 3</p> <p>GND 1</p> <p>INPUT 2</p>   | <p><b>HEP C6004</b> CASE 644<br/>1 WATT AUDIO AMPLIFIER</p> <p>INPUT 4</p> <p>FEEDBACK 3</p> <p>ROLL-OFF 2</p> <p>GND 1</p> <p>PRE-AMP BIAS 5</p> <p>POWER-AMP BIAS 6</p> <p><math>V_{cc}</math> 7</p> <p>OUTPUT 8</p> | <p><b>HEP C6007</b> CASE 206A<br/>SINGLE TOGGLE FLIP-FLOP<br/>TTL AND DTL COMPATIBLE</p> <p>T 4</p> <p>Q 3</p> <p>GND 1</p> <p><math>V_{cc}</math> 2</p>  |
| <p><b>HEP C6008</b> CASE 643A<br/>1 WATT AUDIO POWER AMPLIFIER</p> <p>OUTPUT 6</p> <p><math>V_{cc}</math> 5</p> <p>BIAS 4</p> <p>GND 1</p> <p>INPUT-1 2</p> <p>INPUT-2 3</p>  | <p><b>HEP C6009</b> CASE 643A<br/>ELECTRONIC ATTENUATOR</p> <p>ROLL OFF 6</p> <p>OUTPUT 5</p> <p><math>V_{cc}</math> 4</p> <p>GND 1</p> <p>CONTROL VOLTAGE 2</p> <p>INPUT 3</p>  | <p><b>HEP C6010</b> CASE 206A<br/>WIDE BAND AMPLIFIER</p> <p>INPUT 4</p> <p><math>V_{cc}</math> 3</p> <p>GND 1</p> <p>OUTPUT 2</p>  |



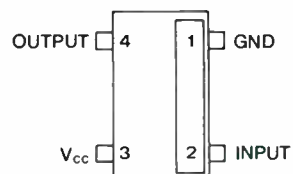
**HEP C6011** CASE 643A  
**DUAL TOGGLE FLIP-FLOP**  
 TTL AND DTL COMPATIBLE



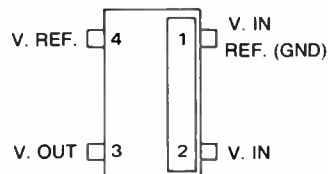
**HEP C6012** CASE 643A  
**VOLTAGE REGULATOR**



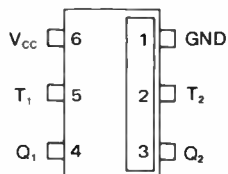
**HEP C6013** CASE 206A  
**CLASS "A" AUDIO DRIVER**



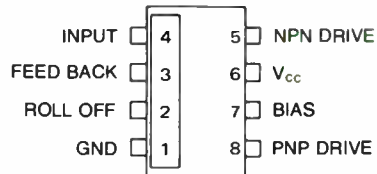
**HEP C6014** CASE 206A  
**VOLTAGE REGULATOR**



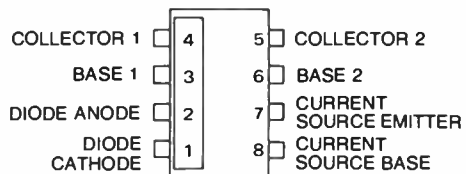
**HEP C6015** CASE 643A  
**DUAL TOGGLE FLIP-FLOP WITH RESET**  
 TTL AND DTL COMPATIBLE



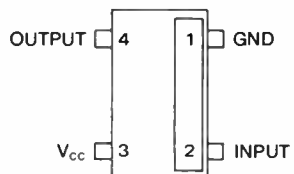
**HEP C6016** CASE 644A  
**CLASS B AUDIO DRIVER**



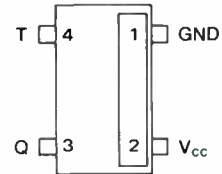
**HEP C6017** CASE 644A  
**DIFFERENTIAL/CASCODE AMPLIFIER**



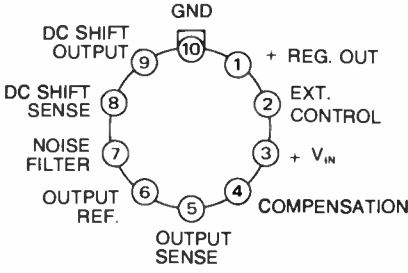
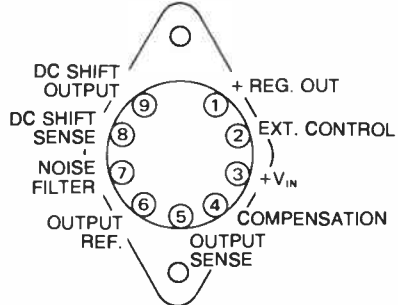
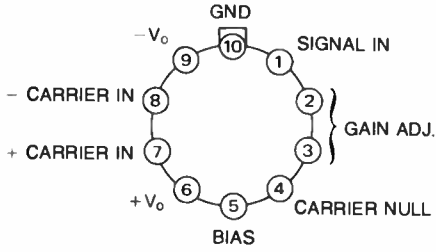
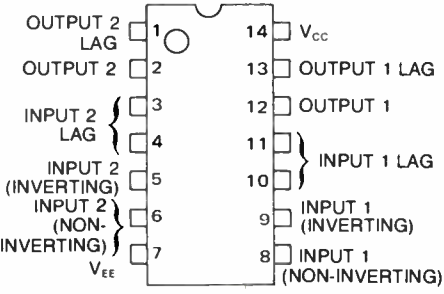
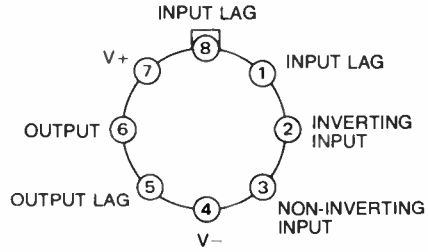
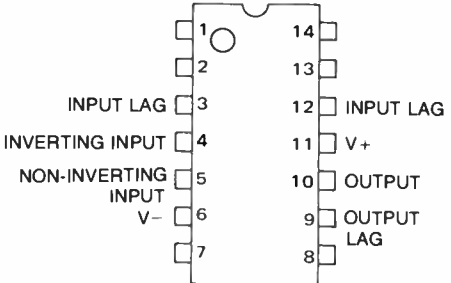
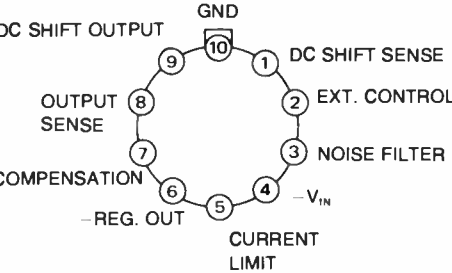
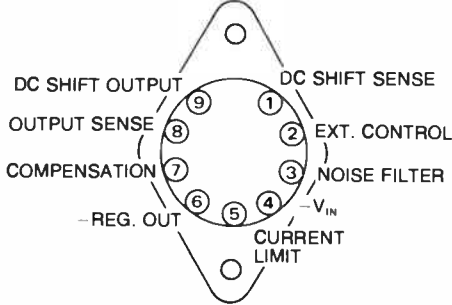
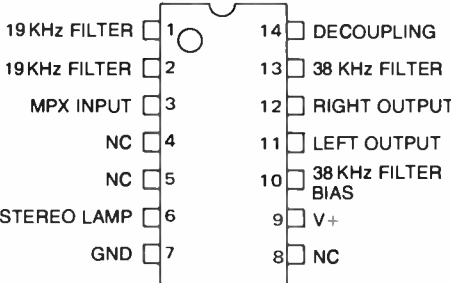
**HEP C6018** CASE 206A  
**CLASS A AUDIO DRIVER**

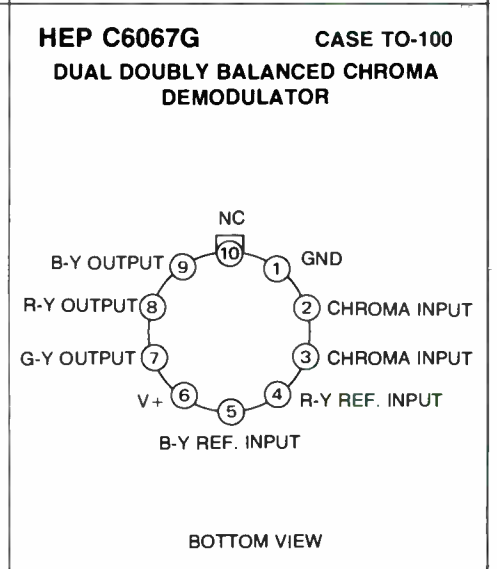
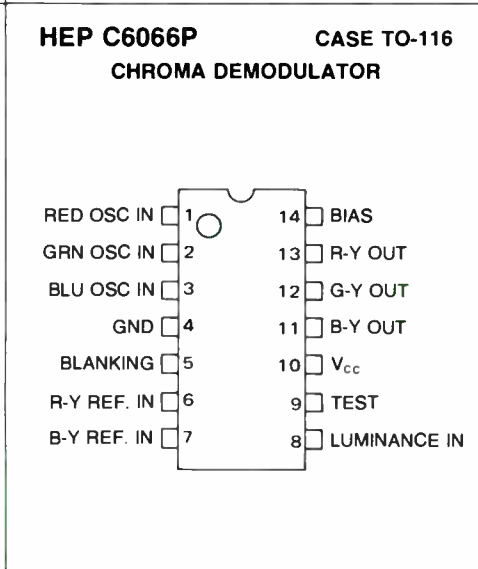
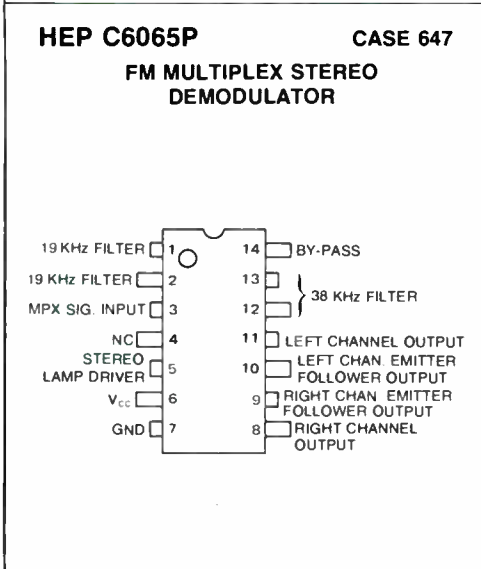
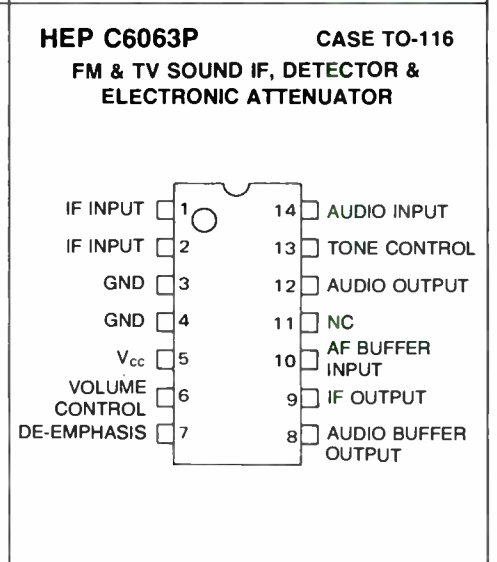
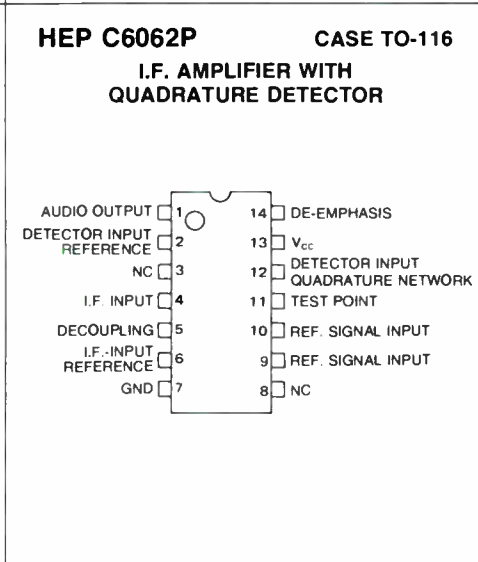
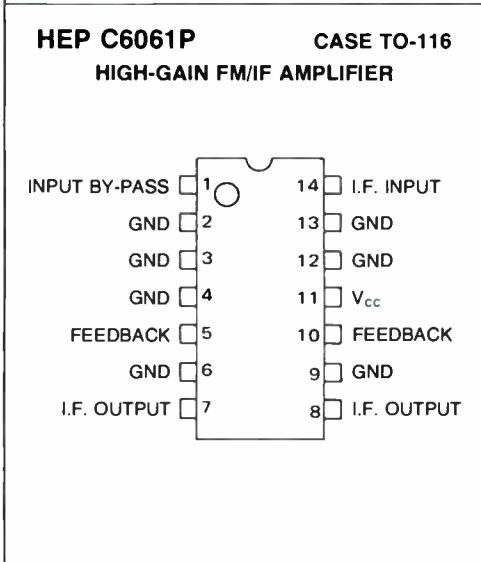
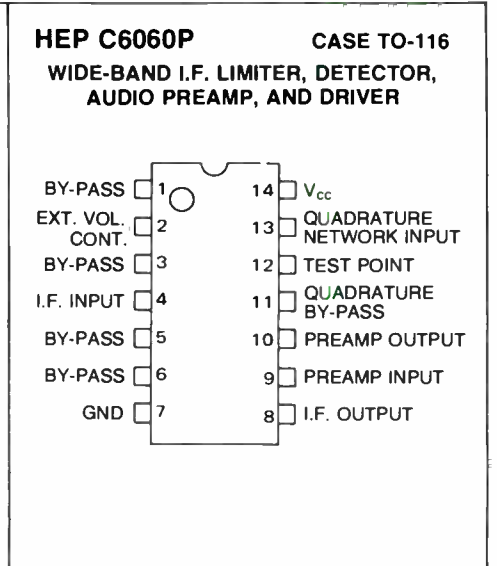
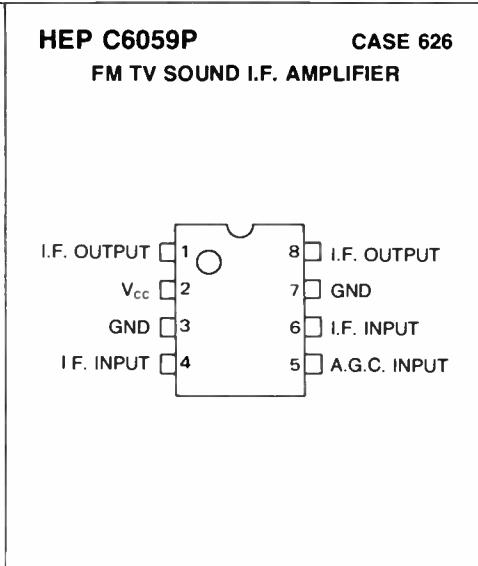
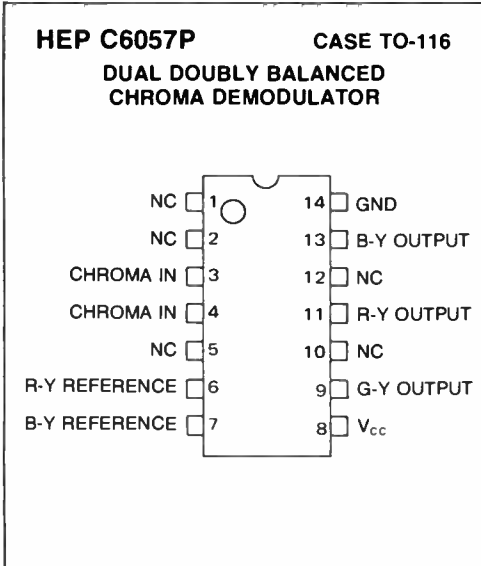


**HEP C6019** CASE 206A  
**SINGLE TOGGLE FLIP-FLOP**  
 TTL AND DTL COMPATIBLE

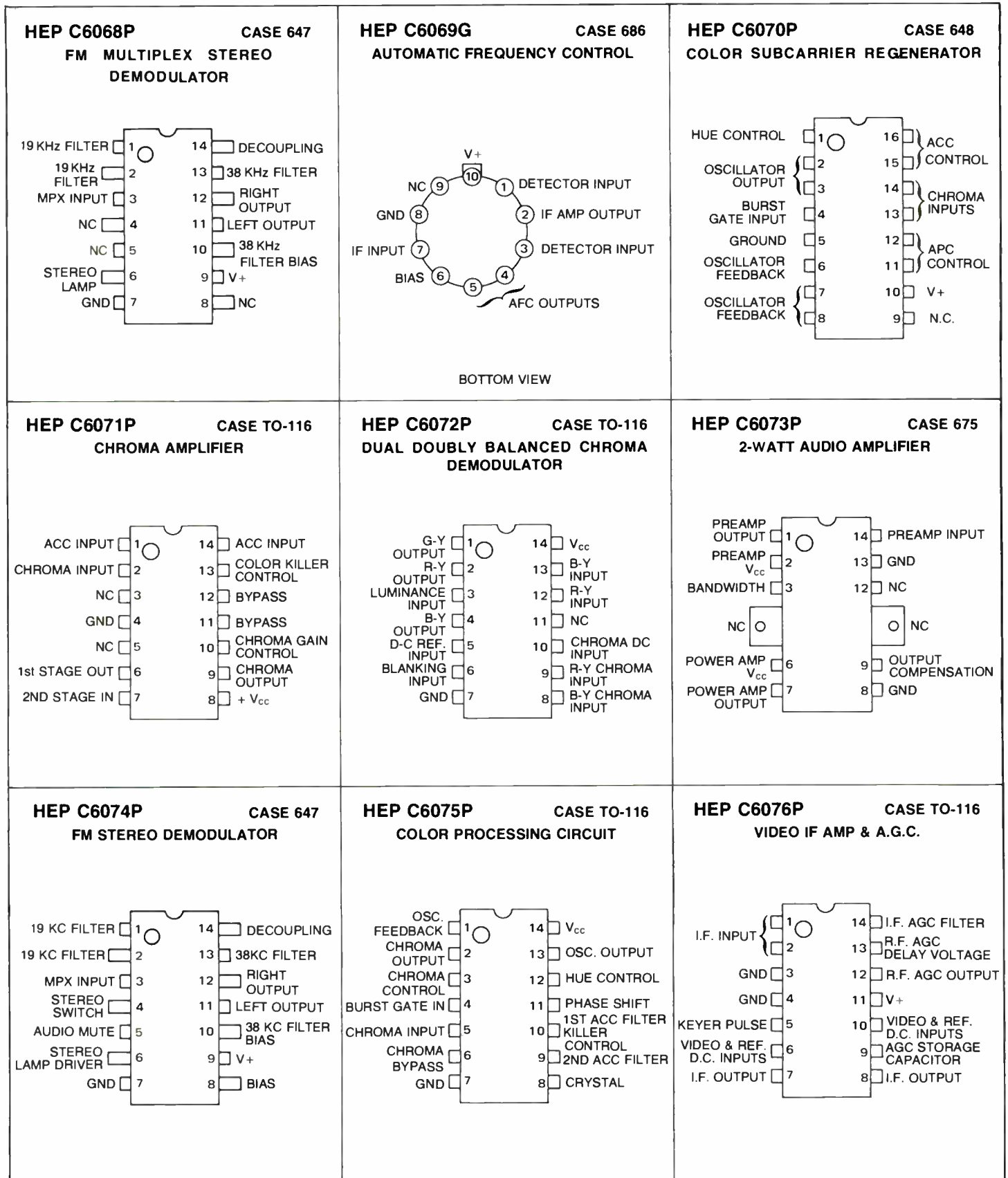


# HEP Integrated Circuit Function Chart

|   |  |  |
|---|--|--|
| <p><b>HEP C6049G</b>      <b>CASE 602A</b><br/><b>POSITIVE VOLTAGE REGULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW</p>                       | <p><b>HEP C6049R</b>      <b>CASE 614</b><br/><b>POSITIVE VOLTAGE REGULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW      CASE IS GROUND</p>   | <p><b>HEP C6050G</b>      <b>CASE 602A</b><br/><b>BALANCED<br/>MODULATOR-DEMODULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW</p>      |
| <p><b>HEP C6051L</b>      <b>CASE TO-116</b><br/><b>HIGHLY MATCHED DUAL<br/>OPERATIONAL AMPLIFIERS</b></p>  <p style="text-align: center;">BOTTOM VIEW</p> | <p><b>HEP C6053G</b>      <b>CASE TO-99</b><br/><b>OPERATIONAL AMPLIFIER</b></p>  <p style="text-align: center;">BOTTOM VIEW</p>                         | <p><b>HEP C6053L</b>      <b>CASE TO-116</b><br/><b>OPERATIONAL AMPLIFIER</b></p>  <p style="text-align: center;">BOTTOM VIEW</p>                |
| <p><b>HEP C6054G</b>      <b>CASE 602A</b><br/><b>NEGATIVE VOLTAGE REGULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW</p>                      | <p><b>HEP C6054R</b>      <b>CASE 614</b><br/><b>NEGATIVE VOLTAGE REGULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW      CASE IS GROUND</p> | <p><b>HEP C6056P</b>      <b>CASE TO-116</b><br/><b>FM MULTIPLEX STEREO<br/>DEMODULATOR</b></p>  <p style="text-align: center;">BOTTOM VIEW</p> |



# HEP Integrated Circuit Function Chart



**HEP C6077P** CASE TO-116  
**COLOR PROCESSING CIRCUIT**

BY-PASS 1 14 3.58 MHz OSC. OUT  
 3.58 MHz XTAL & REACTANCE 2 13 "Z" REF. IN  
 BIAS 3 12 "X" REF. IN  
 APC REF. 4 11 GND  
 ACC REF. 5 10 "X" OUT  
 +V<sub>cc</sub> 6 9 "Z" OUT  
 CHROMA-INPUT 7 8 BY-PASS

**HEP C6078R** CASE 614  
**POWER BOOSTER**

INPUT 9 1 BY-PASS  
 V+ 8 2 NEG. CURRENT LIMIT ADJ.  
 POS. CURRENT LIMIT ADJ. 7 3 NEG. OUTPUT  
 POS. OUTPUT 6 4 NEG. CURRENT SENSE  
 POS. CURRENT SENSE 5

BOTTOM VIEW CASE IS GROUND

**HEP C6079P** CASE 626  
**VIDEO DETECTOR**

AFT BUFFER OUTPUT 1 8 GND  
 TUNED CIRCUIT 2 7 I.F. INPUT  
 TUNED CIRCUIT 3 6 V+  
 PRIMARY VIDEO OUTPUT 4 5 AUXILIARY VIDEO OUTPUT

**HEP C6080P** CASE TO-116  
**LOW-NOISE STEREO PREAMPLIFIER**

V<sub>cc</sub> 1 14 AMP. GND  
 +7.5V ZENER 2 13 VOLTAGE REG. GND  
 FEEDBACK CH.1 3 12 FEEDBACK CH. 2  
 ROLL-OFF CH.1 4 11 ROLL-OFF CH. 2  
 OUTPUT CH. 1 5 10 OUTPUT CH. 2  
 INPUT RETURN CH. 1 6 9 INPUT RETURN CH. 2  
 INPUT CH.1 7 8 INPUT CH. 2

**HEP C6082P** CASE 647  
**IF AMPLIFIER WITH QUADRATURE DETECTOR**

AUDIO OUTPUT 1 14 DE-EMPHASIS  
 DETECTOR INPUT REFERENCE 2 13 V<sub>cc</sub>  
 NC 3 12 DETECTOR INPUT QUADRATURE NETWORK  
 IF INPUT 4 11 TEST POINT  
 DECOUPLING IF INPUT REFERENCE 5 10 } REF. SIGNAL INPUT  
 GND 6 9 }  
 GND 7 8 NC

**HEP C6083P** CASE 647  
**FM & TV SOUND IF, DETECTOR, & ELECTRONIC ATTENUATOR**

IF INPUT 1 14 AUDIO INPUT  
 IF INPUT 2 13 TONE CONTROL  
 GND 3 12 AUDIO OUTPUT  
 GND 4 11 NC  
 V<sub>cc</sub> 5 10 AF BUFFER INPUT  
 VOL. CONT 6 9 IF OUTPUT  
 DE-DEMPHASIS 7 8 AUDIO BUFFER OUTPUT

**HEP C6087P** CASE 647  
**STEREO PREAMPLIFIER**

NC 1 14 V<sub>cc</sub>  
 CH 1 INPUT 2 13 NC  
 CH 1 FEED BACK 3 12 CH 2 INPUT  
 CH 1 TONE 4 11 CH 2 FEED BACK  
 CH 1 BY PASS 5 10 CH 2 TONE  
 CH 1 OUTPUT 6 9 CH 2 BY PASS  
 GND 7 8 CH 2 OUTPUT

**HEP C6089** CASE 1A1  
**CHROMA DEMODULATOR**

B-Y OUT 9 1 GND  
 R-Y OUT 8 2 CHROMA  
 G-Y OUT 7 3 + CHROMA  
 V<sub>cc</sub> 6 4 R-Y REF. IN  
 B-Y REF. IN 5

BOTTOM VIEW

**HEP C6090** CASE 1A2  
**DUAL 2-WATT AUDIO AMPLIFIER**

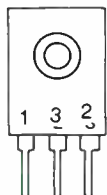
BIAS 1 14 V<sub>cc</sub>  
 OUTPUT CH 1 2 13 OUTPUT CH 2  
 GND 3 12 GND  
 GND 4 11 GND  
 INPUT CH 1 6 9 INPUT CH 2  
 FEEDBACK CH 1 7 8 FEEDBACK CH 2



# HEP Integrated Circuit Function Chart

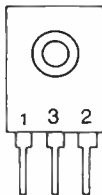
|   |  |   |
|---|--|---|
| <p><b>HEP C6096P</b> CASE 70-116<br/>FM STEREO DEMODULATOR</p>                            | <p><b>HEP C6099P</b> CASE 626<br/>IF AMPLIFIER</p>                   | <p><b>HEP C6100P</b> CASE TO-116<br/>T.V. AUTOMATIC FREQUENCY CONTROL</p> |
| <p><b>HEP C6101P</b> CASE 647<br/>FM IF AMP., LIMITER, DETECTOR,<br/>AND AUDIO PREAMP</p> | <p><b>HEP C6102P</b> CASE 626<br/>DUAL OPERATIONAL AMPLIFIER</p>     | <p><b>HEP C6103P</b> CASE 626<br/>OPERATIONAL AMPLIFIER</p>               |
| <p><b>HEP C6104L</b> CASE TO-116<br/>VOLTAGE REGULATOR</p>                                | <p><b>HEP C6105P</b> CASE 199 (A)<br/>POSITIVE VOLTAGE REGULATOR</p> | <p><b>HEP C6107P</b> CASE 626<br/>OPERATIONAL AMPLIFIER</p>               |

HEP C6110P = 5.0V CASE 199 (A)  
 HEP C6111P = 6.0V POSITIVE  
 HEP C6112P = 8.0V VOLTAGE  
 HEP C6113P = 12V REGULATOR  
 HEP C6114P = 15V  
 HEP C6115P = 18V  
 HEP C6116P = 24V



1. INPUT  
 2. OUTPUT  
 3. GROUND

HEP C6117P = 2.0V CASE 199 (B)  
 HEP C6118P = 5.0V NEGATIVE  
 HEP C6119P = 5.2V VOLTAGE  
 HEP C6120P = 6.0V REGULATOR  
 HEP C6121P = 8.0V  
 HEP C6122P = 12V  
 HEP C6123P = 15V  
 HEP C6124P = 18V  
 HEP C6125P = 24V



1. GROUND  
 2. OUTPUT  
 3. INPUT





| DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE  | HEP     | DEVICE | HEP |
|----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|---------|--------|-----|
| 1M303-04 | Z0402 | 1N110H | K9134 | 1N337  | K0052 | 1N492D | Z0444 | 1N032  | K9134 | 1N708A  | Z0220   |        |     |
| 1M303-02 | Z0400 | 1N113  | K9134 | 1N340  | K0052 | 1N493  | Z0414 | 1N030  | K9134 | 1N753   | Z0222   |        |     |
| 1M303-24 | Z0408 | 1N117H | K9134 | 1N341  | K0055 | 1N493D | Z0424 | 1N033H | K0052 | 1N754H  | Z0222   |        |     |
| 1M303-1  | Z0412 | 1N120  | K9134 | 1N342  | K0055 | 1N493D | Z0434 | 1N040  | K0055 | 1N700   | K9135   |        |     |
| 1M303-1A | Z0415 | 1N122  | K9134 | 1N343  | K0055 | 1N497  | Z0435 | 1N042H | K0052 | 1N70A   | Z0405   |        |     |
| 1N3012   | Z0417 | 1N124  | K9134 | 1N344  | K0055 | 1N498  | Z0434 | 1N042D | K0052 | 1N70A-C | Z0211   |        |     |
| 1N3012A  | Z0415 | 1N120  | K9134 | 1N345  | K0052 | 1N500  | Z0434 | 1N040  | K0055 | 1N70A-1 | Z0405   |        |     |
| 1N3024   | Z0417 | 1N122  | K9134 | 1N346  | K0052 | 1N503  | K0052 | 1N047  | K0054 | 1N70C-1 | Z0212   |        |     |
| 1N34     | K9134 | 1N127A | K9134 | 1N347  | K0131 | 1N504  | K0052 | 1N040  | K0054 | 1N705   | Z0220   |        |     |
| 1N34A    | K9134 | 1N120  | K9134 | 1N348  | K0052 | 1N505  | K0052 | 1N043  | K0054 | 1N705-1 | Z0220   |        |     |
| 1N34A-Z  | K9134 | 1N122  | K9134 | 1N349  | RJ052 | 1N506  | K0052 | 1N050  | K0054 | 1N700   | Z0416   |        |     |
| 1N34A3   | K9134 | 1N123  | K9134 | 1N350  | K0052 | 1N507  | K0052 | 1N053  | K0054 | 1N700-1 | Z0222   |        |     |
| 1N34B    | K9134 | 1N124  | K9134 | 1N351  | K0052 | 1N508  | K0052 | 1N056  | R0052 | 1N700-3 | Z0417   |        |     |
| 1N34C    | K9134 | 1N125  | K9134 | 1N352  | K0052 | 1N509  | Z0217 | 1N054  | K0050 | 1N700A  | Z0410   |        |     |
| 1N34D    | K9134 | 1N126  | K9134 | 1N353  | K0052 | 1N510  | K0052 | 1N057  | K0052 | 1N700-1 | Z0225   |        |     |
| 1N34E    | K9134 | 1N127  | K9134 | 1N354  | K0050 | 1N512  | Z0225 | 1N050  | 1N000 | 1N700-1 | Z0220   |        |     |
| 1N34F    | K9134 | 1N128  | K9134 | 1N355  | K0050 | 1N513  | Z0226 | 1N053  | K0052 | 1N700-3 | Z0230   |        |     |
| 1N34G    | K9134 | 1N129  | K9134 | 1N356  | K0052 | 1N514  | Z0231 | 1N056  | K0050 | 1N700-1 | Z0231   |        |     |
| 1N34H    | K9134 | 1N130  | K9134 | 1N357  | K0052 | 1N515  | Z0234 | 1N059  | K0053 | 1N700   | K9134   |        |     |
| 1N34I    | K9134 | 1N131  | K9134 | 1N358  | K0052 | 1N516  | K0052 | 1N062  | K0053 | 1N700   | K9134   |        |     |
| 1N34J    | K9134 | 1N132  | K9134 | 1N359  | K0052 | 1N517  | K0052 | 1N065  | K0053 | 1N700   | K9134   |        |     |
| 1N34K    | K9134 | 1N133  | K9134 | 1N360  | K0052 | 1N518  | K0052 | 1N068  | K0053 | 1N700   | K9134   |        |     |
| 1N34L    | K9134 | 1N134  | K9134 | 1N361  | K0052 | 1N519  | K0052 | 1N071  | K0053 | 1N700   | K9134   |        |     |
| 1N34M    | K9134 | 1N135  | K9134 | 1N362  | K0052 | 1N520  | K0052 | 1N074  | K0053 | 1N700   | K9134   |        |     |
| 1N34N    | K9134 | 1N136  | K9134 | 1N363  | K0052 | 1N521  | K0052 | 1N077  | K0052 | 1N700   | K9134   |        |     |
| 1N34O    | K9134 | 1N137  | K9134 | 1N364  | K0052 | 1N522  | K0052 | 1N080  | K0052 | 1N700   | K9134   |        |     |
| 1N34P    | K9134 | 1N138  | K9134 | 1N365  | K0052 | 1N523  | K0052 | 1N083  | K0052 | 1N700   | K9134   |        |     |
| 1N34Q    | K9134 | 1N139  | K9134 | 1N366  | K0052 | 1N524  | K0052 | 1N086  | K0053 | 1N700   | K9134   |        |     |
| 1N34R    | K9134 | 1N140  | K9134 | 1N367  | K0052 | 1N525  | K0052 | 1N089  | K0053 | 1N700   | K9134   |        |     |
| 1N34S    | K9134 | 1N141  | K9134 | 1N368  | K0052 | 1N526  | K0052 | 1N092  | K0053 | 1N700   | K9134   |        |     |
| 1N34T    | K9134 | 1N142  | K9134 | 1N369  | K0052 | 1N527  | K0052 | 1N095  | K0053 | 1N700   | K9134   |        |     |
| 1N34U    | K9134 | 1N143  | K9134 | 1N370  | K0052 | 1N528  | K0052 | 1N098  | K0053 | 1N700   | K9134   |        |     |
| 1N34V    | K9134 | 1N144  | K9134 | 1N371  | K0052 | 1N529  | K0052 | 1N101  | K0053 | 1N700   | K9134   |        |     |
| 1N34W    | K9134 | 1N145  | K9134 | 1N372  | K0052 | 1N530  | K0052 | 1N104  | K0053 | 1N700   | K9134   |        |     |
| 1N34X    | K9134 | 1N146  | K9134 | 1N373  | K0052 | 1N531  | K0052 | 1N107  | K0053 | 1N700   | K9134   |        |     |
| 1N34Y    | K9134 | 1N147  | K9134 | 1N374  | K0052 | 1N532  | K0052 | 1N110  | K0053 | 1N700   | K9134   |        |     |
| 1N34Z    | K9134 | 1N148  | K9134 | 1N375  | K0052 | 1N533  | K0052 | 1N113  | K0053 | 1N700   | K9134   |        |     |
| 1N35     | K9134 | 1N149  | K9134 | 1N376  | K0052 | 1N534  | K0052 | 1N116  | K0053 | 1N700   | K9134   |        |     |
| 1N35A    | K9134 | 1N150  | K9134 | 1N377  | K0052 | 1N535  | K0052 | 1N119  | K0053 | 1N700   | K9134   |        |     |
| 1N35B    | K9134 | 1N151  | K9134 | 1N378  | K0052 | 1N536  | K0052 | 1N122  | K0053 | 1N700   | K9134   |        |     |
| 1N35C    | K9134 | 1N152  | K9134 | 1N379  | K0052 | 1N537  | K0052 | 1N125  | K0053 | 1N700   | K9134   |        |     |
| 1N35D    | K9134 | 1N153  | K9134 | 1N380  | K0052 | 1N538  | K0052 | 1N128  | K0053 | 1N700   | K9134   |        |     |
| 1N35E    | K9134 | 1N154  | K9134 | 1N381  | K0052 | 1N539  | K0052 | 1N131  | K0053 | 1N700   | K9134   |        |     |
| 1N35F    | K9134 | 1N155  | K9134 | 1N382  | K0052 | 1N540  | K0052 | 1N134  | K0053 | 1N700   | K9134   |        |     |
| 1N35G    | K9134 | 1N156  | K9134 | 1N383  | K0052 | 1N541  | K0052 | 1N137  | K0053 | 1N700   | K9134   |        |     |
| 1N35H    | K9134 | 1N157  | K9134 | 1N384  | K0052 | 1N542  | K0052 | 1N140  | K0053 | 1N700   | K9134   |        |     |
| 1N35I    | K9134 | 1N158  | K9134 | 1N385  | K0052 | 1N543  | K0052 | 1N143  | K0053 | 1N700   | K9134   |        |     |
| 1N35J    | K9134 | 1N159  | K9134 | 1N386  | K0052 | 1N544  | K0052 | 1N146  | K0053 | 1N700   | K9134   |        |     |
| 1N35K    | K9134 | 1N160  | K9134 | 1N387  | K0052 | 1N545  | K0052 | 1N149  | K0053 | 1N700   | K9134   |        |     |
| 1N35L    | K9134 | 1N161  | K9134 | 1N388  | K0052 | 1N546  | K0052 | 1N152  | K0053 | 1N700   | K9134   |        |     |
| 1N35M    | K9134 | 1N162  | K9134 | 1N389  | K0052 | 1N547  | K0052 | 1N155  | K0053 | 1N700   | K9134   |        |     |
| 1N35N    | K9134 | 1N163  | K9134 | 1N390  | K0052 | 1N548  | K0052 | 1N158  | K0053 | 1N700   | K9134   |        |     |
| 1N35O    | K9134 | 1N164  | K9134 | 1N391  | K0052 | 1N549  | K0052 | 1N161  | K0053 | 1N700   | K9134   |        |     |
| 1N35P    | K9134 | 1N165  | K9134 | 1N392  | K0052 | 1N550  | K0052 | 1N164  | K0053 | 1N700   | K9134   |        |     |
| 1N35Q    | K9134 | 1N166  | K9134 | 1N393  | K0052 | 1N551  | K0052 | 1N167  | K0053 | 1N700   | K9134   |        |     |
| 1N35R    | K9134 | 1N167  | K9134 | 1N394  | K0052 | 1N552  | K0052 | 1N170  | K0053 | 1N700   | K9134   |        |     |
| 1N35S    | K9134 | 1N168  | K9134 | 1N395  | K0052 | 1N553  | K0052 | 1N173  | K0053 | 1N700   | K9134   |        |     |
| 1N35T    | K9134 | 1N169  | K9134 | 1N396  | K0052 | 1N554  | K0052 | 1N176  | K0053 | 1N700   | K9134   |        |     |
| 1N35U    | K9134 | 1N170  | K9134 | 1N397  | K0052 | 1N555  | K0052 | 1N179  | K0053 | 1N700   | K9134   |        |     |
| 1N35V    | K9134 | 1N171  | K9134 | 1N398  | K0052 | 1N556  | K0052 | 1N182  | K0053 | 1N700   | K9134   |        |     |
| 1N35W    | K9134 | 1N172  | K9134 | 1N399  | K0052 | 1N557  | K0052 | 1N185  | K0053 | 1N700   | K9134   |        |     |
| 1N35X    | K9134 | 1N173  | K9134 | 1N400  | K0052 | 1N558  | K0052 | 1N188  | K0053 | 1N700   | K9134   |        |     |
| 1N35Y    | K9134 | 1N174  | K9134 | 1N401  | K0052 | 1N559  | K0052 | 1N191  | K0053 | 1N700   | K9134   |        |     |
| 1N35Z    | K9134 | 1N175  | K9134 | 1N402  | K0052 | 1N560  | K0052 | 1N194  | K0053 | 1N700   | K9134   |        |     |
| 1N36     | K9134 | 1N176  | K9134 | 1N403  | K0052 | 1N561  | K0052 | 1N197  | K0053 | 1N700   | K9134   |        |     |
| 1N36A    | K9134 | 1N177  | K9134 | 1N404  | K0052 | 1N562  | K0052 | 1N200  | K0053 | 1N700   | K9134   |        |     |
| 1N36B    | K9134 | 1N178  | K9134 | 1N405  | K0052 | 1N563  | K0052 | 1N203  | K0053 | 1N700   | K9134   |        |     |
| 1N36C    | K9134 | 1N179  | K9134 | 1N406  | K0052 | 1N564  | K0052 | 1N206  | K0053 | 1N700   | K9134   |        |     |
| 1N36D    | K9134 | 1N180  | K9134 | 1N407  | K0052 | 1N565  | K0052 | 1N209  | K0053 | 1N700   | K9134   |        |     |
| 1N36E    | K9134 | 1N181  | K9134 | 1N408  | K0052 | 1N566  | K0052 | 1N212  | K0053 | 1N700   | K9134   |        |     |
| 1N36F    | K9134 | 1N182  | K9134 | 1N409  | K0052 | 1N567  | K0052 | 1N215  | K0053 | 1N700   | K9134   |        |     |
| 1N36G    | K9134 | 1N183  | K9134 | 1N410  | K0052 | 1N568  | K0052 | 1N218  | K0053 | 1N700   | K9134   |        |     |
| 1N36H    | K9134 | 1N184  | K9134 | 1N411  | K0052 | 1N569  | K0052 | 1N221  | K0053 | 1N700   | K9134   |        |     |
| 1N36I    | K9134 | 1N185  | K9134 | 1N412  | K0052 | 1N570  | K0052 | 1N224  | K0053 | 1N700   | K9134   |        |     |
| 1N36J    | K9134 | 1N186  | K9134 | 1N413  | K0052 | 1N571  | K0052 | 1N227  | K0053 | 1N700   | K9134   |        |     |
| 1N36K    | K9134 | 1N187  | K9134 | 1N414  | K0052 | 1N572  | K0052 | 1N230  | K0053 | 1N700   | K9134   |        |     |
| 1N36L    | K9134 | 1N188  | K9134 | 1N415  | K0052 | 1N573  | K0052 | 1N233  | K0053 | 1N700   | K9134   |        |     |
| 1N36M    | K9134 | 1N189  | K9134 | 1N416  | K0052 | 1N574  | K0052 | 1N236  | K0053 | 1N700   | K9134   |        |     |
| 1N36N    | K9134 | 1N190  | K9134 | 1N417  | K0052 | 1N575  | K0052 | 1N239  | K0053 | 1N700   | K9134   |        |     |
| 1N36O    | K9134 | 1N191  | K9134 | 1N418  | K0052 | 1N576  | K0052 | 1N242  | K0053 | 1N700   | K9134   |        |     |
| 1N36P    | K9134 | 1N192  | K9134 | 1N419  | K0052 | 1N577  | K0052 | 1N245  | K0053 | 1N700   | K9134   |        |     |
| 1N36Q    | K9134 | 1N193  | K9134 | 1N420  | K0052 | 1N578  | K0052 | 1N248  | K0053 | 1N700   | K9134   |        |     |
| 1N36R    | K9134 | 1N194  | K9134 | 1N421  | K0052 | 1N579  | K0052 | 1N251  | K0053 | 1N700   | K9134   |        |     |
| 1N36S    | K9134 | 1N195  | K9134 | 1N422  | K0052 | 1N580  | K0052 | 1N254  | K0053 | 1N700   | K9134   |        |     |
| 1N36T    | K9134 | 1N196  | K9134 | 1N423  | K0052 | 1N581  | K0052 | 1N257  | K0053 | 1N700   | K9134   |        |     |
| 1N36U    | K9134 | 1N197  | K9134 | 1N424  | K0052 | 1N582  | K0052 | 1N260  | K0053 | 1N700   | K9134   |        |     |
| 1N36V    | K9134 | 1N198  | K9134 | 1N425  | K0052 | 1N583  | K0052 | 1N263  | K0053 | 1N700   | K9134   |        |     |
| 1N36W    | K9134 | 1N199  | K9134 | 1N426  | K0052 | 1N584  | K0052 | 1N266  | K0053 | 1N700   | K9134   |        |     |
| 1N36X    | K9134 | 1N200  | K9134 | 1N427  | K0052 | 1N585  | K0052 | 1N269  | K0053 | 1N700   | K9134   |        |     |
| 1N36Y    | K9134 | 1N201  | K9134 | 1N428  | K0052 | 1N586  | K0052 | 1N272  | K0053 | 1N700   | K9134   |        |     |
| 1N36Z    | K9134 | 1N202  | K9134 | 1N429  | K0052 | 1N587  | K0052 | 1N275  | K0053 | 1N700   | K9134   |        |     |
| 1N37     | K9134 | 1N203  | K9134 | 1N430  | K0052 | 1N588  | K0052 | 1N278  | K0053 | 1N700   | K9134   |        |     |
| 1N37A    | K9134 | 1N204  | K9134 | 1N431  | K0052 | 1N589  | K0052 | 1N281  | K0053 | 1N700   | K9134   |        |     |
| 1N37B    | K9134 | 1N205  | K9134 | 1N432  | K0052 | 1N590  | K0052 | 1N284  | K0053 | 1N700   | K9134   |        |     |
| 1N37C    | K9134 | 1N206  | K9134 | 1N433  | K0052 | 1N591  | K0052 | 1N287  | K0053 | 1N700   | K9134   |        |     |
| 1N37D    | K9134 | 1N207  | K9134 | 1N434  | K0052 | 1N592  | K0052 | 1N290  | K0053 | 1N700   | K9134</ |        |     |





















































| DEVICE  | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|---------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| CS9450K | S0013 | CS1056 | S0024 | CS1057 | S0014 | CS1058 | S0015 | CS1059 | S0016 | CS1060 | S0017 |
| CS9451K | S0018 | CS1061 | S0025 | CS1062 | S0019 | CS1063 | S0020 | CS1064 | S0021 | CS1065 | S0022 |
| CS9452K | S0019 | CS1066 | S0026 | CS1067 | S0020 | CS1068 | S0021 | CS1069 | S0022 | CS1070 | S0023 |
| CS9453K | S0020 | CS1071 | S0027 | CS1072 | S0021 | CS1073 | S0022 | CS1074 | S0023 | CS1075 | S0024 |
| CS9454K | S0021 | CS1076 | S0028 | CS1077 | S0022 | CS1078 | S0023 | CS1079 | S0024 | CS1080 | S0025 |
| CS9455K | S0022 | CS1081 | S0029 | CS1082 | S0023 | CS1083 | S0024 | CS1084 | S0025 | CS1085 | S0026 |
| CS9456K | S0023 | CS1086 | S0030 | CS1087 | S0024 | CS1088 | S0025 | CS1089 | S0026 | CS1090 | S0027 |
| CS9457K | S0024 | CS1091 | S0031 | CS1092 | S0025 | CS1093 | S0026 | CS1094 | S0027 | CS1095 | S0028 |
| CS9458K | S0025 | CS1096 | S0032 | CS1097 | S0026 | CS1098 | S0027 | CS1099 | S0028 | CS1100 | S0029 |
| CS9459K | S0026 | CS1101 | S0033 | CS1102 | S0027 | CS1103 | S0028 | CS1104 | S0029 | CS1105 | S0030 |
| CS9460K | S0027 | CS1106 | S0034 | CS1107 | S0028 | CS1108 | S0029 | CS1109 | S0030 | CS1110 | S0031 |
| CS9461K | S0028 | CS1111 | S0035 | CS1112 | S0029 | CS1113 | S0030 | CS1114 | S0031 | CS1115 | S0032 |
| CS9462K | S0029 | CS1116 | S0036 | CS1117 | S0030 | CS1118 | S0031 | CS1119 | S0032 | CS1120 | S0033 |
| CS9463K | S0030 | CS1121 | S0037 | CS1122 | S0031 | CS1123 | S0032 | CS1124 | S0033 | CS1125 | S0034 |
| CS9464K | S0031 | CS1126 | S0038 | CS1127 | S0032 | CS1128 | S0033 | CS1129 | S0034 | CS1130 | S0035 |
| CS9465K | S0032 | CS1131 | S0039 | CS1132 | S0033 | CS1133 | S0034 | CS1134 | S0035 | CS1135 | S0036 |
| CS9466K | S0033 | CS1136 | S0040 | CS1137 | S0034 | CS1138 | S0035 | CS1139 | S0036 | CS1140 | S0037 |
| CS9467K | S0034 | CS1141 | S0041 | CS1142 | S0035 | CS1143 | S0036 | CS1144 | S0037 | CS1145 | S0038 |
| CS9468K | S0035 | CS1146 | S0042 | CS1147 | S0036 | CS1148 | S0037 | CS1149 | S0038 | CS1150 | S0039 |
| CS9469K | S0036 | CS1151 | S0043 | CS1152 | S0037 | CS1153 | S0038 | CS1154 | S0039 | CS1155 | S0040 |
| CS9470K | S0037 | CS1156 | S0044 | CS1157 | S0038 | CS1158 | S0039 | CS1159 | S0040 | CS1160 | S0041 |
| CS9471K | S0038 | CS1161 | S0045 | CS1162 | S0039 | CS1163 | S0040 | CS1164 | S0041 | CS1165 | S0042 |
| CS9472K | S0039 | CS1166 | S0046 | CS1167 | S0040 | CS1168 | S0041 | CS1169 | S0042 | CS1170 | S0043 |
| CS9473K | S0040 | CS1171 | S0047 | CS1172 | S0041 | CS1173 | S0042 | CS1174 | S0043 | CS1175 | S0044 |
| CS9474K | S0041 | CS1176 | S0048 | CS1177 | S0042 | CS1178 | S0043 | CS1179 | S0044 | CS1180 | S0045 |
| CS9475K | S0042 | CS1181 | S0049 | CS1182 | S0043 | CS1183 | S0044 | CS1184 | S0045 | CS1185 | S0046 |
| CS9476K | S0043 | CS1186 | S0050 | CS1187 | S0044 | CS1188 | S0045 | CS1189 | S0046 | CS1190 | S0047 |
| CS9477K | S0044 | CS1191 | S0051 | CS1192 | S0045 | CS1193 | S0046 | CS1194 | S0047 | CS1195 | S0048 |
| CS9478K | S0045 | CS1196 | S0052 | CS1197 | S0046 | CS1198 | S0047 | CS1199 | S0048 | CS1200 | S0049 |
| CS9479K | S0046 | CS1201 | S0053 | CS1202 | S0047 | CS1203 | S0048 | CS1204 | S0049 | CS1205 | S0050 |
| CS9480K | S0047 | CS1206 | S0054 | CS1207 | S0048 | CS1208 | S0049 | CS1209 | S0050 | CS1210 | S0051 |
| CS9481K | S0048 | CS1211 | S0055 | CS1212 | S0049 | CS1213 | S0050 | CS1214 | S0051 | CS1215 | S0052 |
| CS9482K | S0049 | CS1216 | S0056 | CS1217 | S0050 | CS1218 | S0051 | CS1219 | S0052 | CS1220 | S0053 |
| CS9483K | S0050 | CS1221 | S0057 | CS1222 | S0051 | CS1223 | S0052 | CS1224 | S0053 | CS1225 | S0054 |
| CS9484K | S0051 | CS1226 | S0058 | CS1227 | S0052 | CS1228 | S0053 | CS1229 | S0054 | CS1230 | S0055 |
| CS9485K | S0052 | CS1231 | S0059 | CS1232 | S0053 | CS1233 | S0054 | CS1234 | S0055 | CS1235 | S0056 |
| CS9486K | S0053 | CS1236 | S0060 | CS1237 | S0054 | CS1238 | S0055 | CS1239 | S0056 | CS1240 | S0057 |
| CS9487K | S0054 | CS1241 | S0061 | CS1242 | S0055 | CS1243 | S0056 | CS1244 | S0057 | CS1245 | S0058 |
| CS9488K | S0055 | CS1246 | S0062 | CS1247 | S0056 | CS1248 | S0057 | CS1249 | S0058 | CS1250 | S0059 |
| CS9489K | S0056 | CS1251 | S0063 | CS1252 | S0057 | CS1253 | S0058 | CS1254 | S0059 | CS1255 | S0060 |
| CS9490K | S0057 | CS1256 | S0064 | CS1257 | S0058 | CS1258 | S0059 | CS1259 | S0060 | CS1260 | S0061 |
| CS9491K | S0058 | CS1261 | S0065 | CS1262 | S0059 | CS1263 | S0060 | CS1264 | S0061 | CS1265 | S0062 |
| CS9492K | S0059 | CS1266 | S0066 | CS1267 | S0060 | CS1268 | S0061 | CS1269 | S0062 | CS1270 | S0063 |
| CS9493K | S0060 | CS1271 | S0067 | CS1272 | S0061 | CS1273 | S0062 | CS1274 | S0063 | CS1275 | S0064 |
| CS9494K | S0061 | CS1276 | S0068 | CS1277 | S0062 | CS1278 | S0063 | CS1279 | S0064 | CS1280 | S0065 |
| CS9495K | S0062 | CS1281 | S0069 | CS1282 | S0063 | CS1283 | S0064 | CS1284 | S0065 | CS1285 | S0066 |
| CS9496K | S0063 | CS1286 | S0070 | CS1287 | S0064 | CS1288 | S0065 | CS1289 | S0066 | CS1290 | S0067 |
| CS9497K | S0064 | CS1291 | S0071 | CS1292 | S0065 | CS1293 | S0066 | CS1294 | S0067 | CS1295 | S0068 |
| CS9498K | S0065 | CS1296 | S0072 | CS1297 | S0066 | CS1298 | S0067 | CS1299 | S0068 | CS1300 | S0069 |
| CS9499K | S0066 | CS1301 | S0073 | CS1302 | S0067 | CS1303 | S0068 | CS1304 | S0069 | CS1305 | S0070 |
| CS9500K | S0067 | CS1306 | S0074 | CS1307 | S0068 | CS1308 | S0069 | CS1309 | S0070 | CS1310 | S0071 |
| CS9501K | S0068 | CS1311 | S0075 | CS1312 | S0069 | CS1313 | S0070 | CS1314 | S0071 | CS1315 | S0072 |
| CS9502K | S0069 | CS1316 | S0076 | CS1317 | S0070 | CS1318 | S0071 | CS1319 | S0072 | CS1320 | S0073 |
| CS9503K | S0070 | CS1321 | S0077 | CS1322 | S0071 | CS1323 | S0072 | CS1324 | S0073 | CS1325 | S0074 |
| CS9504K | S0071 | CS1326 | S0078 | CS1327 | S0072 | CS1328 | S0073 | CS1329 | S0074 | CS1330 | S0075 |
| CS9505K | S0072 | CS1331 | S0079 | CS1332 | S0073 | CS1333 | S0074 | CS1334 | S0075 | CS1335 | S0076 |
| CS9506K | S0073 | CS1336 | S0080 | CS1337 | S0074 | CS1338 | S0075 | CS1339 | S0076 | CS1340 | S0077 |
| CS9507K | S0074 | CS1341 | S0081 | CS1342 | S0075 | CS1343 | S0076 | CS1344 | S0077 | CS1345 | S0078 |
| CS9508K | S0075 | CS1346 | S0082 | CS1347 | S0076 | CS1348 | S0077 | CS1349 | S0078 | CS1350 | S0079 |
| CS9509K | S0076 | CS1351 | S0083 | CS1352 | S0077 | CS1353 | S0078 | CS1354 | S0079 | CS1355 | S0080 |
| CS9510K | S0077 | CS1356 | S0084 | CS1357 | S0078 | CS1358 | S0079 | CS1359 | S0080 | CS1360 | S0081 |
| CS9511K | S0078 | CS1361 | S0085 | CS1362 | S0079 | CS1363 | S0080 | CS1364 | S0081 | CS1365 | S0082 |
| CS9512K | S0079 | CS1366 | S0086 | CS1367 | S0080 | CS1368 | S0081 | CS1369 | S0082 | CS1370 | S0083 |
| CS9513K | S0080 | CS1371 | S0087 | CS1372 | S0081 | CS1373 | S0082 | CS1374 | S0083 | CS1375 | S0084 |
| CS9514K | S0081 | CS1376 | S0088 | CS1377 | S0082 | CS1378 | S0083 | CS1379 | S0084 | CS1380 | S0085 |
| CS9515K | S0082 | CS1381 | S0089 | CS1382 | S0083 | CS1383 | S0084 | CS1384 | S0085 | CS1385 | S0086 |
| CS9516K | S0083 | CS1386 | S0090 | CS1387 | S0084 | CS1388 | S0085 | CS1389 | S0086 | CS1390 | S0087 |
| CS9517K | S0084 | CS1391 | S0091 | CS1392 | S0085 | CS1393 | S0086 | CS1394 | S0087 | CS1395 | S0088 |
| CS9518K | S0085 | CS1396 | S0092 | CS1397 | S0086 | CS1398 | S0087 | CS1399 | S0088 | CS1400 | S0089 |
| CS9519K | S0086 | CS1401 | S0093 | CS1402 | S0087 | CS1403 | S0088 | CS1404 | S0089 | CS1405 | S0090 |
| CS9520K | S0087 | CS1406 | S0094 | CS1407 | S0088 | CS1408 | S0089 | CS1409 | S0090 | CS1410 | S0091 |
| CS9521K | S0088 | CS1411 | S0095 | CS1412 | S0089 | CS1413 | S0090 | CS1414 | S0091 | CS1415 | S0092 |
| CS9522K | S0089 | CS1416 | S0096 | CS1417 | S0090 | CS1418 | S0091 | CS1419 | S0092 | CS1420 | S0093 |
| CS9523K | S0090 | CS1421 | S0097 | CS1422 | S0091 | CS1423 | S0092 | CS1424 | S0093 | CS1425 | S0094 |
| CS9524K | S0091 | CS1426 | S0098 | CS1427 | S0092 | CS1428 | S0093 | CS1429 | S0094 | CS1430 | S0095 |
| CS9525K | S0092 | CS1431 | S0099 | CS1432 | S0093 | CS1433 | S0094 | CS1434 | S0095 | CS1435 | S0096 |
| CS9526K | S0093 | CS1436 | S0100 | CS1437 | S0094 | CS1438 | S0095 | CS1439 | S0096 | CS1440 | S0097 |
| CS9527K | S0094 | CS1441 | S0101 | CS1442 | S0095 | CS1443 | S0096 | CS1444 | S0097 | CS1445 | S0098 |
| CS9528K | S0095 | CS1446 | S0102 | CS1447 | S0096 | CS1448 | S0097 | CS1449 | S0098 | CS1450 | S0099 |
| CS9529K | S0096 | CS1451 | S0103 | CS1452 | S0097 | CS1453 | S0098 | CS1454 | S0099 | CS1455 | S0100 |
| CS9530K | S0097 | CS1456 | S0104 | CS1457 | S0098 | CS1458 | S0099 | CS1459 | S0100 | CS1460 | S0101 |
| CS9531K | S0098 | CS1461 | S0105 | CS1462 | S0099 | CS1463 | S0100 | CS1464 | S0101 | CS1465 | S0102 |
| CS9532K | S0099 | CS1466 | S0106 | CS1467 | S0100 | CS1468 | S0101 | CS1469 | S0102 | CS1470 | S0103 |
| CS9533K | S0100 | CS1471 | S0107 | CS1472 | S0101 | CS1473 | S0102 | CS1474 | S0103 | CS1475 | S0104 |
| CS9534K | S0101 | CS1476 | S0108 | CS1477 | S0102 | CS1478 | S0103 | CS1479 | S0104 | CS1480 | S0105 |
| CS9535K | S0102 | CS1481 | S0109 | CS1482 | S0103 | CS1483 | S0104 | CS1484 | S0105 | CS1485 | S0106 |
| CS9536K | S0103 | CS1486 | S0110 | CS1487 | S0104 | CS1488 | S0105 | CS1489 | S0106 | CS1490 | S0107 |
| CS9537K | S0104 | CS1491 | S0111 | CS1492 | S0105 | CS1493 | S0106 | CS1494 | S0107 | CS1495 | S0108 |
| CS9538K | S0105 | CS1496 | S0112 | CS1497 | S0106 | CS1498 | S0107 | CS1499 | S0108 | CS1500 | S0109 |
| CS9539K | S0106 | CS1501 | S0113 | CS1502 | S0107 | CS1503 | S0108 | CS1504 | S0109 | CS1505 | S0110 |
| CS9540K | S0107 | CS1506 | S0114 | CS1507 | S0108 | CS1508 | S0109 | CS1509 | S0110 | CS1510 | S0111 |
| CS9541K | S0108 | CS1511 | S0115 |        |       |        |       |        |       |        |       |

| DEVICE  | HEP   | DEVICE  | HEP   | DEVICE  | HEP   | DEVICE  | HEP     | DEVICE  | HEP     | DEVICE  | HEP   |
|---------|-------|---------|-------|---------|-------|---------|---------|---------|---------|---------|-------|
| 250200A | 25014 | 250200B | R1002 | 250200C | 06011 | 250200D | 250200E | 250200F | 250200G | 250200H | R1243 |
| 250200B | 25014 | 250200C | R1002 | 250200D | 06011 | 250200E | 250200F | 250200G | 250200H | 250200I | R1243 |
| 250200C | 25014 | 250200D | R1002 | 250200E | 06011 | 250200F | 250200G | 250200H | 250200I | 250200J | R1243 |
| 250200D | 25014 | 250200E | R1002 | 250200F | 06011 | 250200G | 250200H | 250200I | 250200J | 250200K | R1243 |
| 250200E | 25014 | 250200F | R1002 | 250200G | 06011 | 250200H | 250200I | 250200J | 250200K | 250200L | R1243 |
| 250200F | 25014 | 250200G | R1002 | 250200H | 06011 | 250200I | 250200J | 250200K | 250200L | 250200M | R1243 |
| 250200G | 25014 | 250200H | R1002 | 250200I | 06011 | 250200J | 250200K | 250200L | 250200M | 250200N | R1243 |
| 250200H | 25014 | 250200I | R1002 | 250200J | 06011 | 250200K | 250200L | 250200M | 250200N | 250200O | R1243 |
| 250200I | 25014 | 250200J | R1002 | 250200K | 06011 | 250200L | 250200M | 250200N | 250200O | 250200P | R1243 |
| 250200J | 25014 | 250200K | R1002 | 250200L | 06011 | 250200M | 250200N | 250200O | 250200P | 250200Q | R1243 |
| 250200K | 25014 | 250200L | R1002 | 250200M | 06011 | 250200N | 250200O | 250200P | 250200Q | 250200R | R1243 |
| 250200L | 25014 | 250200M | R1002 | 250200N | 06011 | 250200O | 250200P | 250200Q | 250200R | 250200S | R1243 |
| 250200M | 25014 | 250200N | R1002 | 250200O | 06011 | 250200P | 250200Q | 250200R | 250200S | 250200T | R1243 |
| 250200N | 25014 | 250200O | R1002 | 250200P | 06011 | 250200Q | 250200R | 250200S | 250200T | 250200U | R1243 |
| 250200O | 25014 | 250200P | R1002 | 250200Q | 06011 | 250200R | 250200S | 250200T | 250200U | 250200V | R1243 |
| 250200P | 25014 | 250200Q | R1002 | 250200R | 06011 | 250200S | 250200T | 250200U | 250200V | 250200W | R1243 |
| 250200Q | 25014 | 250200R | R1002 | 250200S | 06011 | 250200T | 250200U | 250200V | 250200W | 250200X | R1243 |
| 250200R | 25014 | 250200S | R1002 | 250200T | 06011 | 250200U | 250200V | 250200W | 250200X | 250200Y | R1243 |
| 250200S | 25014 | 250200T | R1002 | 250200U | 06011 | 250200V | 250200W | 250200X | 250200Y | 250200Z | R1243 |
| 250200T | 25014 | 250200U | R1002 | 250200V | 06011 | 250200W | 250200X | 250200Y | 250200Z |         |       |
| 250200U | 25014 | 250200V | R1002 | 250200W | 06011 | 250200X | 250200Y | 250200Z |         |         |       |
| 250200V | 25014 | 250200W | R1002 | 250200X | 06011 | 250200Y | 250200Z |         |         |         |       |
| 250200W | 25014 | 250200X | R1002 | 250200Y | 06011 | 250200Z |         |         |         |         |       |
| 250200X | 25014 | 250200Y | R1002 | 250200Z | 06011 |         |         |         |         |         |       |
| 250200Y | 25014 | 250200Z | R1002 |         | 06011 |         |         |         |         |         |       |
| 250200Z | 25014 |         | R1002 |         | 06011 |         |         |         |         |         |       |













| DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE  | HEP   | DEVICE     | HEP   |
|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|------------|-------|
| 44M441 | 00000 | 24M435 | SU310 | 300    | K0055 | 35-070 | 00011 | 34-0000 | 00005 | 34-0007-19 | K2562 |
| 44M442 | 00014 | 24M436 | 00000 | 30000  | K0134 | 35-071 | 00000 | 34-0001 | 00011 | 34-0007-20 | K2562 |
| 44M443 | 00028 | 24M437 | 00010 | 30010  | K0134 | 35-072 | 00000 | 34-0010 | 00010 | 34-0007-22 | K3012 |
| 44M444 | 00042 | 24M438 | 00020 | 30020  | K0134 | 35-073 | 00000 | 34-0010 | 00010 | 34-0007-23 | K2562 |
| 44M445 | 00056 | 24M439 | 00030 | 30030  | K0134 | 35-074 | 00000 | 34-0010 | 00010 | 34-0007-24 | K2562 |
| 44M446 | 00070 | 24M440 | 00040 | 30040  | K0134 | 35-075 | 00000 | 34-0010 | 00010 | 34-0007-25 | K0134 |
| 44M447 | 00084 | 24M441 | 00050 | 30050  | K0134 | 35-076 | 00000 | 34-0010 | 00010 | 34-0007-26 | K0134 |
| 44M448 | 00098 | 24M442 | 00060 | 30060  | K0134 | 35-077 | 00000 | 34-0010 | 00010 | 34-0007-27 | K0134 |
| 44M449 | 00112 | 24M443 | 00070 | 30070  | K0134 | 35-078 | 00000 | 34-0010 | 00010 | 34-0007-28 | K0134 |
| 44M450 | 00126 | 24M444 | 00080 | 30080  | K0134 | 35-079 | 00000 | 34-0010 | 00010 | 34-0007-29 | K0134 |
| 44M451 | 00140 | 24M445 | 00090 | 30090  | K0134 | 35-080 | 00000 | 34-0010 | 00010 | 34-0007-30 | K0134 |
| 44M452 | 00154 | 24M446 | 00100 | 30100  | K0134 | 35-081 | 00000 | 34-0010 | 00010 | 34-0007-31 | Z4030 |
| 44M453 | 00168 | 24M447 | 00110 | 30110  | K0134 | 35-082 | 00000 | 34-0010 | 00010 |            |       |
| 44M454 | 00182 | 24M448 | 00120 | 30120  | K0134 | 35-083 | 00000 | 34-0010 | 00010 |            |       |
| 44M455 | 00196 | 24M449 | 00130 | 30130  | K0134 | 35-084 | 00000 | 34-0010 | 00010 |            |       |
| 44M456 | 00210 | 24M450 | 00140 | 30140  | K0134 | 35-085 | 00000 | 34-0010 | 00010 |            |       |
| 44M457 | 00224 | 24M451 | 00150 | 30150  | K0134 | 35-086 | 00000 | 34-0010 | 00010 |            |       |
| 44M458 | 00238 | 24M452 | 00160 | 30160  | K0134 | 35-087 | 00000 | 34-0010 | 00010 |            |       |
| 44M459 | 00252 | 24M453 | 00170 | 30170  | K0134 | 35-088 | 00000 | 34-0010 | 00010 |            |       |
| 44M460 | 00266 | 24M454 | 00180 | 30180  | K0134 | 35-089 | 00000 | 34-0010 | 00010 |            |       |
| 44M461 | 00280 | 24M455 | 00190 | 30190  | K0134 | 35-090 | 00000 | 34-0010 | 00010 |            |       |
| 44M462 | 00294 | 24M456 | 00200 | 30200  | K0134 | 35-091 | 00000 | 34-0010 | 00010 |            |       |
| 44M463 | 00308 | 24M457 | 00210 | 30210  | K0134 | 35-092 | 00000 | 34-0010 | 00010 |            |       |
| 44M464 | 00322 | 24M458 | 00220 | 30220  | K0134 | 35-093 | 00000 | 34-0010 | 00010 |            |       |
| 44M465 | 00336 | 24M459 | 00230 | 30230  | K0134 | 35-094 | 00000 | 34-0010 | 00010 |            |       |
| 44M466 | 00350 | 24M460 | 00240 | 30240  | K0134 | 35-095 | 00000 | 34-0010 | 00010 |            |       |
| 44M467 | 00364 | 24M461 | 00250 | 30250  | K0134 | 35-096 | 00000 | 34-0010 | 00010 |            |       |
| 44M468 | 00378 | 24M462 | 00260 | 30260  | K0134 | 35-097 | 00000 | 34-0010 | 00010 |            |       |
| 44M469 | 00392 | 24M463 | 00270 | 30270  | K0134 | 35-098 | 00000 | 34-0010 | 00010 |            |       |
| 44M470 | 00406 | 24M464 | 00280 | 30280  | K0134 | 35-099 | 00000 | 34-0010 | 00010 |            |       |
| 44M471 | 00420 | 24M465 | 00290 | 30290  | K0134 | 35-100 | 00000 | 34-0010 | 00010 |            |       |
| 44M472 | 00434 | 24M466 | 00300 | 30300  | K0134 | 35-101 | 00000 | 34-0010 | 00010 |            |       |
| 44M473 | 00448 | 24M467 | 00310 | 30310  | K0134 | 35-102 | 00000 | 34-0010 | 00010 |            |       |
| 44M474 | 00462 | 24M468 | 00320 | 30320  | K0134 | 35-103 | 00000 | 34-0010 | 00010 |            |       |
| 44M475 | 00476 | 24M469 | 00330 | 30330  | K0134 | 35-104 | 00000 | 34-0010 | 00010 |            |       |
| 44M476 | 00490 | 24M470 | 00340 | 30340  | K0134 | 35-105 | 00000 | 34-0010 | 00010 |            |       |
| 44M477 | 00504 | 24M471 | 00350 | 30350  | K0134 | 35-106 | 00000 | 34-0010 | 00010 |            |       |
| 44M478 | 00518 | 24M472 | 00360 | 30360  | K0134 | 35-107 | 00000 | 34-0010 | 00010 |            |       |
| 44M479 | 00532 | 24M473 | 00370 | 30370  | K0134 | 35-108 | 00000 | 34-0010 | 00010 |            |       |
| 44M480 | 00546 | 24M474 | 00380 | 30380  | K0134 | 35-109 | 00000 | 34-0010 | 00010 |            |       |
| 44M481 | 00560 | 24M475 | 00390 | 30390  | K0134 | 35-110 | 00000 | 34-0010 | 00010 |            |       |
| 44M482 | 00574 | 24M476 | 00400 | 30400  | K0134 | 35-111 | 00000 | 34-0010 | 00010 |            |       |
| 44M483 | 00588 | 24M477 | 00410 | 30410  | K0134 | 35-112 | 00000 | 34-0010 | 00010 |            |       |
| 44M484 | 00602 | 24M478 | 00420 | 30420  | K0134 | 35-113 | 00000 | 34-0010 | 00010 |            |       |
| 44M485 | 00616 | 24M479 | 00430 | 30430  | K0134 | 35-114 | 00000 | 34-0010 | 00010 |            |       |
| 44M486 | 00630 | 24M480 | 00440 | 30440  | K0134 | 35-115 | 00000 | 34-0010 | 00010 |            |       |
| 44M487 | 00644 | 24M481 | 00450 | 30450  | K0134 | 35-116 | 00000 | 34-0010 | 00010 |            |       |
| 44M488 | 00658 | 24M482 | 00460 | 30460  | K0134 | 35-117 | 00000 | 34-0010 | 00010 |            |       |
| 44M489 | 00672 | 24M483 | 00470 | 30470  | K0134 | 35-118 | 00000 | 34-0010 | 00010 |            |       |
| 44M490 | 00686 | 24M484 | 00480 | 30480  | K0134 | 35-119 | 00000 | 34-0010 | 00010 |            |       |
| 44M491 | 00700 | 24M485 | 00490 | 30490  | K0134 | 35-120 | 00000 | 34-0010 | 00010 |            |       |
| 44M492 | 00714 | 24M486 | 00500 | 30500  | K0134 | 35-121 | 00000 | 34-0010 | 00010 |            |       |
| 44M493 | 00728 | 24M487 | 00510 | 30510  | K0134 | 35-122 | 00000 | 34-0010 | 00010 |            |       |
| 44M494 | 00742 | 24M488 | 00520 | 30520  | K0134 | 35-123 | 00000 | 34-0010 | 00010 |            |       |
| 44M495 | 00756 | 24M489 | 00530 | 30530  | K0134 | 35-124 | 00000 | 34-0010 | 00010 |            |       |
| 44M496 | 00770 | 24M490 | 00540 | 30540  | K0134 | 35-125 | 00000 | 34-0010 | 00010 |            |       |
| 44M497 | 00784 | 24M491 | 00550 | 30550  | K0134 | 35-126 | 00000 | 34-0010 | 00010 |            |       |
| 44M498 | 00798 | 24M492 | 00560 | 30560  | K0134 | 35-127 | 00000 | 34-0010 | 00010 |            |       |
| 44M499 | 00812 | 24M493 | 00570 | 30570  | K0134 | 35-128 | 00000 | 34-0010 | 00010 |            |       |
| 44M500 | 00826 | 24M494 | 00580 | 30580  | K0134 | 35-129 | 00000 | 34-0010 | 00010 |            |       |
| 44M501 | 00840 | 24M495 | 00590 | 30590  | K0134 | 35-130 | 00000 | 34-0010 | 00010 |            |       |
| 44M502 | 00854 | 24M496 | 00600 | 30600  | K0134 | 35-131 | 00000 | 34-0010 | 00010 |            |       |
| 44M503 | 00868 | 24M497 | 00610 | 30610  | K0134 | 35-132 | 00000 | 34-0010 | 00010 |            |       |
| 44M504 | 00882 | 24M498 | 00620 | 30620  | K0134 | 35-133 | 00000 | 34-0010 | 00010 |            |       |
| 44M505 | 00896 | 24M499 | 00630 | 30630  | K0134 | 35-134 | 00000 | 34-0010 | 00010 |            |       |
| 44M506 | 00910 | 24M500 | 00640 | 30640  | K0134 | 35-135 | 00000 | 34-0010 | 00010 |            |       |
| 44M507 | 00924 | 24M501 | 00650 | 30650  | K0134 | 35-136 | 00000 | 34-0010 | 00010 |            |       |
| 44M508 | 00938 | 24M502 | 00660 | 30660  | K0134 | 35-137 | 00000 | 34-0010 | 00010 |            |       |
| 44M509 | 00952 | 24M503 | 00670 | 30670  | K0134 | 35-138 | 00000 | 34-0010 | 00010 |            |       |
| 44M510 | 00966 | 24M504 | 00680 | 30680  | K0134 | 35-139 | 00000 | 34-0010 | 00010 |            |       |
| 44M511 | 00980 | 24M505 | 00690 | 30690  | K0134 | 35-140 | 00000 | 34-0010 | 00010 |            |       |
| 44M512 | 00994 | 24M506 | 00700 | 30700  | K0134 | 35-141 | 00000 | 34-0010 | 00010 |            |       |
| 44M513 | 01008 | 24M507 | 00710 | 30710  | K0134 | 35-142 | 00000 | 34-0010 | 00010 |            |       |
| 44M514 | 01022 | 24M508 | 00720 | 30720  | K0134 | 35-143 | 00000 | 34-0010 | 00010 |            |       |
| 44M515 | 01036 | 24M509 | 00730 | 30730  | K0134 | 35-144 | 00000 | 34-0010 | 00010 |            |       |
| 44M516 | 01050 | 24M510 | 00740 | 30740  | K0134 | 35-145 | 00000 | 34-0010 | 00010 |            |       |
| 44M517 | 01064 | 24M511 | 00750 | 30750  | K0134 | 35-146 | 00000 | 34-0010 | 00010 |            |       |
| 44M518 | 01078 | 24M512 | 00760 | 30760  | K0134 | 35-147 | 00000 | 34-0010 | 00010 |            |       |
| 44M519 | 01092 | 24M513 | 00770 | 30770  | K0134 | 35-148 | 00000 | 34-0010 | 00010 |            |       |
| 44M520 | 01106 | 24M514 | 00780 | 30780  | K0134 | 35-149 | 00000 | 34-0010 | 00010 |            |       |
| 44M521 | 01120 | 24M515 | 00790 | 30790  | K0134 | 35-150 | 00000 | 34-0010 | 00010 |            |       |
| 44M522 | 01134 | 24M516 | 00800 | 30800  | K0134 | 35-151 | 00000 | 34-0010 | 00010 |            |       |
| 44M523 | 01148 | 24M517 | 00810 | 30810  | K0134 | 35-152 | 00000 | 34-0010 | 00010 |            |       |
| 44M524 | 01162 | 24M518 | 00820 | 30820  | K0134 | 35-153 | 00000 | 34-0010 | 00010 |            |       |
| 44M525 | 01176 | 24M519 | 00830 | 30830  | K0134 | 35-154 | 00000 | 34-0010 | 00010 |            |       |
| 44M526 | 01190 | 24M520 | 00840 | 30840  | K0134 | 35-155 | 00000 | 34-0010 | 00010 |            |       |
| 44M527 | 01204 | 24M521 | 00850 | 30850  | K0134 | 35-156 | 00000 | 34-0010 | 00010 |            |       |
| 44M528 | 01218 | 24M522 | 00860 | 30860  | K0134 | 35-157 | 00000 | 34-0010 | 00010 |            |       |
| 44M529 | 01232 | 24M523 | 00870 | 30870  | K0134 | 35-158 | 00000 | 34-0010 | 00010 |            |       |
| 44M530 | 01246 | 24M524 | 00880 | 30880  | K0134 | 35-159 | 00000 | 34-0010 | 00010 |            |       |
| 44M531 | 01260 | 24M525 | 00890 | 30890  | K0134 | 35-160 | 00000 | 34-0010 | 00010 |            |       |
| 44M532 | 01274 | 24M526 | 00900 | 30900  | K0134 | 35-161 | 00000 | 34-0010 | 00010 |            |       |
| 44M533 | 01288 | 24M527 | 00910 | 30910  | K0134 | 35-162 | 00000 | 34-0010 | 00010 |            |       |
| 44M534 | 01302 | 24M528 | 00920 | 30920  | K0134 | 35-163 | 00000 | 34-0010 | 00010 |            |       |
| 44M535 | 01316 | 24M529 | 00930 | 30930  | K0134 | 35-164 | 00000 | 34-0010 | 00010 |            |       |
| 44M536 | 01330 | 24M530 | 00940 | 30940  | K0134 | 35-165 | 00000 | 34-0010 | 00010 |            |       |
| 44M537 | 01344 | 24M531 | 00950 | 30950  | K0134 | 35-166 | 00000 | 34-0010 | 00010 |            |       |
| 44M538 | 01358 | 24M532 | 00960 | 30960  | K0134 | 35-167 | 00000 | 34-0010 | 00010 |            |       |
| 44M539 | 01372 | 24M533 | 00970 | 30970  | K0134 | 35-168 | 00000 | 34-0010 | 00010 |            |       |
| 44M540 | 01386 | 24M534 | 00980 | 30980  | K0134 | 35-169 | 00000 | 34-0010 | 00010 |            |       |
| 44M541 | 01400 | 24M535 | 00990 | 30990  | K0134 | 35-170 | 00000 | 34-0010 | 00010 |            |       |
| 44M542 | 01414 | 24M536 | 01000 | 31000  | K0134 | 35-171 | 00000 | 34-0010 | 00010 |            |       |
| 44M543 | 01428 | 24M537 | 01010 | 31010  | K0134 | 35-172 | 00000 | 34-0010 | 00010 |            |       |
|        |       |        |       |        |       |        |       |         |       |            |       |









































| OEVICE        | HEP   | DEVICE     | HEP   | OEVICE     | HEP   | DEVICE        | HEP   | OEVICE     | HEP   | DEVICE     | HEP   |
|---------------|-------|------------|-------|------------|-------|---------------|-------|------------|-------|------------|-------|
| 1703-0025     | J7J00 | Z07A4C-27  | S0014 | Z07A4C-161 | S0010 | Z07A4C-103-10 | S0011 | Z07A4C-147 | S0007 | Z07A4C-170 | R0002 |
| 1703-0017     | J7J00 | Z07A4C-20  | S0015 | Z07A4C-162 | S0029 | Z07A4C-103-21 | S0008 | Z07A4C-149 | S0009 | Z07A4C-177 | R0004 |
| 1703-0025     | J7J00 | Z07A4C-24  | S0005 | Z07A4C-163 | S0014 | Z07A100-23    | J00   | Z07A4C-149 | S0008 | Z07A4C-178 | R0002 |
| 1703-1017     | J7J00 | Z07A4C-32  | S0005 | Z07A4C-165 | S0005 | Z07A103-24    | S0011 | Z07A4C-150 | S0013 | Z07A4C-184 | R0005 |
| 1703-1020     | J7J00 | Z07A4C-34  | S0005 | Z07A4C-166 | S0001 | Z07A103-20    | S0012 | Z07A4C-151 | S0014 | Z07A4C-185 | Z0012 |
| 1707-2        | S0006 | Z07A4C-35  | S0001 | Z07A4C-167 | S0011 | Z07A103-34    | S0011 | Z07A4C-152 | S0015 | Z07A4C-186 | R0002 |
| 1708-0020     | S7A00 | Z07A4C-37  | S0008 | Z07A4C-179 | S0020 | Z07A103-34    | S0005 | Z07A4C-153 | S0015 | Z07A4C-187 | R0002 |
| 1708-0015     | J7J00 | Z07A4C-38  | S0010 | Z07A4C-180 | S0010 | Z07A103-35    | S0011 | Z07A4C-154 | S0015 | Z07A4C-188 | R0002 |
| 1708-0025     | J7J00 | Z07A4C-39  | S0005 | Z07A4C-181 | S0020 | Z07A103-41    | S0011 | Z07A4C-155 | S0015 | Z07A4C-189 | R0002 |
| 1708-1015     | J7J00 | Z07A4C-41  | S0001 | Z07A4C-185 | S0010 | Z07A103-47    | S0011 | Z07A4C-156 | S0015 | Z07A4C-190 | R0002 |
| 1708-1025     | J7J00 | Z07A4C-42  | S0001 | Z07A4C-187 | S0011 | Z07A103-40    | S0005 | Z07A4C-157 | S0015 | Z07A4C-191 | R0002 |
| 1777-17       | S0005 | Z07A4C-43  | S0005 | Z07A4C-192 | S0010 | Z07A4C-40     | S0005 | Z07A4C-158 | S0015 | Z07A4C-192 | R0002 |
| 1778-17       | R0130 | Z07A4C-44  | S0005 | Z07A4C-193 | S0011 | Z07A4C-14     | S0014 | Z07A4C-159 | S0008 | Z07A4C-193 | R0002 |
| 1789-17       | S0020 | Z07A4C-45  | S0005 | Z07A4C-195 | S0015 | Z07A4C-23     | S0005 | Z07A4C-160 | S0010 | Z07A4C-194 | R0002 |
| 1792-17       | S0010 | Z07A4C-46  | S0011 | Z07A4C-196 | S0015 | Z07A4C-27     | S0014 | Z07A4C-161 | S0016 | Z07A4C-195 | R0002 |
| 1794-17       | Z0013 | Z07A4C-47  | S0011 | Z07A4C-197 | S0015 | Z07A4C-28     | S0015 | Z07A4C-162 | S0010 | Z07A4C-196 | R0002 |
| 1799-17       | Z0014 | Z07A4C-48  | S0005 | Z07A4C-198 | S0015 | Z07A4C-29     | S0015 | Z07A4C-163 | S0014 | Z07A4C-197 | R0002 |
| 1800-17       | Z0014 | Z07A4C-49  | S0005 | Z07A4C-199 | S0014 | Z07A4C-32     | S0005 | Z07A4C-164 | S0005 | Z07A4C-198 | R0002 |
| 1804          | G0007 | Z07A4C-50  | S0001 | Z07A4C-200 | S0012 | Z07A4C-34     | S0005 | Z07A4C-165 | S0001 | Z07A4C-199 | R0002 |
| 1804-17       | S0026 | Z07A4C-51  | S0008 | Z07A4C-201 | S0005 | Z07A4C-35     | S0001 | Z07A4C-166 | S0011 | Z07A4C-200 | R0002 |
| 1809 (GUNTUN) | S0026 | Z07A4C-52  | S0005 | Z07A4C-202 | S0020 | Z07A4C-37     | S0005 | Z07A4C-167 | S0020 | Z07A4C-201 | R0002 |
| 1827-17       | S0005 | Z07A4C-57  | S0014 | Z07A4C-203 | S0013 | Z07A4C-38     | S0011 | Z07A4C-168 | S0016 | Z07A4C-202 | R0002 |
| 1835-17       | S0010 | Z07A4C-58  | S0011 | Z07A4C-204 | S0011 | Z07A4C-39     | S0005 | Z07A4C-169 | S0020 | Z07A4C-203 | R0002 |
| 1840-17       | S0015 | Z07A4C-59  | S0015 | Z07A4C-205 | S0005 | Z07A4C-41     | S0005 | Z07A4C-170 | S0010 | Z07A4C-204 | R0002 |
| 1841-17       | S0015 | Z07A4C-60  | S0005 | Z07A4C-206 | S0005 | Z07A4C-42     | S0005 | Z07A4C-171 | S0011 | Z07A4C-205 | R0002 |
| 1843-17       | S0033 | Z07A4C-61  | S0005 | Z07A4C-207 | S0030 | Z07A4C-43     | S0005 | Z07A4C-172 | S0010 | Z07A4C-206 | R0002 |
| 1844-17       | S0015 | Z07A4C-62  | S0015 | Z07A4C-208 | S0015 | Z07A4C-44     | S0005 | Z07A4C-173 | S0011 | Z07A4C-207 | R0002 |
| 1845-17       | S0017 | Z07A4C-63  | S0015 | Z07A4C-209 | S0014 | Z07A4C-45     | S0005 | Z07A4C-174 | S0015 | Z07A4C-208 | R0002 |
| 1846-17       | R0000 | Z07A4C-64  | S0010 | Z07A4C-210 | S0010 | Z07A4C-46     | S0011 | Z07A4C-175 | S0015 | Z07A4C-209 | R0002 |
| 1849          | R0002 | Z07A4C-65  | S0008 | Z07A4C-211 | S0010 | Z07A4C-47     | S0011 | Z07A4C-176 | S0015 | Z07A4C-210 | R0002 |
| 1849K         | R0002 | Z07A4C-66  | S0008 | Z07A4C-212 | S0015 | Z07A4C-48     | S0014 | Z07A4C-177 | S0015 | Z07A4C-211 | R0002 |
| 1850-0090     | S0005 | Z07A4C-67  | S0001 | Z07A4C-215 | S0015 | Z07A4C-49     | S0005 | Z07A4C-178 | S0014 | Z07A4C-212 | R0002 |
| 1850 (SUNY)   | R0004 | Z07A4C-68  | S0001 | Z07A4C-216 | S0010 | Z07A4C-50     | S0005 | Z07A4C-179 | S0012 | Z07A4C-213 | R0002 |
| 1850R         | R0004 | Z07A4C-70  | S0001 | Z07A4C-217 | S0014 | Z07A4C-51     | S0005 | Z07A4C-180 | S0005 | Z07A4C-214 | R0002 |
| 1851-17       | R0004 | Z07A4C-71  | S0001 | Z07A4C-218 | S0010 | Z07A4C-52     | S0005 | Z07A4C-181 | S0005 | Z07A4C-215 | R0002 |
| 1851-17       | R0002 | Z07A4C-72  | S0005 | Z07A4C-219 | S0011 | Z07A4C-53     | S0014 | Z07A4C-182 | S0014 | Z07A4C-216 | R0002 |
| 1851-17       | S0014 | Z07A4C-73  | S0015 | Z07A4C-220 | S0010 | Z07A4C-54     | S0015 | Z07A4C-183 | S0015 | Z07A4C-217 | R0002 |
| 1851-17       | S0014 | Z07A4C-74  | S0005 | Z07A4C-221 | S0015 | Z07A4C-55     | S0015 | Z07A4C-184 | S0015 | Z07A4C-218 | R0002 |
| 1851-17       | R0002 | Z07A4C-75  | S0005 | Z07A4C-222 | S0015 | Z07A4C-56     | S0005 | Z07A4C-185 | S0015 | Z07A4C-219 | R0002 |
| 1851-17       | F0015 | Z07A4C-79  | S0005 | Z07A4C-223 | S0015 | Z07A4C-57     | S0015 | Z07A4C-186 | S0015 | Z07A4C-220 | R0002 |
| 1851-17       | S0015 | Z07A4C-80  | S0005 | Z07A4C-224 | S0014 | Z07A4C-58     | S0015 | Z07A4C-187 | S0015 | Z07A4C-221 | R0002 |
| 1851-17       | S0012 | Z07A4C-81  | S0015 | Z07A4C-225 | S0015 | Z07A4C-59     | S0015 | Z07A4C-188 | S0015 | Z07A4C-222 | R0002 |
| 1851-17       | S0005 | Z07A4C-82  | S0005 | Z07A4C-226 | S0015 | Z07A4C-60     | S0015 | Z07A4C-189 | S0015 | Z07A4C-223 | R0002 |
| 1851-17       | S0015 | Z07A4C-83  | S0015 | Z07A4C-227 | S0015 | Z07A4C-61     | S0015 | Z07A4C-190 | S0015 | Z07A4C-224 | R0002 |
| 1851-17       | S0015 | Z07A4C-84  | S0015 | Z07A4C-228 | S0015 | Z07A4C-62     | S0015 | Z07A4C-191 | S0015 | Z07A4C-225 | R0002 |
| 1851-17       | S0015 | Z07A4C-85  | S0015 | Z07A4C-229 | S0015 | Z07A4C-63     | S0015 | Z07A4C-192 | S0015 | Z07A4C-226 | R0002 |
| 1851-17       | S0015 | Z07A4C-86  | S0015 | Z07A4C-230 | S0015 | Z07A4C-64     | S0015 | Z07A4C-193 | S0015 | Z07A4C-227 | R0002 |
| 1851-17       | S0015 | Z07A4C-87  | S0015 | Z07A4C-231 | S0015 | Z07A4C-65     | S0015 | Z07A4C-194 | S0015 | Z07A4C-228 | R0002 |
| 1851-17       | S0015 | Z07A4C-88  | S0015 | Z07A4C-232 | S0015 | Z07A4C-66     | S0015 | Z07A4C-195 | S0015 | Z07A4C-229 | R0002 |
| 1851-17       | S0015 | Z07A4C-89  | S0015 | Z07A4C-233 | S0015 | Z07A4C-67     | S0015 | Z07A4C-196 | S0015 | Z07A4C-230 | R0002 |
| 1851-17       | S0015 | Z07A4C-90  | S0015 | Z07A4C-234 | S0015 | Z07A4C-68     | S0015 | Z07A4C-197 | S0015 | Z07A4C-231 | R0002 |
| 1851-17       | S0015 | Z07A4C-91  | S0015 | Z07A4C-235 | S0015 | Z07A4C-69     | S0015 | Z07A4C-198 | S0015 | Z07A4C-232 | R0002 |
| 1851-17       | S0015 | Z07A4C-92  | S0015 | Z07A4C-236 | S0015 | Z07A4C-70     | S0015 | Z07A4C-199 | S0015 | Z07A4C-233 | R0002 |
| 1851-17       | S0015 | Z07A4C-93  | S0015 | Z07A4C-237 | S0015 | Z07A4C-71     | S0015 | Z07A4C-200 | S0015 | Z07A4C-234 | R0002 |
| 1851-17       | S0015 | Z07A4C-94  | S0015 | Z07A4C-238 | S0015 | Z07A4C-72     | S0015 | Z07A4C-201 | S0015 | Z07A4C-235 | R0002 |
| 1851-17       | S0015 | Z07A4C-95  | S0015 | Z07A4C-239 | S0015 | Z07A4C-73     | S0015 | Z07A4C-202 | S0015 | Z07A4C-236 | R0002 |
| 1851-17       | S0015 | Z07A4C-96  | S0015 | Z07A4C-240 | S0015 | Z07A4C-74     | S0015 | Z07A4C-203 | S0015 | Z07A4C-237 | R0002 |
| 1851-17       | S0015 | Z07A4C-97  | S0015 | Z07A4C-241 | S0015 | Z07A4C-75     | S0015 | Z07A4C-204 | S0015 | Z07A4C-238 | R0002 |
| 1851-17       | S0015 | Z07A4C-98  | S0015 | Z07A4C-242 | S0015 | Z07A4C-76     | S0015 | Z07A4C-205 | S0015 | Z07A4C-239 | R0002 |
| 1851-17       | S0015 | Z07A4C-99  | S0015 | Z07A4C-243 | S0015 | Z07A4C-77     | S0015 | Z07A4C-206 | S0015 | Z07A4C-240 | R0002 |
| 1851-17       | S0015 | Z07A4C-100 | S0015 | Z07A4C-244 | S0015 | Z07A4C-78     | S0015 | Z07A4C-207 | S0015 | Z07A4C-241 | R0002 |
| 1851-17       | S0015 | Z07A4C-101 | S0015 | Z07A4C-245 | S0015 | Z07A4C-79     | S0015 | Z07A4C-208 | S0015 | Z07A4C-242 | R0002 |
| 1851-17       | S0015 | Z07A4C-102 | S0015 | Z07A4C-246 | S0015 | Z07A4C-80     | S0015 | Z07A4C-209 | S0015 | Z07A4C-243 | R0002 |
| 1851-17       | S0015 | Z07A4C-103 | S0015 | Z07A4C-247 | S0015 | Z07A4C-81     | S0015 | Z07A4C-210 | S0015 | Z07A4C-244 | R0002 |
| 1851-17       | S0015 | Z07A4C-104 | S0015 | Z07A4C-248 | S0015 | Z07A4C-82     | S0015 | Z07A4C-211 | S0015 | Z07A4C-245 | R0002 |
| 1851-17       | S0015 | Z07A4C-105 | S0015 | Z07A4C-249 | S0015 | Z07A4C-83     | S0015 | Z07A4C-212 | S0015 | Z07A4C-246 | R0002 |
| 1851-17       | S0015 | Z07A4C-106 | S0015 | Z07A4C-250 | S0015 | Z07A4C-84     | S0015 | Z07A4C-213 | S0015 | Z07A4C-247 | R0002 |
| 1851-17       | S0015 | Z07A4C-107 | S0015 | Z07A4C-251 | S0015 | Z07A4C-85     | S0015 | Z07A4C-214 | S0015 | Z07A4C-248 | R0002 |
| 1851-17       | S0015 | Z07A4C-108 | S0015 | Z07A4C-252 | S0015 | Z07A4C-86     | S0015 | Z07A4C-215 | S0015 | Z07A4C-249 | R0002 |
| 1851-17       | S0015 | Z07A4C-109 | S0015 | Z07A4C-253 | S0015 | Z07A4C-87     | S0015 | Z07A4C-216 | S0015 | Z07A4C-250 | R0002 |
| 1851-17       | S0015 | Z07A4C-110 | S0015 | Z07A4C-254 | S0015 | Z07A4C-88     | S0015 | Z07A4C-217 | S0015 | Z07A4C-251 | R0002 |
| 1851-17       | S0015 | Z07A4C-111 | S0015 | Z07A4C-255 | S0015 | Z07A4C-89     | S0015 | Z07A4C-218 | S0015 | Z07A4C-252 | R0002 |
| 1851-17       | S0015 | Z07A4C-112 | S0015 | Z07A4C-256 | S0015 | Z07A4C-90     | S0015 | Z07A4C-219 | S0015 | Z07A4C-253 | R0002 |
| 1851-17       | S0015 | Z07A4C-113 | S0015 | Z07A4C-257 | S0015 | Z07A4C-91     | S0015 | Z07A4C-220 | S0015 | Z07A4C-254 | R0002 |
| 1851-17       | S0015 | Z07A4C-114 | S0015 | Z07A4C-258 | S0015 | Z07A4C-92     | S0015 | Z07A4C-221 | S0015 | Z07A4C-255 | R0002 |
| 1851-17       | S0015 | Z07A4C-115 | S0015 | Z07A4C-259 | S0015 | Z07A4C-93     | S0015 | Z07A4C-222 | S0015 | Z07A4C-256 | R0002 |
| 1851-17       | S0015 | Z07A4C-116 | S0015 | Z07A4C-260 | S0015 | Z07A4C-94     | S0015 | Z07A4C-223 | S0015 | Z07A4C-257 | R0002 |
| 1851-17       | S0015 | Z07A4C-117 | S0015 | Z07A4C-261 | S0015 | Z07A4C-95     | S0015 | Z07A4C-224 | S0015 | Z07A4C-258 | R0002 |
| 1851-17       | S0015 | Z07A4C-118 | S0015 | Z07A4C-262 | S0015 | Z07A4C-96     | S0015 | Z07A4C-225 | S0015 | Z07A4C-259 | R0002 |
| 1851-17       | S0015 | Z07A4C-119 | S0015 | Z07A4C-263 | S0015 | Z07A4C-97     | S0015 | Z07A       |       |            |       |



| DEVICE       | HEP   | DEVICE            | HEP   | DEVICE          | HEP   | DEVICE            | HEP   | DEVICE    | HEP    | DEVICE    | HEP    |
|--------------|-------|-------------------|-------|-----------------|-------|-------------------|-------|-----------|--------|-----------|--------|
| 5011-028     | S0019 | 7304-0053P1       | S3001 | 0000-000005-008 | S5619 | 90330             | S0019 | 01000-4   | S9140  | 23071-021 | S0017  |
| 5011-028F    | S0019 | 7304-0111P1       | S0010 | 0000-000005-009 | S5025 | 9314 (ue)         | S0019 | 01000-5   | S9140  | 23071-023 | S0017  |
| 5011-0730    | F0015 | 7304-0110P1       | F0015 | 0000-000005-010 | S5001 | 9330 u11 70112    | S0005 | 01000-704 | S9143  | 23072-016 | S5020  |
| 5011-0930    | S0023 | 7304-0111P1       | S0014 | 0000-000005-011 | S5002 | 9330 223 00112    | S0010 | 02007-1   | S9006  | 23072-018 | S5020  |
| 5012-79(C)   | S0000 | 7304-0120P1       | S3000 | 0000-000005-012 | S0011 | 9330 223 70112    | S0010 | 02007-3   | S9005  | 23072-022 | S9026  |
| 5012-370C    | S0000 | 7425              | S0015 | 0000-000005-013 | S3003 | 9330 003 30112    | S0024 | 02008-5   | S9005  | 23080-42  | R0052  |
| 5013-4000    | S0030 | 7420              | S0015 | 0000-000005-015 | S0015 | 9330 707 60112    | S0019 | 02009-5   | S7003  | 23080-52  | R0002  |
| 5013-4000    | S0014 | 7427              | S0015 | 0000-000006-011 | S3001 | 9330 705 10112    | S0019 | 02000-7   | S7001  | 23080-53  | R0015  |
| 5013-4000    | S0014 | 7428              | S0015 | 0000-000006-012 | S3002 | 9330 705 10112    | S0024 | 02000-4   | S9141  | 23080-54  | R0011  |
| 5013-4000LUG | S0014 | 7429              | S0015 | 0000-000006-013 | S0010 | 9502              | S0024 | 02000-5   | S9141  | 23080-55  | R0014  |
| 5013-4001A   | S0014 | 7430              | S0015 | 0000-000006-014 | S5013 | 9550-1            | S0003 | 23080-5A  | S9141  | 23080-161 | S3015  |
| 5013-4001B   | S0014 | 7431              | S0015 | 0000-000006-015 | S0011 | 9000              | S0020 | 24049B    | R0053  | 23080-162 | S0012  |
| 5013-4001C   | S0014 | 7432              | S0015 | 0000-000006-016 | S7004 | 9000-7            | S0020 | 25253     | R0005  | 23080-163 | S0015  |
| 5013-4001(D) | S0014 | 7433              | S0015 | 0000-000006-017 | R0002 | 9000F             | S0019 | 29000     | C6004P | 23080-164 | C6004P |
| 5013-4001E   | S0014 | 7510 (D.U.U.C.)   | R0000 | 0000-000006-018 | R0002 | 9000F             | S0019 | 29007     | C6004P | 23080-165 | R0002  |
| 5013-4001F   | S0010 | 7510 (T.R.A.N.S.) | S0019 | 0000-000006-019 | Z0412 | 9000              | S0019 | 29010     | C6004P | 23080-166 | R0002  |
| 5013-4001G   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-020 | Z0420 | 9000              | S0019 | 29011     | C6004P | 23080-167 | R0002  |
| 5013-4001H   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-021 | S0015 | 9001              | S0010 | 29012     | S0024  | 23080-168 | S0015  |
| 5013-4001I   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-022 | R0002 | 9001 (M.U.R.S.E.) | R0002 | 29013     | S0024  | 23080-169 | S0015  |
| 5013-4001J   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-023 | R0002 | 9001              | S0014 | 29014     | S0024  | 23080-170 | S0015  |
| 5013-4001K   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-024 | Z0412 | 9001              | S0014 | 29015     | S0014  | 23080-171 | S0015  |
| 5013-4001L   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-025 | R0002 | 9000              | S0014 | 29016     | R9001  | 23080-172 | S0015  |
| 5013-4001M   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-026 | R0002 | 9000              | S0014 | 29017     | R9001  | 23080-173 | S0015  |
| 5013-4001N   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-027 | S0015 | 9000              | S0014 | 29018     | R9001  | 23080-174 | S0015  |
| 5013-4001O   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-028 | S0015 | 9000              | S0014 | 29019     | R9001  | 23080-175 | S0015  |
| 5013-4001P   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-029 | S0015 | 9000              | S0014 | 29020     | R9001  | 23080-176 | S0015  |
| 5013-4001Q   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-030 | S0015 | 9000              | S0014 | 29021     | R9001  | 23080-177 | S0015  |
| 5013-4001R   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-031 | S0015 | 9000              | S0014 | 29022     | R9001  | 23080-178 | S0015  |
| 5013-4001S   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-032 | S0015 | 9000              | S0014 | 29023     | R9001  | 23080-179 | S0015  |
| 5013-4001T   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-033 | S0015 | 9000              | S0014 | 29024     | R9001  | 23080-180 | S0015  |
| 5013-4001U   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-034 | S0015 | 9000              | S0014 | 29025     | R9001  | 23080-181 | S0015  |
| 5013-4001V   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-035 | S0015 | 9000              | S0014 | 29026     | R9001  | 23080-182 | S0015  |
| 5013-4001W   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-036 | S0015 | 9000              | S0014 | 29027     | R9001  | 23080-183 | S0015  |
| 5013-4001X   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-037 | S0015 | 9000              | S0014 | 29028     | R9001  | 23080-184 | S0015  |
| 5013-4001Y   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-038 | S0015 | 9000              | S0014 | 29029     | R9001  | 23080-185 | S0015  |
| 5013-4001Z   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-039 | S0015 | 9000              | S0014 | 29030     | R9001  | 23080-186 | S0015  |
| 5013-4002A   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-040 | S0015 | 9000              | S0014 | 29031     | R9001  | 23080-187 | S0015  |
| 5013-4002B   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-041 | S0015 | 9000              | S0014 | 29032     | R9001  | 23080-188 | S0015  |
| 5013-4002C   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-042 | S0015 | 9000              | S0014 | 29033     | R9001  | 23080-189 | S0015  |
| 5013-4002D   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-043 | S0015 | 9000              | S0014 | 29034     | R9001  | 23080-190 | S0015  |
| 5013-4002E   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-044 | S0015 | 9000              | S0014 | 29035     | R9001  | 23080-191 | S0015  |
| 5013-4002F   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-045 | S0015 | 9000              | S0014 | 29036     | R9001  | 23080-192 | S0015  |
| 5013-4002G   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-046 | S0015 | 9000              | S0014 | 29037     | R9001  | 23080-193 | S0015  |
| 5013-4002H   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-047 | S0015 | 9000              | S0014 | 29038     | R9001  | 23080-194 | S0015  |
| 5013-4002I   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-048 | S0015 | 9000              | S0014 | 29039     | R9001  | 23080-195 | S0015  |
| 5013-4002J   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-049 | S0015 | 9000              | S0014 | 29040     | R9001  | 23080-196 | S0015  |
| 5013-4002K   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-050 | S0015 | 9000              | S0014 | 29041     | R9001  | 23080-197 | S0015  |
| 5013-4002L   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-051 | S0015 | 9000              | S0014 | 29042     | R9001  | 23080-198 | S0015  |
| 5013-4002M   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-052 | S0015 | 9000              | S0014 | 29043     | R9001  | 23080-199 | S0015  |
| 5013-4002N   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-053 | S0015 | 9000              | S0014 | 29044     | R9001  | 23080-200 | S0015  |
| 5013-4002O   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-054 | S0015 | 9000              | S0014 | 29045     | R9001  | 23080-201 | S0015  |
| 5013-4002P   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-055 | S0015 | 9000              | S0014 | 29046     | R9001  | 23080-202 | S0015  |
| 5013-4002Q   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-056 | S0015 | 9000              | S0014 | 29047     | R9001  | 23080-203 | S0015  |
| 5013-4002R   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-057 | S0015 | 9000              | S0014 | 29048     | R9001  | 23080-204 | S0015  |
| 5013-4002S   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-058 | S0015 | 9000              | S0014 | 29049     | R9001  | 23080-205 | S0015  |
| 5013-4002T   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-059 | S0015 | 9000              | S0014 | 29050     | R9001  | 23080-206 | S0015  |
| 5013-4002U   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-060 | S0015 | 9000              | S0014 | 29051     | R9001  | 23080-207 | S0015  |
| 5013-4002V   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-061 | S0015 | 9000              | S0014 | 29052     | R9001  | 23080-208 | S0015  |
| 5013-4002W   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-062 | S0015 | 9000              | S0014 | 29053     | R9001  | 23080-209 | S0015  |
| 5013-4002X   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-063 | S0015 | 9000              | S0014 | 29054     | R9001  | 23080-210 | S0015  |
| 5013-4002Y   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-064 | S0015 | 9000              | S0014 | 29055     | R9001  | 23080-211 | S0015  |
| 5013-4002Z   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-065 | S0015 | 9000              | S0014 | 29056     | R9001  | 23080-212 | S0015  |
| 5013-4003A   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-066 | S0015 | 9000              | S0014 | 29057     | R9001  | 23080-213 | S0015  |
| 5013-4003B   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-067 | S0015 | 9000              | S0014 | 29058     | R9001  | 23080-214 | S0015  |
| 5013-4003C   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-068 | S0015 | 9000              | S0014 | 29059     | R9001  | 23080-215 | S0015  |
| 5013-4003D   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-069 | S0015 | 9000              | S0014 | 29060     | R9001  | 23080-216 | S0015  |
| 5013-4003E   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-070 | S0015 | 9000              | S0014 | 29061     | R9001  | 23080-217 | S0015  |
| 5013-4003F   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-071 | S0015 | 9000              | S0014 | 29062     | R9001  | 23080-218 | S0015  |
| 5013-4003G   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-072 | S0015 | 9000              | S0014 | 29063     | R9001  | 23080-219 | S0015  |
| 5013-4003H   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-073 | S0015 | 9000              | S0014 | 29064     | R9001  | 23080-220 | S0015  |
| 5013-4003I   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-074 | S0015 | 9000              | S0014 | 29065     | R9001  | 23080-221 | S0015  |
| 5013-4003J   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-075 | S0015 | 9000              | S0014 | 29066     | R9001  | 23080-222 | S0015  |
| 5013-4003K   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-076 | S0015 | 9000              | S0014 | 29067     | R9001  | 23080-223 | S0015  |
| 5013-4003L   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-077 | S0015 | 9000              | S0014 | 29068     | R9001  | 23080-224 | S0015  |
| 5013-4003M   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-078 | S0015 | 9000              | S0014 | 29069     | R9001  | 23080-225 | S0015  |
| 5013-4003N   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-079 | S0015 | 9000              | S0014 | 29070     | R9001  | 23080-226 | S0015  |
| 5013-4003O   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-080 | S0015 | 9000              | S0014 | 29071     | R9001  | 23080-227 | S0015  |
| 5013-4003P   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-081 | S0015 | 9000              | S0014 | 29072     | R9001  | 23080-228 | S0015  |
| 5013-4003Q   | S0010 | 7510 (U.C.)       | S0019 | 0000-000006-082 | S0015 | 9000              | S0014 | 29073     | R9001  | 23080-229 | S001   |



| OEVICE | HEP   | OEVICE | HEP   | OEVICE | HEP   | OEVICE | HEP   | OEVICE  | HEP         | OEVICE   | HEP   |
|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------------|----------|-------|
| 36203  | K6050 | 40207  | M0042 | 40409  | S0010 | 40721  | R1725 | 44002   | R0052       | 07193-02 | 00065 |
| 36206  | K7150 | 40208  | 00003 | 40470  | S0010 | 40722  | K1725 | 44003   | K6052       | 07193-05 | 00065 |
| 36209  | 00002 | 40209  | 00002 | 40471  | S0010 | 40723  | K1725 | 44004   | R0053       | 07194    | 20407 |
| 36204  | R0054 | 40210  | 30013 | 40472  | S0010 | 40724  | R1725 | 44005   | R0054       | 07200    | S0033 |
| 36242  | 30005 | 40211  | 30014 | 40473  | S0030 | 40727  | K1725 | 44006   | R0055       | 07200    | K9135 |
| 36247  | 30005 | 40212  | 30018 | 40474  | S0030 | 40733  | K1725 | 44007   | R0056       | 07201    | 00069 |
| 36213  | S0011 | 40213  | 30019 | 40475  | S0010 | 40731  | K1725 | 44008-3 | R0057       | 07202    | S0025 |
| 36217  | 30012 | 40214  | 30020 | 40476  | S0010 | 40732  | R1725 | 44009   | S0014       | 00017    | S0015 |
| 37377  | S0012 | 40215  | S0017 | 40477  | S0010 | 40733  | K1725 | 44010   | S0013       | 09107-42 | 00065 |
| 37385  | S0019 | 40216  | S0001 | 40478  | S0010 | 40734  | K1725 | 44011   | S0013+30014 | 09107-45 | 00066 |
| 37430  | S0019 | 40217  | S0014 | 40479  | S0010 | 40741  | R1225 | 44012   | F0011       | 09107-05 | 00065 |
| 37080  | K0053 | 40218  | 30012 | 40480  | S0010 | 40742  | K1243 | 44013   | K0053       | 71177A01 | 00069 |
| 37094  | S0019 | 40219  | 30014 | 40481  | S0010 | 40743  | K1243 | 44014   | R0053       | 71177A02 | 00069 |
| 37060  | S0011 | 40220  | S0012 | 40482  | S0010 | 40744  | K1247 | 44015   | R0053       | 71177A03 | 00069 |
| 38031  | 00000 | 40221  | S0011 | 40483  | G0008 | 40745  | K1247 | 44016   | R0054       | 71177A05 | 00069 |
| 38094  | 00000 | 40222  | S0012 | 40484  | G0006 | 40746  | K1243 | 44017   | R0054       | 71177A02 | 00069 |
| 38095  | S0032 | 40223  | S0014 | 40485  | G0008 | 40747  | K1243 | 44018   | R0054       | 71177A05 | 00069 |
| 38120  | S0020 | 40224  | S0012 | 40486  | G0006 | 40748  | K1247 | 44019   | R0054       | 71177A05 | 00069 |
| 38121  | 30020 | 40225  | S0017 | 40487  | S0011 | 40753  | R1304 | 44020   | R0054       | 71177A05 | 00069 |
| 38122  | 30011 | 40226  | 30011 | 40488  | S0014 | 40754  | K1304 | 44021   | R0054       | 71177A05 | 00069 |
| 38174  | K0054 | 40227  | 30022 | 40489  | R1725 | 40755  | K1304 | 44022   | G0090       | 71177    | R0054 |
| 38177  | G0009 | 40228  | S0015 | 40490  | K1725 | 40757  | R1304 | 44023   | R0054       | 71178    | Z0210 |
| 38178  | S0019 | 40229  | 30021 | 40491  | K1221 | 40758  | M1304 | 44024   | R0052       | 71179    | R0054 |
| 38246  | S0010 | 40230  | S0011 | 40492  | K1222 | 40759  | M1304 | 44025   | R0054       | 71203    | 00065 |
| 38448  | 30020 | 40231  | S0014 | 40493  | K1223 | 40761  | K1725 | 44026   | R0054       | 71204    | 00067 |
| 38511  | S0019 | 40232  | S0012 | 40494  | K1221 | 40762  | R1225 | 44027   | R0054       | 71205    | 00065 |
| 38710  | S0014 | 40233  | 30014 | 40495  | K1222 | 40763  | R1225 | 44028   | R0053       | 71205    | K9134 |
| 38785  | S0010 | 40234  | S0014 | 40496  | K1725 | 40777  | K1751 | 44029   | R0050       | 71205    | K9062 |
| 38786  | S0010 | 40235  | 30011 | 40497  | K1725 | 40780  | K1751 | 44030   | R0050       | 71205    | K9061 |
| 38787  | S0019 | 40236  | S0005 | 40498  | K1725 | 40781  | K1751 | 44031   | R0054       | 71205    | K9063 |
| 38788  | S0011 | 40237  | 30022 | 40499  | K1725 | 40782  | K1751 | 44032   | R0054       | 71205    | R0054 |
| 38789  | S0019 | 40238  | 30003 | 40500  | S0004 | 40785  | K1705 | 44033   | R0054       | 71205    | R0054 |
| 38790  | S0019 | 40239  | S0003 | 40501  | S0003 | 40786  | K1705 | 44034   | S0005       | 71205    | R2562 |
| 38791  | S0014 | 40240  | S0021 | 40502  | S0017 | 40787  | K1705 | 44035   | G0005       | 71211    | K0061 |
| 38792  | S0000 | 40241  | S0021 | 40503  | S0017 | 40790  | K1705 | 44036   | R0054       | 71211    | R0054 |
| 38793  | S0000 | 40242  | S0021 | 40504  | S0014 | 40793  | K1751 | 44037   | R0050       | 71211    | R0054 |
| 38794  | S0014 | 40243  | S0014 | 40505  | R1722 | 40794  | K1725 | 44038   | R0052       | 71213A   | R0054 |
| 38795  | F0004 | 40244  | 30022 | 40506  | K1725 | 40802  | K1705 | 44039   | R0053       | 71213    | R9135 |
| 40004  | G0009 | 40245  | 30023 | 40507  | K1725 | 40803  | K1705 | 44040   | R0052       | 71213A   | R9135 |
| 40005  | G0008 | 40246  | S0014 | 40508  | K1722 | 40804  | R0054 | 44041   | R0052       | 71213    | R9135 |
| 40006  | S0005 | 40247  | S0019 | 40509  | K1725 | 40805  | R0054 | 44042   | R0052       | 71213    | R9135 |
| 40007  | S0005 | 40248  | 30019 | 40510  | K1725 | 40806  | R0054 | 44043   | R0052       | 71213    | R9135 |
| 40008  | S0005 | 40249  | 30019 | 40511  | S0011 | 40807  | K1221 | 44044   | R0052       | 71213    | R0062 |
| 40009  | S0005 | 40250  | 30025 | 40512  | S0011 | 40808  | K1221 | 44045   | R0052       | 71213    | R0060 |
| 40010  | S0005 | 40251  | 30025 | 40513  | S0011 | 40809  | K1221 | 44046   | R0052       | 71213    | R0060 |
| 40011  | S0005 | 40252  | 30025 | 40514  | S0011 | 40810  | K1221 | 44047   | R0052       | 71213    | R0060 |
| 40012  | S0005 | 40253  | 30025 | 40515  | S0011 | 40811  | K1221 | 44048   | R0052       | 71213    | R0060 |
| 40013  | S0005 | 40254  | 30025 | 40516  | S0011 | 40812  | K1221 | 44049   | R0052       | 71213    | R0060 |
| 40014  | S0005 | 40255  | 30025 | 40517  | S0011 | 40813  | K1221 | 44050   | R0052       | 71213    | R0060 |
| 40015  | S0005 | 40256  | 30025 | 40518  | S0011 | 40814  | K1221 | 44051   | R0052       | 71213    | R0060 |
| 40016  | S0005 | 40257  | 30025 | 40519  | S0011 | 40815  | K1221 | 44052   | R0052       | 71213    | R0060 |
| 40017  | S0005 | 40258  | 30025 | 40520  | S0011 | 40816  | K1221 | 44053   | R0052       | 71213    | R0060 |
| 40018  | S0005 | 40259  | 30025 | 40521  | S0011 | 40817  | K1221 | 44054   | R0052       | 71213    | R0060 |
| 40019  | S0005 | 40260  | 30025 | 40522  | S0011 | 40818  | K1221 | 44055   | R0052       | 71213    | R0060 |
| 40020  | S0005 | 40261  | 30025 | 40523  | S0011 | 40819  | K1221 | 44056   | R0052       | 71213    | R0060 |
| 40021  | S0005 | 40262  | 30025 | 40524  | S0011 | 40820  | K1221 | 44057   | R0052       | 71213    | R0060 |
| 40022  | S0005 | 40263  | 30025 | 40525  | S0011 | 40821  | K1221 | 44058   | R0052       | 71213    | R0060 |
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| 40025  | S0005 | 40266  | 30025 | 40528  | S0011 | 40824  | K1221 | 44061   | R0052       | 71213    | R0060 |
| 40026  | S0005 | 40267  | 30025 | 40529  | S0011 | 40825  | K1221 | 44062   | R0052       | 71213    | R0060 |
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| 40035  | S0005 | 40276  | 30025 | 40538  | S0011 | 40834  | K1221 | 44071   | R0052       | 71213    | R0060 |
| 40036  | S0005 | 40277  | 30025 | 40539  | S0011 | 40835  | K1221 | 44072   | R0052       | 71213    | R0060 |
| 40037  | S0005 | 40278  | 30025 | 40540  | S0011 | 40836  | K1221 | 44073   | R0052       | 71213    | R0060 |
| 40038  | S0005 | 40279  | 30025 | 40541  | S0011 | 40837  | K1221 | 44074   | R0052       | 71213    | R0060 |
| 40039  | S0005 | 40280  | 30025 | 40542  | S0011 | 40838  | K1221 | 44075   | R0052       | 71213    | R0060 |
| 40040  | S0005 | 40281  | 30025 | 40543  | S0011 | 40839  | K1221 | 44076   | R0052       | 71213    | R0060 |
| 40041  | S0005 | 40282  | 30025 | 40544  | S0011 | 40840  | K1221 | 44077   | R0052       | 71213    | R0060 |
| 40042  | S0005 | 40283  | 30025 | 40545  | S0011 | 40841  | K1221 | 44078   | R0052       | 71213    | R0060 |
| 40043  | S0005 | 40284  | 30025 | 40546  | S0011 | 40842  | K1221 | 44079   | R0052       | 71213    | R0060 |
| 40044  | S0005 | 40285  | 30025 | 40547  | S0011 | 40843  | K1221 | 44080   | R0052       | 71213    | R0060 |
| 40045  | S0005 | 40286  | 30025 | 40548  | S0011 | 40844  | K1221 | 44081   | R0052       | 71213    | R0060 |
| 40046  | S0005 | 40287  | 30025 | 40549  | S0011 | 40845  | K1221 | 44082   | R0052       | 71213    | R0060 |
| 40047  | S0005 | 40288  | 30025 | 40550  | S0011 | 40846  | K1221 | 44083   | R0052       | 71213    | R0060 |
| 40048  | S0005 | 40289  | 30025 | 40551  | S0011 | 40847  | K1221 | 44084   | R0052       | 71213    | R0060 |
| 40049  | S0005 | 40290  | 30025 | 40552  | S0011 | 40848  | K1221 | 44085   | R0052       | 71213    | R0060 |
| 40050  | S0005 | 40291  | 30025 | 40553  | S0011 | 40849  | K1221 | 44086   | R0052       | 71213    | R0060 |
| 40051  | S0005 | 40292  | 30025 | 40554  | S0011 | 40850  | K1221 | 44087   | R0052       | 71213    | R0060 |
| 40052  | S0005 | 40293  | 30025 | 40555  | S0011 | 40851  | K1221 | 44088   | R0052       | 71213    | R0060 |
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| 40056  | S0005 | 40297  | 30025 | 40559  | S0011 | 40855  | K1221 | 44092   | R0052       | 71213    |       |



| DEVICE | HEP   | DEVICE    | HEP   | DEVICE    | HEP   | DEVICE       | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|--------|-------|-----------|-------|-----------|-------|--------------|-------|--------|-------|--------|-------|
| 94043  | S0014 | 99201-124 | Z0231 | 99202-118 | Z0415 | 00000000011Y | K0002 | 110200 | 00003 | 125120 | Z0415 |
| 94044  | S0015 | 99201-126 | Z0234 | 99202-119 | Z0410 | 00000005310  | K0134 | 110200 | 00015 | 125127 | K0054 |
| 94045  | K0134 | 99201-130 | Z0420 | 99202-120 | Z0410 | 0000015108   | K0134 | 110200 | 00005 | 125130 | S0020 |
| 94046  | 00000 | 99201-132 | Z0430 | 99202-121 | Z0419 | 0000015350   | Z0211 | 110314 | K0700 | 125133 | S0030 |
| 94047  | 00002 | 99201-134 | Z0432 | 99202-122 | Z0420 | 0000015351   | 00000 | 110200 | S0015 | 125134 | S0015 |
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| 94051  | 00000 | 99201-142 | Z0434 | 99202-126 | Z0424 | 0000020302   | 00000 | 110750 | K0135 | 125144 | S0020 |
| 94052  | 00002 | 99201-142 | Z0440 | 99202-128 | Z0420 | 000000021M   | K0000 | 110757 | 00000 | 125145 | S0010 |
| 94053  | 00011 | 99201-144 | Z0442 | 99202-130 | Z0426 | 0133334      | K0005 | 110930 | 00005 | 125150 | 00000 |
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| 94055  | 00011 | 99201-147 | Z0445 | 99202-134 | Z0432 | 040001       | 00010 | 110930 | 00005 | 125150 | S0014 |
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| 94057  | 00011 | 99201-200 | Z0450 | 99202-136 | Z0430 | 000150       | K0134 | 117200 | 00007 | 125157 | K0002 |
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| 94059  | 00010 | 99201-209 | Z0411 | 99202-141 | Z0433 | 000220       | 00009 | 117017 | 00003 | 125160 | R0050 |
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| 94063  | 00010 | 99201-216 | Z0222 | 99202-147 | Z0445 | 001027       | 00000 | 117720 | 00000 | 125169 | Z0414 |
| 94064  | 00010 | 99201-219 | Z0415 | 99202-204 | Z0461 | 001029       | 00000 | 117725 | K0003 | 125171 | S0015 |
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| 94067  | 00015 | 99201-222 | Z0420 | 99202-208 | Z0405 | 002000       | S0014 | 117007 | 00000 | 125173 | 00000 |
| 94068  | 00015 | 99201-223 | Z0420 | 99202-209 | Z0405 | 002019       | S0014 | 113244 | K0004 | 125174 | 00000 |
| 94069  | 00015 | 99201-224 | Z0211 | 99202-210 | Z0407 | 002020       | S0014 | 113244 | S0010 | 125175 | S0011 |
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| 94071  | 00015 | 99201-220 | Z0420 | 99202-214 | Z0408 | 002028       | S0014 | 110073 | R0054 | 125176 | K0052 |
| 94072  | 00015 | 99201-224 | Z0420 | 99202-215 | Z0410 | 002033       | S0001 | 113043 | 00003 | 125172 | 00000 |
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| 94075  | 00011 | 99201-235 | Z0433 | 99202-216 | Z0413 | 004071       | K0001 | 113934 | S0015 | 125175 | S0020 |
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| 94079  | 00014 | 99201-242 | Z0440 | 99202-220 | Z0410 | 009174       | 00000 | 113937 | Z0220 | 125176 | S0011 |
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| 94089  | S0424 | 99201-310 | Z0220 | 99202-234 | Z0432 | 010043       | K0002 | 113919 | K0135 | 125187 | C0000 |
| 94090  | S0415 | 99201-320 | Z0225 | 99202-235 | Z0433 | 011775       | S0010 | 113936 | S0015 | 125188 | S0010 |
| 94091  | S0014 | 99201-322 | Z0228 | 99202-238 | Z0430 | 011117       | 00001 | 120073 | S0015 | 125188 | K0052 |
| 94092  | S0015 | 99201-323 | Z0221 | 99202-240 | Z0430 | 011110       | 00000 | 120074 | S0015 | 125188 | K0000 |
| 94093  | S0014 | 99201-324 | Z0422 | 99202-241 | Z0439 | 011270       | S0000 | 120144 | 00005 | 125184 | S0015 |
| 94094  | S0019 | 99201-325 | Z0423 | 99202-242 | Z0440 | 011303       | 00001 | 121100 | K0002 | 125184 | K0054 |
| 94095  | F0010 | 99201-328 | Z0430 | 99202-244 | Z0442 | 011313       | 00000 | 121244 | 00007 | 125184 | S0019 |
| 94096  | S0012 | 99201-330 | Z0430 | 99202-246 | Z0444 | 011320       | 00000 | 121407 | S0013 | 125185 | S0015 |
| 94097  | S0014 | 99201-332 | Z0430 | 99202-247 | Z0445 | 011325       | 00000 | 121505 | S0015 | 125185 | R0050 |
| 94098  | S0014 | 99201-332 | Z0430 | 99202-247 | Z0445 | 011325       | 00000 | 121505 | S0015 | 125185 | R0050 |
| 94099  | R0014 | 99201-334 | Z0432 | 99202-304 | Z0401 | 011350       | 00000 | 121508 | 00003 | 125185 | C0000 |
| 94100  | 00000 | 99201-335 | Z0433 | 99202-305 | Z0402 | 011357       | 00000 | 121501 | 00000 | 125185 | C0000 |
| 94101  | 00000 | 99201-336 | Z0430 | 99202-306 | Z0403 | 011357       | 00000 | 121501 | 00000 | 125185 | S0020 |
| 94102  | S0015 | 99201-340 | Z0430 | 99202-308 | Z0405 | 011350       | S0014 | 121004 | S0015 | 125185 | S0019 |
| 94103  | S0011 | 99201-341 | Z0439 | 99202-309 | Z0400 | 011357       | S0014 | 122074 | S0015 | 125180 | S0019 |
| 94104  | S0011 | 99201-342 | Z0440 | 99202-310 | Z0407 | 011350       | S0014 | 122129 | R0002 | 125170 | S0019 |
| 94105  | 00000 | 99201-344 | Z0442 | 99202-311 | Z0408 | 011359       | S0014 | 122100 | K0135 | 125173 | S0010 |
| 94106  | 00010 | 99201-346 | Z0440 | 99202-312 | Z0409 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
| 94107  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
| 94108  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94117  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94119  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
| 94120  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94122  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94125  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94127  | 00010 | 99201-347 | Z0445 | 99202-313 | Z0410 | 011360       | S0013 | 122243 | 00000 | 125174 | S0010 |
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| 94131  | 00010 | 99201-216 | Z0222 | 99202-147 | Z0445 | 001027       | 00000 | 117720 | 00000 | 125169 | Z0414 |
| 94132  | 00010 | 99201-219 | Z0415 | 99202-204 | Z0461 | 001029       | 00000 | 117725 | K0003 | 125171 | S0015 |
| 94133  | 00010 | 99201-226 | Z0229 | 99202-205 | Z0462 | 001042       | 00010 | 117730 | K0135 | 125172 | K0052 |
| 94134  | 00015 | 99201-221 | Z0429 | 99202-206 | Z0463 | 001059       | 00000 | 117750 | K0135 | 125173 | K0052 |
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| OEVICE | HEP   | OEVICE | HEP   | OEVICE | HEP   | OEVICE | HEP   | OEVICE     | HEP   | OEVICE | HEP   |
|--------|-------|--------|-------|--------|-------|--------|-------|------------|-------|--------|-------|
| 127347 | 00011 | 131343 | S0017 | 130030 | S0015 | 107003 | S0014 | 171100-1   | 00010 | 100010 | S0011 |
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| 127347 | 00010 | 131345 | S0019 | 130032 | S0017 | 107343 | S0017 | 171101-010 | R0002 | 100030 | S0014 |
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| 127347 | 00016 | 131348 | S0022 | 130035 | S0020 | 107343 | R0009 | 171101-009 | S0010 | 100033 | R0002 |
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| 127347 | 00076 | 131408 | S0082 | 130095 | S0080 | 107403 | S0015 | 171101-128 | S0015 | 100093 | S0015 |
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| 127347 | 00079 | 131411 | S0085 | 130098 | S0083 | 107406 | S0015 | 171101-131 | S0015 | 100096 | S0015 |
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| DEVICE | HEP   | DEVICE   | HEP   | DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|--------|-------|----------|-------|----------|-------|--------|-------|--------|-------|--------|-------|
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| A9H    | S0015 | A024-119 | K0030 | A069-120 | S0015 | A481   | S0017 | A1383  | G6001 | A46    | Z0426 |
| A9J    | S0015 | A024-142 | F2005 | A069-121 | G0009 | A482   | S0017 | A1384  | G0001 | A47    | Z0426 |
| A9K    | S0020 | A024-148 | S0014 | A069-122 | S0016 | A483   | S0017 | A1392  | G0015 | A48    | R0050 |
| A9L    | S0014 | A024-150 | K0030 | A100     | K0052 | A484   | S0017 | A1400  | S0015 | A49    | R0052 |
| A9M    | S0024 | A024-151 | Z0410 | A100     | S0015 | A485   | S0017 | A1400  | S0015 | A50    | R0052 |
| A9N    | S0024 | A024-152 | K0030 | A100     | S0015 | A486   | S0017 | A1402  | S0015 | A51    | R0052 |
| A9O    | S0021 | A024-154 | Z0410 | A100     | S0015 | A487   | S0017 | A1402  | S0015 | A52    | R0052 |
| A9P    | S0024 | A024-155 | S0015 | A110     | S0015 | A488   | S0017 | A1403  | S0015 | A53    | R0052 |
| A9T    | S0010 | A024-156 | S0021 | A111     | S0015 | A489   | S0017 | A1420  | S0015 | A54    | R0052 |
| A9U    | S0010 | A024-157 | S0030 | A110     | R0053 | A490   | S0016 | A1421  | S0015 | A55    | R0052 |
| A9V    | S0010 | A024-158 | S0030 | A110     | S0015 | A491   | S0016 | A2237  | S0017 | A56    | R0052 |
| A9W    | S0015 | A024-159 | S0014 | A110     | S0015 | A492   | S0016 | A2332  | S0015 | A57    | R0052 |
| A9X    | S0015 | A024-160 | S0020 | A130     | S0020 | A493   | S0016 | A2411  | S0015 | A58    | R0052 |
| A01    | S0005 | A024-162 | F0015 | A132     | S0020 | A494   | S0016 | A2412  | S0015 | A59    | R0052 |
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| A03    | S0014 | A024-164 | S0014 | A133     | K0052 | A515   | S0024 | A2414  | S0015 | A61    | R0052 |
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| A06    | S0014 | A024-167 | S0014 | A136     | S0015 | A524   | S0024 | A2417  | S0015 | A64    | R0052 |
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| A17    | S0014 | A024-178 | S0014 | A147     | S0015 | A535   | S0024 | A2428  | S0015 | A75    | R0052 |
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| A20    | S0014 | A024-181 | S0014 | A150     | S0015 | A538   | S0024 | A2431  | S0015 | A78    | R0052 |
| A21    | S0014 | A024-182 | S0014 | A151     | S0015 | A539   | S0024 | A2432  | S0015 | A79    | R0052 |
| A22    | S0014 | A024-183 | S0014 | A152     | S0015 | A540   | S0024 | A2433  | S0015 | A80    | R0052 |
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| A24    | S0014 | A024-185 | S0014 | A154     | S0015 | A542   | S0024 | A2435  | S0015 | A82    | R0052 |
| A25    | S0014 | A024-186 | S0014 | A155     | S0015 | A543   | S0024 | A2436  | S0015 | A83    | R0052 |
| A26    | S0014 | A024-187 | S0014 | A156     | S0015 | A544   | S0024 | A2437  | S0015 | A84    | R0052 |
| A27    | S0014 | A024-188 | S0014 | A157     | S0015 | A545   | S0024 | A2438  | S0015 | A85    | R0052 |
| A28    | S0014 | A024-189 | S0014 | A158     | S0015 | A546   | S0024 | A2439  | S0015 | A86    | R0052 |
| A29    | S0014 | A024-190 | S0014 | A159     | S0015 | A547   | S0024 | A2440  | S0015 | A87    | R0052 |
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| A32    | S0014 | A024-193 | S0014 | A162     | S0015 | A550   | S0024 | A2443  | S0015 | A90    | R0052 |
| A33    | S0014 | A024-194 | S0014 | A163     | S0015 | A551   | S0024 | A2444  | S0015 | A91    | R0052 |
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| A35    | S0014 | A024-196 | S0014 | A165     | S0015 | A553   | S0024 | A2446  | S0015 | A93    | R0052 |
| A36    | S0014 | A024-197 | S0014 | A166     | S0015 | A554   | S0024 | A2447  | S0015 | A94    | R0052 |
| A37    | S0014 | A024-198 | S0014 | A167     | S0015 | A555   | S0024 | A2448  | S0015 | A95    | R0052 |
| A38    | S0014 | A024-199 | S0014 | A168     | S0015 | A556   | S0024 | A2449  | S0015 | A96    | R0052 |
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| A41    | S0014 | A024-202 | S0014 | A171     | S0015 | A559   | S0024 | A2452  | S0015 | A99    | R0052 |
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| A47    | S0014 | A024-208 | S0014 | A177     | S0015 | A565   | S0024 | A2458  | S0015 | A05    | R0052 |
| A48    | S0014 | A024-209 | S0014 | A178     | S0015 | A566   | S0024 | A2459  | S0015 | A06    | R0052 |
| A49    | S0014 | A024-210 | S0014 | A179     | S0015 | A567   | S0024 | A2460  | S0015 | A07    | R0052 |
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| A55    | S0014 | A024-216 | S0014 | A185     | S0015 | A573   | S0024 | A2466  | S0015 | A13    | R0052 |
| A56    | S0014 | A024-217 | S0014 | A186     | S0015 | A574   | S0024 | A2467  | S0015 | A14    | R0052 |
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| A58    | S0014 | A024-219 | S0014 | A188     | S0015 | A576   | S0024 | A2469  | S0015 | A16    | R0052 |
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| A70    | S0014 | A024-231 | S0014 | A200     | S0015 | A588   | S0024 | A2481  | S0015 | A28    | R0052 |
| A71    | S0014 | A024-232 | S0014 | A201     | S0015 | A589   | S0024 | A2482  | S0015 | A29    | R0052 |
| A72    | S0014 | A024-233 | S0014 | A202     | S0015 | A590   | S0024 | A2483  | S0015 | A30    | R0052 |
| A73    | S0014 | A024-234 | S0014 | A203     | S0015 | A591   | S0024 | A2484  | S0015 | A31    | R0052 |
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| A81    | S0014 | A024-242 | S0014 | A211     | S0015 | A599   | S0024 | A2492  | S0015 | A39    | R0052 |
| A82    | S0014 | A024-243 | S0014 | A212     | S0015 | A600   | S0024 | A2493  | S0015 | A40    | R0052 |
| A83    | S0014 | A024-244 | S0014 | A213     | S0015 | A601   | S0024 | A2494  | S0015 | A41    | R0052 |
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| DEVICE   | HEP   | DEVICE    | HEP   | DEVICE | HEP   | DEVICE    | HEP   | DEVICE   | HEP   | DEVICE | HEP   |
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| AC160d   | G0009 | A016y     | 5b016 | AFY160 | G0002 | AMF 114   | 57004 | AK222BY  | S0020 | AT310  | S0016 |
| AC161    | G0005 | A026z     | 6b016 | AFY17  | S0012 | AMF 115   | 57002 | AK224    | S0020 | AT311  | S0016 |
| AC162    | G0005 | A026z     | 6b016 | AFY14  | G0003 | AMF 116   | 57002 | AK230    | S0015 | AT312  | S0016 |
| AC163    | G0005 | A04001    | R0020 | AFY17  | G0003 | AMF 117   | 57002 | AK240    | S0015 | AT313  | S0016 |
| AC164    | G0005 | AD-29B    | R0056 | AFY13  | G0003 | AMF 117A  | 57002 | AR-17    | S0015 | AT314  | S0016 |
| AC165    | G0005 | AD-29B    | R0056 | AFY14  | G0003 | AMF 116   | 57002 | AK-200   | S0015 | AT315  | S0016 |
| AC166    | G0005 | ADY22     | 6b003 | AFY44  | G0003 | AMF 118   | 57002 | AK-200   | S0015 | AT316  | S0016 |
| AC167    | G0005 | ADY23     | 6b005 | AFY40  | G0003 | AMF 119   | 57002 | AK-202   | S0015 | AT317  | S0016 |
| AC168    | G0005 | ADY24     | 6b005 | AFY41  | G0003 | AMF 119A  | 57002 | AS2      | R0052 | AT318  | S0016 |
| AC169    | G0005 | AUY26     | 6b010 | AFY42  | G0008 | AMF 120   | 57002 | AS3      | R0052 | AT321  | S0016 |
| AC170    | G0005 | ADY27     | 6b003 | AFZ11  | G0005 | AMF 120A  | 57002 | AS4      | R0053 | AT322  | S0016 |
| AC171    | G0005 | AUY28     | 6b010 | AFZ12  | G0003 | AMF 121   | 57000 | AS5      | R0053 | AT323  | S0016 |
| AC172    | G0011 | ADY33     | 6b002 | A01000 | R0052 | AMF 121A  | 57000 | AS6      | R0054 | AT324  | S0016 |
| AC173    | G0005 | ADZ11     | 6b004 | A01000 | R0055 | AMF 122   | 57000 | AS7      | R0053 | AT325  | S0016 |
| AC175    | G0011 | ADZ12     | 6b000 | A01000 | R0054 | AMF 122A  | 57000 | AS4//    | R0053 | AT326  | S0016 |
| AC176    | G0011 | AEK79040  | 57002 | A0150  | R0052 | AMF 123   | 57000 | AS33007  | G0005 | AT327  | S0015 |
| AC176k   | G0011 | AEK-70001 | R0220 | A01000 | R0055 | AMF 123A  | 57000 | AS33008  | G0005 | AT328  | S0015 |
| AC177    | G0005 | AEK-70002 | R0220 | A01000 | R0055 | AMF 124   | 57000 | AS34200  | G0005 | AT329  | S0015 |
| AC179    | G0005 | AF101     | 6b005 | AM010  | R0055 | AMF 124A  | 57000 | AS712    | G0005 | AT330  | S0015 |
| AC180    | G0005 | AF102     | 6b003 | AM1000 | R0056 | AMF 201   | 57004 | AS712-1  | G0003 | AT331  | S0015 |
| AC180K   | G0011 | AF105     | G0003 | AM1010 | R0056 | AMF 201A  | 57004 | AS712-2  | G0005 | AT332  | S0015 |
| AC182    | G0005 | AF106     | G0003 | AM1015 | R0056 | AMF 201B  | 57004 | AS715    | G0005 | AT333  | S0016 |
| AC183    | G0011 | AF107     | 6b002 | AIC    | S0017 | AMF 201C  | 57004 | AS713-1  | G0005 | AT334  | S0016 |
| AC184    | G0005 | AF108     | 6b002 | AJS    | R0050 | AMF 210   | 57004 | AS713-2  | G0005 | AT337  | S0015 |
| AC185    | G0011 | AF109     | 6b003 | AJS    | R0052 | AMF 210A  | 57004 | AS714    | G0005 | AT338  | S0015 |
| AC186    | G0011 | AF109K    | 6b003 | AJS    | R0052 | AMF 210B  | 57004 | AS714-1  | G0005 | AT339  | S0015 |
| AC187    | G0011 | AF110     | 6b002 | AJS    | R0052 | AMF 210C  | 57004 | AS714-2  | G0005 | AT340  | S0015 |
| AC187/01 | G0011 | AF111     | 6b009 | AJS    | R0053 | AMF 210D  | 57004 | AS714-3  | G0005 | AT341  | S0015 |
| AC188    | G0011 | AF112     | 6b009 | AJS    | R0053 | AMF 210E  | 57004 | AS724    | G0005 | AT342  | S0017 |
| AC188/01 | G0005 | AF113     | 6b009 | AJS    | R0053 | AMF 210F  | 57004 | AS720    | G0005 | AT343  | S0017 |
| AC188K   | G0011 | AF114     | 6b003 | AJS    | R0053 | AMF 210G  | 57004 | AS727    | G0005 | AT344  | S0025 |
| AC191    | G0005 | AF114N    | 6b000 | AJS    | R0054 | AMF 210H  | 57004 | AS728    | G0011 | AT345  | S0025 |
| AC192    | G0005 | AF115     | 6b005 | AJS    | R0054 | AMF 210I  | 57004 | AS729    | G0011 | AT346  | S0025 |
| AC193    | G0011 | AF115N    | 6b000 | AL100  | G0007 | AMF 210J  | 57004 | AS731    | G0005 | AT347  | S0025 |
| AC193K   | G0011 | AF116     | 6b005 | AL101  | G0005 | AMF 210K  | 57004 | AS732    | G0005 | AT348  | S0025 |
| AC200    | R0034 | AF116N    | 6b006 | AL102  | G0007 | AMF 210L  | 57004 | AS740    | G0005 | AT349  | S0025 |
| AC200K   | R0034 | AF117     | 6b006 | AL103  | G0007 | AMF 210M  | 57004 | AS740V   | G0005 | AT350  | S0025 |
| AC200    | R0034 | AF117N    | 6b006 | AL104  | G0007 | AMF 210N  | 57004 | AS740V1  | G0005 | AT351  | S0025 |
| AC200    | R0034 | AF118     | 6b006 | AL105  | G0007 | AMF 210O  | 57004 | AS740V2  | G0005 | AT352  | S0025 |
| AC200    | R0034 | AF119     | 6b006 | AL106  | G0007 | AMF 210P  | 57004 | AS740V3  | G0005 | AT353  | S0025 |
| AC200    | R0034 | AF120     | 6b006 | AL107  | G0007 | AMF 210Q  | 57004 | AS740V4  | G0005 | AT354  | S0025 |
| AC200    | R0034 | AF121     | 6b006 | AL108  | G0007 | AMF 210R  | 57004 | AS740V5  | G0005 | AT355  | S0025 |
| AC200    | R0034 | AF122     | 6b006 | AL109  | G0007 | AMF 210S  | 57004 | AS740V6  | G0005 | AT356  | S0025 |
| AC200    | R0034 | AF123     | 6b006 | AL110  | G0007 | AMF 210T  | 57004 | AS740V7  | G0005 | AT357  | S0025 |
| AC200    | R0034 | AF124     | 6b006 | AL111  | G0007 | AMF 210U  | 57004 | AS740V8  | G0005 | AT358  | S0025 |
| AC200    | R0034 | AF125     | 6b006 | AL112  | G0007 | AMF 210V  | 57004 | AS740V9  | G0005 | AT359  | S0025 |
| AC200    | R0034 | AF126     | 6b006 | AL113  | G0007 | AMF 210W  | 57004 | AS740V10 | G0005 | AT360  | S0025 |
| AC200    | R0034 | AF127     | 6b006 | AL114  | G0007 | AMF 210X  | 57004 | AS740V11 | G0005 | AT361  | S0025 |
| AC200    | R0034 | AF128     | 6b006 | AL115  | G0007 | AMF 210Y  | 57004 | AS740V12 | G0005 | AT362  | S0025 |
| AC200    | R0034 | AF129     | 6b006 | AL116  | G0007 | AMF 210Z  | 57004 | AS740V13 | G0005 | AT363  | S0025 |
| AC200    | R0034 | AF130     | 6b006 | AL117  | G0007 | AMF 210AA | 57004 | AS740V14 | G0005 | AT364  | S0025 |
| AC200    | R0034 | AF131     | 6b006 | AL118  | G0007 | AMF 210AB | 57004 | AS740V15 | G0005 | AT365  | S0025 |
| AC200    | R0034 | AF132     | 6b006 | AL119  | G0007 | AMF 210AC | 57004 | AS740V16 | G0005 | AT366  | S0025 |
| AC200    | R0034 | AF133     | 6b006 | AL120  | G0007 | AMF 210AD | 57004 | AS740V17 | G0005 | AT367  | S0025 |
| AC200    | R0034 | AF134     | 6b006 | AL121  | G0007 | AMF 210AE | 57004 | AS740V18 | G0005 | AT368  | S0025 |
| AC200    | R0034 | AF135     | 6b006 | AL122  | G0007 | AMF 210AF | 57004 | AS740V19 | G0005 | AT369  | S0025 |
| AC200    | R0034 | AF136     | 6b006 | AL123  | G0007 | AMF 210AG | 57004 | AS740V20 | G0005 | AT370  | S0025 |
| AC200    | R0034 | AF137     | 6b006 | AL124  | G0007 | AMF 210AH | 57004 | AS740V21 | G0005 | AT371  | S0025 |
| AC200    | R0034 | AF138     | 6b006 | AL125  | G0007 | AMF 210AI | 57004 | AS740V22 | G0005 | AT372  | S0025 |
| AC200    | R0034 | AF139     | 6b006 | AL126  | G0007 | AMF 210AJ | 57004 | AS740V23 | G0005 | AT373  | S0025 |
| AC200    | R0034 | AF140     | 6b006 | AL127  | G0007 | AMF 210AK | 57004 | AS740V24 | G0005 | AT374  | S0025 |
| AC200    | R0034 | AF141     | 6b006 | AL128  | G0007 | AMF 210AL | 57004 | AS740V25 | G0005 | AT375  | S0025 |
| AC200    | R0034 | AF142     | 6b006 | AL129  | G0007 | AMF 210AM | 57004 | AS740V26 | G0005 | AT376  | S0025 |
| AC200    | R0034 | AF143     | 6b006 | AL130  | G0007 | AMF 210AN | 57004 | AS740V27 | G0005 | AT377  | S0025 |
| AC200    | R0034 | AF144     | 6b006 | AL131  | G0007 | AMF 210AO | 57004 | AS740V28 | G0005 | AT378  | S0025 |
| AC200    | R0034 | AF145     | 6b006 | AL132  | G0007 | AMF 210AP | 57004 | AS740V29 | G0005 | AT379  | S0025 |
| AC200    | R0034 | AF146     | 6b006 | AL133  | G0007 | AMF 210AQ | 57004 | AS740V30 | G0005 | AT380  | S0025 |
| AC200    | R0034 | AF147     | 6b006 | AL134  | G0007 | AMF 210AR | 57004 | AS740V31 | G0005 | AT381  | S0025 |
| AC200    | R0034 | AF148     | 6b006 | AL135  | G0007 | AMF 210AS | 57004 | AS740V32 | G0005 | AT382  | S0025 |
| AC200    | R0034 | AF149     | 6b006 | AL136  | G0007 | AMF 210AT | 57004 | AS740V33 | G0005 | AT383  | S0025 |
| AC200    | R0034 | AF150     | 6b006 | AL137  | G0007 | AMF 210AU | 57004 | AS740V34 | G0005 | AT384  | S0025 |
| AC200    | R0034 | AF151     | 6b006 | AL138  | G0007 | AMF 210AV | 57004 | AS740V35 | G0005 | AT385  | S0025 |
| AC200    | R0034 | AF152     | 6b006 | AL139  | G0007 | AMF 210AW | 57004 | AS740V36 | G0005 | AT386  | S0025 |
| AC200    | R0034 | AF153     | 6b006 | AL140  | G0007 | AMF 210AX | 57004 | AS740V37 | G0005 | AT387  | S0025 |
| AC200    | R0034 | AF154     | 6b006 | AL141  | G0007 | AMF 210AY | 57004 | AS740V38 | G0005 | AT388  | S0025 |
| AC200    | R0034 | AF155     | 6b006 | AL142  | G0007 | AMF 210AZ | 57004 | AS740V39 | G0005 | AT389  | S0025 |
| AC200    | R0034 | AF156     | 6b006 | AL143  | G0007 | AMF 210BA | 57004 | AS740V40 | G0005 | AT390  | S0025 |
| AC200    | R0034 | AF157     | 6b006 | AL144  | G0007 | AMF 210BB | 57004 | AS740V41 | G0005 | AT391  | S0025 |
| AC200    | R0034 | AF158     | 6b006 | AL145  | G0007 | AMF 210BC | 57004 | AS740V42 | G0005 | AT392  | S0025 |
| AC200    | R0034 | AF159     | 6b006 | AL146  | G0007 | AMF 210BD | 57004 | AS740V43 | G0005 | AT393  | S0025 |
| AC200    | R0034 | AF160     | 6b006 | AL147  | G0007 | AMF 210BE | 57004 | AS740V44 | G0005 | AT394  | S0025 |
| AC200    | R0034 | AF161     | 6b006 | AL148  | G0007 | AMF 210BF | 57004 | AS740V45 | G0005 | AT395  | S0025 |
| AC200    | R0034 | AF162     | 6b006 | AL149  | G0007 | AMF 210BG | 57004 | AS740V46 | G0005 | AT396  | S0025 |
| AC200    | R0034 | AF163     | 6b006 | AL150  | G0007 | AMF 210BH | 57004 | AS740V47 | G0005 | AT397  | S0025 |
| AC200    | R0034 | AF164     | 6b006 | AL151  | G0007 | AMF 210BI | 57004 | AS740V48 | G0005 | AT398  | S0025 |
| AC200    | R0034 | AF165     | 6b006 | AL152  | G0007 | AMF 210BJ | 57004 | AS740V49 | G0005 | AT399  | S0025 |
| AC200    | R0034 | AF166     | 6b006 | AL153  | G0007 | AMF 210BK | 57004 | AS740V50 | G0005 | AT400  | S0025 |
| AC200    | R0034 | AF167     | 6b006 | AL154  | G0007 | AMF 210BL | 57004 | AS740V51 | G0005 | AT401  | S0025 |
| AC200    | R0034 | AF168     | 6b006 | AL155  | G0007 | AMF 210BM | 57004 | AS740V52 | G0005 | AT402  | S0025 |
| AC200    | R0034 | AF169     | 6b006 | AL156  | G0007 | AMF 210BN | 57004 | AS740V53 | G0005 | AT403  | S0025 |
| AC200    | R0034 | AF170     | 6b006 | AL157  | G0007 | AMF 210BO | 57004 | AS740V54 | G0005 | AT404  | S0025 |
| AC200    | R0034 | AF171     | 6b006 | AL158  | G0007 | AMF 210BP | 57    |          |       |        |       |

| DEVICE | HEP   | DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|--------|-------|----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| AT448  | S3011 | AW01-7   | Z0409 | u2c1   | K0053 | b5b5   | K0094 | u3141  | S3002 | d-b001 | Fu010 |
| AT450  | S3013 | AW01-9   | Z0412 | u2c2   | K0053 | b5b9   | K0094 | u3145  | S3002 | J-b002 | Z0418 |
| AT451  | S3019 | AW01-10  | Z0410 | u2c3   | K0053 | u0m1   | K0094 | u3147  | S3002 | o-b0   | u0065 |
| AT452  | S3019 | AW01-10  | Z0411 | u2c4   | S0015 | u0m5   | K0094 | u3148  | S3002 | u0b7   | G0005 |
| AT453  | S3019 | AW01-10  | Z0412 | u2c5   | K0053 | u0m5   | K0094 | u3149  | S3004 | b-b07  | S0015 |
| AT454  | S3013 | AW01-11  | Z0414 | u2c6   | K0053 | u0k5   | K0094 | u3150  | S3004 | 3-A71  | K0051 |
| AT455  | S3013 | AW01-12  | Z0415 | u2c7   | K0053 | u0k9   | K0094 | u3151  | S3004 | u-A100 | R2502 |
| AT460  | S3012 | AW01-12G | Z0415 | u2c8   | S0000 | u0m1   | K0094 | u3152  | S3004 | u-A100 | R0055 |
| AT461  | S3012 | AW01-13  | Z0410 | u2c9   | K0054 | u0m5   | K0094 | u3153  | S3004 | u-A100 | K0050 |
| AT462  | S3012 | AW01-16  | Z0419 | u2c9   | K0054 | u0m9   | K0094 | u3153  | S3004 | u-A100 | K0050 |
| AT463  | S3012 | AW01-22  | Z0422 | u2F9   | K0054 | u0a1   | K0094 | u3154  | S3004 | u-A110 | K0051 |
| AT464  | S3014 | AW01-24  | Z0423 | u2F-1  | S0000 | u0a2   | K0094 | u3155  | S3004 | u-A110 | K0054 |
| AT465  | S3012 | AW01-30  | Z0420 | u2F-2  | K0054 | u0a3   | K0094 | u3156  | S3004 | u-A110 | R0052 |
| AT466  | S3012 | AW01-32  | Z0422 | u2c0   | S0015 | u0d1   | R0094 | u3157  | S3004 | u-A110 | K0054 |
| AT467  | S3012 | AW01-37  | Z0412 | u2c1   | K0054 | u0b5   | K0094 | u3158  | S3004 | u-A127 | K0052 |
| AT468  | S3012 | AW01-40  | Z0411 | u2c2   | K0054 | u0b9   | K0094 | u3159  | S3004 | u-A135 | K0052 |
| AT470  | S3011 | AW01-49  | Z0412 | u2c3   | R0054 | u0c5   | K0094 | u3160  | S3004 | u-A135 | K0050 |
| AT471  | S3011 | AW01-50  | Z0411 | u2c4   | K0054 | u0c9   | K0094 | u3161  | S3004 | u-A144 | K0050 |
| AT472  | S3012 | AW01-52  | Z0410 | u2c5   | K0054 | u0d1   | K0094 | u3162  | S3004 | u-A145 | K0052 |
| AT473  | S3011 | AW01-53  | Z0410 | u2c6   | K0054 | u0d5   | K0094 | u3163  | S3004 | u-A145 | K0052 |
| AT474  | S3011 | AW01-54  | Z0408 | u2c7   | S0000 | u0d9   | K0094 | u3164  | S3000 | u-A140 | K0053 |
| AT475  | S3012 | AW01-55  | Z0410 | u2c8   | S5000 | u0f1   | K0094 | u3165  | u0001 | u-A170 | K0050 |
| AT476  | S3011 | AW01-56  | Z0411 | u2c9   | S0000 | u0f5   | K0094 | u3166  | u0001 | u-A170 | K0050 |
| AT477  | S3011 | AW01-57  | Z0412 | u2c0   | S0004 | u0f9   | K0094 | u3167  | u0001 | u-A170 | K0050 |
| AT478  | S3006 | AW01-58  | Z0412 | u2c1   | K0054 | u0f1   | K0094 | u3168  | u0001 | u-A170 | K0050 |
| AT479  | S3011 | AW01-59  | Z0415 | u2c2   | K0054 | u0f5   | K0094 | u3169  | u0001 | u-A170 | K0050 |
| AT480  | S3012 | AW01-60  | Z0417 | u2c3   | K0054 | u0f9   | K0094 | u3170  | u0001 | u-A170 | K0050 |
| AT481  | S3012 | AW01-61  | Z0417 | u2c4   | K0054 | u0f1   | K0094 | u3171  | u0001 | u-A170 | K0050 |
| AT482  | S3012 | AW01-62  | Z0419 | u2c5   | K0054 | u0f5   | K0094 | u3172  | u0001 | u-A170 | K0050 |
| AT483  | S3012 | AW01-63  | Z0420 | u2c6   | K0054 | u0f9   | K0094 | u3173  | u0001 | u-A170 | K0050 |
| AT484  | S3012 | AW01-64  | Z0420 | u2c7   | S0000 | u0f9   | K0094 | u3174  | u0001 | u-A170 | K0050 |
| AT485  | S3012 | AW01-65  | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3175  | u0001 | u-A170 | K0050 |
| AT486  | S3011 | AW01-66  | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3176  | u0001 | u-A170 | K0050 |
| AT487  | S3011 | AW01-67  | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3177  | u0001 | u-A170 | K0050 |
| AT488  | S3011 | AW01-68  | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3178  | u0001 | u-A170 | K0050 |
| AT489  | S3011 | AW01-69  | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3179  | u0001 | u-A170 | K0050 |
| AT490  | S3011 | AW01-70  | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3180  | u0001 | u-A170 | K0050 |
| AT491  | S3011 | AW01-71  | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3181  | u0001 | u-A170 | K0050 |
| AT492  | S3011 | AW01-72  | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3182  | u0001 | u-A170 | K0050 |
| AT493  | S3011 | AW01-73  | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3183  | u0001 | u-A170 | K0050 |
| AT494  | S3011 | AW01-74  | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3184  | u0001 | u-A170 | K0050 |
| AT495  | S3011 | AW01-75  | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3185  | u0001 | u-A170 | K0050 |
| AT496  | S3011 | AW01-76  | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3186  | u0001 | u-A170 | K0050 |
| AT497  | S3011 | AW01-77  | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3187  | u0001 | u-A170 | K0050 |
| AT498  | S3011 | AW01-78  | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3188  | u0001 | u-A170 | K0050 |
| AT499  | S3011 | AW01-79  | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3189  | u0001 | u-A170 | K0050 |
| AT500  | S3011 | AW01-80  | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3190  | u0001 | u-A170 | K0050 |
| AT501  | S3011 | AW01-81  | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3191  | u0001 | u-A170 | K0050 |
| AT502  | S3011 | AW01-82  | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3192  | u0001 | u-A170 | K0050 |
| AT503  | S3011 | AW01-83  | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3193  | u0001 | u-A170 | K0050 |
| AT504  | S3011 | AW01-84  | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3194  | u0001 | u-A170 | K0050 |
| AT505  | S3011 | AW01-85  | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3195  | u0001 | u-A170 | K0050 |
| AT506  | S3011 | AW01-86  | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3196  | u0001 | u-A170 | K0050 |
| AT507  | S3011 | AW01-87  | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3197  | u0001 | u-A170 | K0050 |
| AT508  | S3011 | AW01-88  | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3198  | u0001 | u-A170 | K0050 |
| AT509  | S3011 | AW01-89  | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3199  | u0001 | u-A170 | K0050 |
| AT510  | S3011 | AW01-90  | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3200  | u0001 | u-A170 | K0050 |
| AT511  | S3011 | AW01-91  | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3201  | u0001 | u-A170 | K0050 |
| AT512  | S3011 | AW01-92  | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3202  | u0001 | u-A170 | K0050 |
| AT513  | S3011 | AW01-93  | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3203  | u0001 | u-A170 | K0050 |
| AT514  | S3011 | AW01-94  | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3204  | u0001 | u-A170 | K0050 |
| AT515  | S3011 | AW01-95  | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3205  | u0001 | u-A170 | K0050 |
| AT516  | S3011 | AW01-96  | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3206  | u0001 | u-A170 | K0050 |
| AT517  | S3011 | AW01-97  | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3207  | u0001 | u-A170 | K0050 |
| AT518  | S3011 | AW01-98  | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3208  | u0001 | u-A170 | K0050 |
| AT519  | S3011 | AW01-99  | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3209  | u0001 | u-A170 | K0050 |
| AT520  | S3011 | AW01-100 | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3210  | u0001 | u-A170 | K0050 |
| AT521  | S3011 | AW01-101 | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3211  | u0001 | u-A170 | K0050 |
| AT522  | S3011 | AW01-102 | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3212  | u0001 | u-A170 | K0050 |
| AT523  | S3011 | AW01-103 | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3213  | u0001 | u-A170 | K0050 |
| AT524  | S3011 | AW01-104 | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3214  | u0001 | u-A170 | K0050 |
| AT525  | S3011 | AW01-105 | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3215  | u0001 | u-A170 | K0050 |
| AT526  | S3011 | AW01-106 | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3216  | u0001 | u-A170 | K0050 |
| AT527  | S3011 | AW01-107 | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3217  | u0001 | u-A170 | K0050 |
| AT528  | S3011 | AW01-108 | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3218  | u0001 | u-A170 | K0050 |
| AT529  | S3011 | AW01-109 | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3219  | u0001 | u-A170 | K0050 |
| AT530  | S3011 | AW01-110 | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3220  | u0001 | u-A170 | K0050 |
| AT531  | S3011 | AW01-111 | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3221  | u0001 | u-A170 | K0050 |
| AT532  | S3011 | AW01-112 | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3222  | u0001 | u-A170 | K0050 |
| AT533  | S3011 | AW01-113 | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3223  | u0001 | u-A170 | K0050 |
| AT534  | S3011 | AW01-114 | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3224  | u0001 | u-A170 | K0050 |
| AT535  | S3011 | AW01-115 | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3225  | u0001 | u-A170 | K0050 |
| AT536  | S3011 | AW01-116 | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3226  | u0001 | u-A170 | K0050 |
| AT537  | S3011 | AW01-117 | Z0420 | u2c0   | K0054 | u0f5   | K0094 | u3227  | u0001 | u-A170 | K0050 |
| AT538  | S3011 | AW01-118 | Z0420 | u2c1   | K0054 | u0f9   | K0094 | u3228  | u0001 | u-A170 | K0050 |
| AT539  | S3011 | AW01-119 | Z0420 | u2c2   | K0054 | u0f5   | K0094 | u3229  | u0001 | u-A170 | K0050 |
| AT540  | S3011 | AW01-120 | Z0420 | u2c3   | K0054 | u0f9   | K0094 | u3230  | u0001 | u-A170 | K0050 |
| AT541  | S3011 | AW01-121 | Z0420 | u2c4   | K0054 | u0f5   | K0094 | u3231  | u0001 | u-A170 | K0050 |
| AT542  | S3011 | AW01-122 | Z0420 | u2c5   | K0054 | u0f9   | K0094 | u3232  | u0001 | u-A170 | K0050 |
| AT543  | S3011 | AW01-123 | Z0420 | u2c6   | K0054 | u0f5   | K0094 | u3233  | u0001 | u-A170 | K0050 |
| AT544  | S3011 | AW01-124 | Z0420 | u2c7   | K0054 | u0f9   | K0094 | u3234  | u0001 | u-A170 | K0050 |
| AT545  | S3011 | AW01-125 | Z0420 | u2c8   | K0054 | u0f5   | K0094 | u3235  | u0001 | u-A170 | K0050 |
| AT546  | S3011 | AW01-126 | Z0420 | u2c9   | K0054 | u0f9   | K0094 | u3236  | u0    |        |       |

|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BAV60 | BAV61 | BAV62 | BAV63 | BAV64 | BAV65 | BAV66 | BAV67 | BAV68 | BAV69 | BAV70 | BAV71 | BAV72 | BAV73 | BAV74 | BAV75 | BAV76 | BAV77 | BAV78 | BAV79 | BAV80 | BAV81 | BAV82 | BAV83 | BAV84 | BAV85 | BAV86 | BAV87 | BAV88 | BAV89 | BAV90 | BAV91 | BAV92 | BAV93 | BAV94 | BAV95 | BAV96 | BAV97 | BAV98 | BAV99 | BAV00 |
| 55015 | 55016 | 55017 | 55018 | 55019 | 55020 | 55021 | 55022 | 55023 | 55024 | 55025 | 55026 | 55027 | 55028 | 55029 | 55030 | 55031 | 55032 | 55033 | 55034 | 55035 | 55036 | 55037 | 55038 | 55039 | 55040 | 55041 | 55042 | 55043 | 55044 | 55045 | 55046 | 55047 | 55048 | 55049 | 55050 | 55051 | 55052 | 55053 | 55054 | 55055 |
| HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   | HEP   |       |







| DEVICE | HEP   | DEVICE   | HEP   | DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE  | HEP    |
|--------|-------|----------|-------|----------|-------|--------|-------|--------|-------|---------|--------|
| B7020  | R0130 | BZ-071   | Z0410 | BZ0500V8 | Z0215 | U11A   | R1242 | C10001 | R1222 | B094    | S0025  |
| B7027  | R0130 | BZ-080   | Z0412 | BZ0500V8 | Z0217 | U11A-U | R1243 | C10003 | R1222 | B095    | S0015  |
| B7028  | R0137 | BZ-090   | Z0412 | BZ0500V1 | Z0219 | C110   | R1243 | C10004 | R1222 | U1001   | S0011  |
| B7029  | R0137 | BZ-094   | Z0412 | BZ0500V1 | Z0220 | U11C   | R1244 | C10005 | R1222 | U1002   | S0024  |
| B71001 | R0030 | BZ-110   | Z0414 | BZ0500V2 | Z0222 | U11D   | R1245 | C10006 | R1222 | C1003   | S0015  |
| B71005 | R0030 | BZ-102   | Z0410 | BZ0500V1 | Z0225 | U11E   | R1246 | C10007 | R1222 | U1004   | S0015  |
| B71102 | R0030 | BZ-090V1 | Z0412 | BZ0500V2 | Z0230 | U11F   | R1241 | C10008 | R1220 | U1001A  | S0000  |
| B71201 | R0030 | BZ110    | Z0408 | BZ0500V7 | Z0231 | U11G   | R1243 | C10009 | R1220 | U1001B  | S0000  |
| B71202 | R0030 | BZ114    | Z0412 | BZ0500V8 | Z0230 | U11H   | R1244 | C10010 | R1220 | U1222   | S0015  |
| B72001 | R0130 | BZ117    | Z0415 | BZ0500V8 | Z0215 | U12A   | R1242 | C10011 | R1220 | C1048   | G0005  |
| B72002 | R0130 | BZ119    | Z0418 | BZ0500V8 | Z0217 | U12B   | R1243 | C10012 | R1220 | U3071   | C0071P |
| B72101 | R0130 | BZ120    | Z0424 | BZ0500V1 | Z0220 | U12C   | R1244 | C10013 | R1220 | U3071   | Z0214  |
| B72102 | R0130 | BZ121    | Z0420 | BZ0500V1 | Z0222 | U12D   | R1244 | C10014 | R1220 | U3071   | Z0215  |
| B72201 | R0130 | BZ122    | Z0407 | BZ0500V1 | Z0225 | U12E   | R1241 | C10015 | R1220 | U3071   | Z0217  |
| B72202 | R0130 | BZ123    | Z0407 | BZ0500V1 | Z0228 | U12F   | R1241 | C10016 | R1220 | U3071   | Z0219  |
| B73001 | R0130 | BZ124    | Z0424 | BZ0500V2 | Z0231 | U12G   | R1244 | C10017 | R1220 | U3071   | Z0220  |
| B73002 | R0130 | BZ125    | Z0433 | BZ0500V3 | Z0236 | U12H   | R1244 | C10018 | R1220 | U3071   | Z0222  |
| B73101 | R0130 | BZ126    | Z0430 | BZ0500V3 | Z0402 | U12I   | R1244 | C10019 | R1244 | U1071A  | Z0225  |
| B73102 | R0130 | BZ127    | Z0212 | BZ0500V9 | Z0267 | U12J   | R1243 | C10020 | R1243 | U1071B  | Z0228  |
| B73201 | R0130 | BZ128    | Z0214 | BZ0500V7 | Z0210 | U12K   | R1242 | C10021 | R1243 | U1071C  | Z0230  |
| B73202 | R0130 | BZ129    | Z0215 | BZ0500V1 | Z0211 | U12L   | R1244 | C10022 | R1244 | U1071D  | Z0231  |
| B74001 | R0130 | BZ130    | Z0217 | BZ0500V2 | Z0212 | U12M   | R1245 | C10023 | R1245 | U1071E  | Z0234  |
| B74002 | R0130 | BZ131    | Z0219 | BZ0500V1 | Z0214 | U12N   | R1245 | C10024 | R1245 | U1071F  | Z0211  |
| B74101 | R0130 | BZ132    | Z0220 | BZ0500V2 | Z0215 | U12O   | R1241 | C10025 | R1241 | U1071G  | S0013  |
| B74102 | R0130 | BZ133    | Z0222 | BZ0500V2 | Z0217 | U12P   | R1241 | C10026 | R1241 | U1071H  | S0013  |
| B74201 | R0130 | BZ134    | Z0225 | BZ0500V1 | Z0219 | U12Q   | R1244 | C10027 | R1244 | U1071I  | S0013  |
| B74202 | R0130 | BZ135    | Z0228 | BZ0500V2 | Z0220 | U12R   | R1244 | C10028 | R1220 | U1071J  | S0012  |
| B75001 | R0130 | BZ136    | Z0230 | BZ0500V3 | Z0222 | U12S   | R1244 | C10029 | R1244 | U1071K  | S0012  |
| B75002 | R0130 | BZ137    | Z0231 | BZ0500V3 | Z0225 | U12T   | R1244 | C10030 | R1244 | U1071L  | S0012  |
| B75101 | R0130 | BZ138    | Z0214 | BZ0500V7 | Z0210 | U12U   | R1243 | C10031 | R1243 | U1071M  | S0013  |
| B75102 | R0130 | BZ139    | Z0215 | BZ0500V1 | Z0211 | U12V   | R1244 | C10032 | R1244 | U1071N  | S0013  |
| B75201 | R0130 | BZ140    | Z0217 | BZ0500V2 | Z0212 | U12W   | R1245 | C10033 | R1245 | U1071O  | Z0234  |
| B75202 | R0130 | BZ141    | Z0219 | BZ0500V1 | Z0214 | U12X   | R1245 | C10034 | R1245 | U1071P  | Z0211  |
| B76001 | R0130 | BZ142    | Z0220 | BZ0500V2 | Z0215 | U12Y   | R1241 | C10035 | R1241 | U1071Q  | S0013  |
| B76002 | R0130 | BZ143    | Z0222 | BZ0500V2 | Z0217 | U12Z   | R1241 | C10036 | R1241 | U1071R  | S0013  |
| B76101 | R0130 | BZ144    | Z0225 | BZ0500V1 | Z0219 | U12AA  | R1244 | C10037 | R1244 | U1071S  | S0013  |
| B76102 | R0130 | BZ145    | Z0228 | BZ0500V2 | Z0220 | U12AB  | R1244 | C10038 | R1220 | U1071T  | S0012  |
| B76201 | R0130 | BZ146    | Z0230 | BZ0500V3 | Z0222 | U12AC  | R1244 | C10039 | R1244 | U1071U  | S0012  |
| B76202 | R0130 | BZ147    | Z0231 | BZ0500V3 | Z0225 | U12AD  | R1244 | C10040 | R1244 | U1071V  | S0012  |
| B77001 | R0130 | BZ148    | Z0214 | BZ0500V7 | Z0210 | U12AE  | R1243 | C10041 | R1243 | U1071W  | S0013  |
| B77002 | R0130 | BZ149    | Z0215 | BZ0500V1 | Z0211 | U12AF  | R1244 | C10042 | R1244 | U1071X  | S0013  |
| B77101 | R0130 | BZ150    | Z0217 | BZ0500V2 | Z0212 | U12AG  | R1245 | C10043 | R1245 | U1071Y  | S0013  |
| B77102 | R0130 | BZ151    | Z0219 | BZ0500V1 | Z0214 | U12AH  | R1245 | C10044 | R1245 | U1071Z  | S0013  |
| B77201 | R0130 | BZ152    | Z0220 | BZ0500V2 | Z0215 | U12AI  | R1241 | C10045 | R1241 | U1071AA | S0013  |
| B77202 | R0130 | BZ153    | Z0222 | BZ0500V2 | Z0217 | U12AJ  | R1241 | C10046 | R1241 | U1071AB | S0013  |
| B78001 | R0130 | BZ154    | Z0225 | BZ0500V1 | Z0219 | U12AK  | R1244 | C10047 | R1244 | U1071AC | S0013  |
| B78002 | R0130 | BZ155    | Z0228 | BZ0500V2 | Z0220 | U12AL  | R1244 | C10048 | R1244 | U1071AD | S0013  |
| B78101 | R0130 | BZ156    | Z0230 | BZ0500V3 | Z0222 | U12AM  | R1244 | C10049 | R1244 | U1071AE | S0013  |
| B78102 | R0130 | BZ157    | Z0231 | BZ0500V3 | Z0225 | U12AN  | R1244 | C10050 | R1244 | U1071AF | S0013  |
| B78201 | R0130 | BZ158    | Z0214 | BZ0500V7 | Z0210 | U12AO  | R1243 | C10051 | R1243 | U1071AG | S0013  |
| B78202 | R0130 | BZ159    | Z0215 | BZ0500V1 | Z0211 | U12AP  | R1244 | C10052 | R1244 | U1071AH | S0013  |
| B78301 | R0130 | BZ160    | Z0217 | BZ0500V2 | Z0212 | U12AQ  | R1245 | C10053 | R1245 | U1071AI | S0013  |
| B78302 | R0130 | BZ161    | Z0219 | BZ0500V1 | Z0214 | U12AR  | R1245 | C10054 | R1245 | U1071AJ | S0013  |
| B78401 | R0130 | BZ162    | Z0220 | BZ0500V2 | Z0215 | U12AS  | R1241 | C10055 | R1241 | U1071AK | S0013  |
| B78402 | R0130 | BZ163    | Z0222 | BZ0500V2 | Z0217 | U12AT  | R1241 | C10056 | R1241 | U1071AL | S0013  |
| B78501 | R0130 | BZ164    | Z0225 | BZ0500V1 | Z0219 | U12AU  | R1244 | C10057 | R1244 | U1071AM | S0013  |
| B78502 | R0130 | BZ165    | Z0228 | BZ0500V2 | Z0220 | U12AV  | R1244 | C10058 | R1244 | U1071AN | S0013  |
| B78601 | R0130 | BZ166    | Z0230 | BZ0500V3 | Z0222 | U12AW  | R1244 | C10059 | R1244 | U1071AO | S0013  |
| B78602 | R0130 | BZ167    | Z0231 | BZ0500V3 | Z0225 | U12AX  | R1244 | C10060 | R1244 | U1071AP | S0013  |
| B78701 | R0130 | BZ168    | Z0214 | BZ0500V7 | Z0210 | U12AY  | R1243 | C10061 | R1243 | U1071AQ | S0013  |
| B78702 | R0130 | BZ169    | Z0215 | BZ0500V1 | Z0211 | U12AZ  | R1244 | C10062 | R1244 | U1071AR | S0013  |
| B78801 | R0130 | BZ170    | Z0217 | BZ0500V2 | Z0212 | U12BA  | R1245 | C10063 | R1245 | U1071AS | S0013  |
| B78802 | R0130 | BZ171    | Z0219 | BZ0500V1 | Z0214 | U12BB  | R1245 | C10064 | R1245 | U1071AT | S0013  |
| B78901 | R0130 | BZ172    | Z0220 | BZ0500V2 | Z0215 | U12BC  | R1241 | C10065 | R1241 | U1071AU | S0013  |
| B78902 | R0130 | BZ173    | Z0222 | BZ0500V2 | Z0217 | U12BD  | R1241 | C10066 | R1241 | U1071AV | S0013  |
| B79001 | R0130 | BZ174    | Z0225 | BZ0500V1 | Z0219 | U12BE  | R1244 | C10067 | R1244 | U1071AW | S0013  |
| B79002 | R0130 | BZ175    | Z0228 | BZ0500V2 | Z0220 | U12BF  | R1244 | C10068 | R1244 | U1071AX | S0013  |
| B79101 | R0130 | BZ176    | Z0230 | BZ0500V3 | Z0222 | U12BG  | R1244 | C10069 | R1244 | U1071AY | S0013  |
| B79102 | R0130 | BZ177    | Z0231 | BZ0500V3 | Z0225 | U12BH  | R1244 | C10070 | R1244 | U1071AZ | S0013  |
| B79201 | R0130 | BZ178    | Z0214 | BZ0500V7 | Z0210 | U12BI  | R1243 | C10071 | R1243 | U1071BA | S0013  |
| B79202 | R0130 | BZ179    | Z0215 | BZ0500V1 | Z0211 | U12BJ  | R1244 | C10072 | R1244 | U1071BB | S0013  |
| B79301 | R0130 | BZ180    | Z0217 | BZ0500V2 | Z0212 | U12BK  | R1245 | C10073 | R1245 | U1071BC | S0013  |
| B79302 | R0130 | BZ181    | Z0219 | BZ0500V1 | Z0214 | U12BL  | R1245 | C10074 | R1245 | U1071BD | S0013  |
| B79401 | R0130 | BZ182    | Z0220 | BZ0500V2 | Z0215 | U12BM  | R1241 | C10075 | R1241 | U1071BE | S0013  |
| B79402 | R0130 | BZ183    | Z0222 | BZ0500V2 | Z0217 | U12BN  | R1241 | C10076 | R1241 | U1071BF | S0013  |
| B79501 | R0130 | BZ184    | Z0225 | BZ0500V1 | Z0219 | U12BO  | R1244 | C10077 | R1244 | U1071BG | S0013  |
| B79502 | R0130 | BZ185    | Z0228 | BZ0500V2 | Z0220 | U12BP  | R1244 | C10078 | R1244 | U1071BH | S0013  |
| B79601 | R0130 | BZ186    | Z0230 | BZ0500V3 | Z0222 | U12BQ  | R1244 | C10079 | R1244 | U1071BI | S0013  |
| B79602 | R0130 | BZ187    | Z0231 | BZ0500V3 | Z0225 | U12BR  | R1244 | C10080 | R1244 | U1071BJ | S0013  |
| B79701 | R0130 | BZ188    | Z0214 | BZ0500V7 | Z0210 | U12BS  | R1243 | C10081 | R1243 | U1071BK | S0013  |
| B79702 | R0130 | BZ189    | Z0215 | BZ0500V1 | Z0211 | U12BT  | R1244 | C10082 | R1244 | U1071BL | S0013  |
| B79801 | R0130 | BZ190    | Z0217 | BZ0500V2 | Z0212 | U12BU  | R1245 | C10083 | R1245 | U1071BM | S0013  |
| B79802 | R0130 | BZ191    | Z0219 | BZ0500V1 | Z0214 | U12BV  | R1245 | C10084 | R1245 | U1071BN | S0013  |
| B79901 | R0130 | BZ192    | Z0220 | BZ0500V2 | Z0215 | U12BW  | R1241 | C10085 | R1241 | U1071BO | S0013  |
| B79902 | R0130 | BZ193    | Z0222 | BZ0500V2 | Z0217 | U12BX  | R1241 | C10086 | R1241 | U1071BP | S0013  |
| B80001 | R0130 | BZ194    | Z0225 | BZ0500V1 | Z0219 | U12BY  | R1244 | C10087 | R1244 | U1071BQ | S0013  |
| B80002 | R0130 | BZ195    | Z0228 | BZ0500V2 | Z0220 | U12BZ  | R1244 | C10088 | R1244 | U1071BR | S0013  |
| B80101 | R0130 | BZ196    | Z0230 | BZ0500V3 | Z0222 | U12C0  | R1244 | C10089 | R1244 | U1071BS | S0013  |
| B80102 | R0130 | BZ197    | Z0231 | BZ0500V3 | Z0225 | U12C1  | R1244 | C10090 | R1244 | U1071BT | S0013  |
| B80201 | R0130 | BZ198    | Z0214 | BZ0500V7 | Z0210 | U12C2  | R1243 | C10091 | R1243 | U1071BU | S0013  |
| B80202 | R0130 | BZ199    | Z0215 | BZ0500V1 | Z0211 | U12C3  | R1244 | C10092 | R1244 | U1071BV | S0013  |
| B80301 | R0130 | BZ200    | Z0217 | BZ0500V2 |       |        |       |        |       |         |        |



| DEVICE  | HEP   | DEVICE  | HEP   | DEVICE | HEP   | DEVICE  | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|---------|-------|---------|-------|--------|-------|---------|-------|--------|-------|--------|-------|
| CS9014A | S0030 | UTP1106 | 06005 | U2042  | Z0412 | U5Z     | K0050 | U7F4   | S3019 | U44M5  | S5004 |
| CS9014B | S0034 | UTP1108 | 06005 | U2043  | Z0413 | U4      | K9001 | U70    | Z0420 | U44M7  | S5004 |
| CS9014C | S0030 | UTP1109 | 06005 | U2044  | Z0414 | U4-2    | K2505 | U701   | S3020 | U44M8  | S5004 |
| CS9014D | S0034 | UTP1111 | 06005 | U2045  | Z0415 | U4-R34  | K0050 | U702   | S3020 | U44M10 | S5004 |
| CS9014E | S0019 | UTP1112 | 06005 | U2046  | Z0416 | U4B210C | 06005 | U703   | S3019 | U45C   | K0053 |
| CS9015  | S0019 | UTP1117 | 06005 | U2047  | Z0417 | U4B210A | 06005 | U704   | Z0414 | U45C2  | K0053 |
| CS9015A | S0019 | UTP1124 | 06005 | U2048  | Z0418 | U4B210B | 06005 | U705   | R1222 | U45C   | K0053 |
| CS9015B | S0019 | UTP1135 | 06005 | U2049  | Z0419 | U4C20   | S0010 | U706   | Z0408 | U50    | K0050 |
| CS9015C | S0019 | UTP1136 | 06005 | U2050  | Z0420 | U4C20   | S0010 | U707   | R2503 | U51    | K9001 |
| CS9015D | S0019 | UTP1136 | 06005 | U2051  | Z0421 | U4C20   | S0010 | U708   | Z0410 | U51    | K1220 |
| CS9016  | S0019 | CTP1137 | 06005 | U2052  | Z0422 | U4C31   | S0023 | U709   | Z0412 | U50C   | K0054 |
| CS9016A | S0019 | CTP1220 | 06005 | U2053  | Z0423 | U4C31   | S0014 | U710   | Z0420 | U50C   | K0054 |
| CS9016B | S0019 | CTP1205 | 06005 | U2054  | Z0424 | U4C31   | S0014 | U711   | Z0420 | U50C   | K0054 |
| CS9016C | S0019 | CTP1290 | 06005 | U2055  | Z0425 | U4C31   | S0014 | U712   | Z0415 | U50C   | K0054 |
| CS9016D | S0019 | CTP1297 | 06005 | U2056  | Z0426 | U4C31   | S0014 | U713   | Z0415 | U50C   | K0054 |
| CS9017  | S0019 | CTP1300 | 06005 | U2057  | Z0427 | U4C31   | S0014 | U714   | Z0415 | U50C   | K0054 |
| CS9017A | S0019 | CTP1307 | 06005 | U2058  | Z0428 | U4C31   | S0014 | U715   | Z0415 | U50C   | K0054 |
| CS9017B | S0019 | CTP1314 | 06005 | U2059  | Z0429 | U4C31   | S0014 | U716   | R0112 | U510   | K9135 |
| CS9018  | S0019 | CTP1320 | 06005 | U2060  | Z0430 | U4C31   | S0014 | U717   | R0303 | U50C   | K0054 |
| CS9018A | S0019 | CTP1330 | 06005 | U2061  | Z0431 | U4C31   | S0014 | U718   | R2022 | U50C   | K0054 |
| CS9018B | S0019 | CTP1340 | 06005 | U2062  | Z0432 | U4C31   | S0014 | U719   | R0305 | U50C   | K0054 |
| CS9018C | S0019 | CTP1350 | 06005 | U2063  | Z0433 | U4C31   | S0014 | U720   | R0234 | U50C   | K0054 |
| CS9018D | S0019 | CTP1360 | 06005 | U2064  | Z0434 | U4C31   | S0014 | U721   | R0234 | U50C   | K0054 |
| CS9018E | S0019 | CTP1370 | 06005 | U2065  | Z0435 | U4C31   | S0014 | U722   | R0234 | U50C   | K0054 |
| CS9018F | S0019 | CTP1380 | 06005 | U2066  | Z0436 | U4C31   | S0014 | U723   | R0234 | U50C   | K0054 |
| CS9018G | S0019 | CTP1390 | 06005 | U2067  | Z0437 | U4C31   | S0014 | U724   | R0234 | U50C   | K0054 |
| CS9018H | S0019 | CTP1400 | 06005 | U2068  | Z0438 | U4C31   | S0014 | U725   | R0234 | U50C   | K0054 |
| CS9018I | S0019 | CTP1410 | 06005 | U2069  | Z0439 | U4C31   | S0014 | U726   | R0234 | U50C   | K0054 |
| CS9018J | S0019 | CTP1420 | 06005 | U2070  | Z0440 | U4C31   | S0014 | U727   | R0234 | U50C   | K0054 |
| CS9018K | S0019 | CTP1430 | 06005 | U2071  | Z0441 | U4C31   | S0014 | U728   | R0234 | U50C   | K0054 |
| CS9018L | S0019 | CTP1440 | 06005 | U2072  | Z0442 | U4C31   | S0014 | U729   | R0234 | U50C   | K0054 |
| CS9018M | S0019 | CTP1450 | 06005 | U2073  | Z0443 | U4C31   | S0014 | U730   | R0234 | U50C   | K0054 |
| CS9018N | S0019 | CTP1460 | 06005 | U2074  | Z0444 | U4C31   | S0014 | U731   | R0234 | U50C   | K0054 |
| CS9018O | S0019 | CTP1470 | 06005 | U2075  | Z0445 | U4C31   | S0014 | U732   | R0234 | U50C   | K0054 |
| CS9018P | S0019 | CTP1480 | 06005 | U2076  | Z0446 | U4C31   | S0014 | U733   | R0234 | U50C   | K0054 |
| CS9018Q | S0019 | CTP1490 | 06005 | U2077  | Z0447 | U4C31   | S0014 | U734   | R0234 | U50C   | K0054 |
| CS9018R | S0019 | CTP1500 | 06005 | U2078  | Z0448 | U4C31   | S0014 | U735   | R0234 | U50C   | K0054 |
| CS9018S | S0019 | CTP1510 | 06005 | U2079  | Z0449 | U4C31   | S0014 | U736   | R0234 | U50C   | K0054 |
| CS9018T | S0019 | CTP1520 | 06005 | U2080  | Z0450 | U4C31   | S0014 | U737   | R0234 | U50C   | K0054 |
| CS9018U | S0019 | CTP1530 | 06005 | U2081  | Z0451 | U4C31   | S0014 | U738   | R0234 | U50C   | K0054 |
| CS9018V | S0019 | CTP1540 | 06005 | U2082  | Z0452 | U4C31   | S0014 | U739   | R0234 | U50C   | K0054 |
| CS9018W | S0019 | CTP1550 | 06005 | U2083  | Z0453 | U4C31   | S0014 | U740   | R0234 | U50C   | K0054 |
| CS9018X | S0019 | CTP1560 | 06005 | U2084  | Z0454 | U4C31   | S0014 | U741   | R0234 | U50C   | K0054 |
| CS9018Y | S0019 | CTP1570 | 06005 | U2085  | Z0455 | U4C31   | S0014 | U742   | R0234 | U50C   | K0054 |
| CS9018Z | S0019 | CTP1580 | 06005 | U2086  | Z0456 | U4C31   | S0014 | U743   | R0234 | U50C   | K0054 |
| CS9019  | S0019 | CTP1590 | 06005 | U2087  | Z0457 | U4C31   | S0014 | U744   | R0234 | U50C   | K0054 |
| CS9020  | S0019 | CTP1600 | 06005 | U2088  | Z0458 | U4C31   | S0014 | U745   | R0234 | U50C   | K0054 |
| CS9021  | S0019 | CTP1610 | 06005 | U2089  | Z0459 | U4C31   | S0014 | U746   | R0234 | U50C   | K0054 |
| CS9022  | S0019 | CTP1620 | 06005 | U2090  | Z0460 | U4C31   | S0014 | U747   | R0234 | U50C   | K0054 |
| CS9023  | S0019 | CTP1630 | 06005 | U2091  | Z0461 | U4C31   | S0014 | U748   | R0234 | U50C   | K0054 |
| CS9024  | S0019 | CTP1640 | 06005 | U2092  | Z0462 | U4C31   | S0014 | U749   | R0234 | U50C   | K0054 |
| CS9025  | S0019 | CTP1650 | 06005 | U2093  | Z0463 | U4C31   | S0014 | U750   | R0234 | U50C   | K0054 |
| CS9026  | S0019 | CTP1660 | 06005 | U2094  | Z0464 | U4C31   | S0014 | U751   | R0234 | U50C   | K0054 |
| CS9027  | S0019 | CTP1670 | 06005 | U2095  | Z0465 | U4C31   | S0014 | U752   | R0234 | U50C   | K0054 |
| CS9028  | S0019 | CTP1680 | 06005 | U2096  | Z0466 | U4C31   | S0014 | U753   | R0234 | U50C   | K0054 |
| CS9029  | S0019 | CTP1690 | 06005 | U2097  | Z0467 | U4C31   | S0014 | U754   | R0234 | U50C   | K0054 |
| CS9030  | S0019 | CTP1700 | 06005 | U2098  | Z0468 | U4C31   | S0014 | U755   | R0234 | U50C   | K0054 |
| CS9031  | S0019 | CTP1710 | 06005 | U2099  | Z0469 | U4C31   | S0014 | U756   | R0234 | U50C   | K0054 |
| CS9032  | S0019 | CTP1720 | 06005 | U2100  | Z0470 | U4C31   | S0014 | U757   | R0234 | U50C   | K0054 |
| CS9033  | S0019 | CTP1730 | 06005 | U2101  | Z0471 | U4C31   | S0014 | U758   | R0234 | U50C   | K0054 |
| CS9034  | S0019 | CTP1740 | 06005 | U2102  | Z0472 | U4C31   | S0014 | U759   | R0234 | U50C   | K0054 |
| CS9035  | S0019 | CTP1750 | 06005 | U2103  | Z0473 | U4C31   | S0014 | U760   | R0234 | U50C   | K0054 |
| CS9036  | S0019 | CTP1760 | 06005 | U2104  | Z0474 | U4C31   | S0014 | U761   | R0234 | U50C   | K0054 |
| CS9037  | S0019 | CTP1770 | 06005 | U2105  | Z0475 | U4C31   | S0014 | U762   | R0234 | U50C   | K0054 |
| CS9038  | S0019 | CTP1780 | 06005 | U2106  | Z0476 | U4C31   | S0014 | U763   | R0234 | U50C   | K0054 |
| CS9039  | S0019 | CTP1790 | 06005 | U2107  | Z0477 | U4C31   | S0014 | U764   | R0234 | U50C   | K0054 |
| CS9040  | S0019 | CTP1800 | 06005 | U2108  | Z0478 | U4C31   | S0014 | U765   | R0234 | U50C   | K0054 |
| CS9041  | S0019 | CTP1810 | 06005 | U2109  | Z0479 | U4C31   | S0014 | U766   | R0234 | U50C   | K0054 |
| CS9042  | S0019 | CTP1820 | 06005 | U2110  | Z0480 | U4C31   | S0014 | U767   | R0234 | U50C   | K0054 |
| CS9043  | S0019 | CTP1830 | 06005 | U2111  | Z0481 | U4C31   | S0014 | U768   | R0234 | U50C   | K0054 |
| CS9044  | S0019 | CTP1840 | 06005 | U2112  | Z0482 | U4C31   | S0014 | U769   | R0234 | U50C   | K0054 |
| CS9045  | S0019 | CTP1850 | 06005 | U2113  | Z0483 | U4C31   | S0014 | U770   | R0234 | U50C   | K0054 |
| CS9046  | S0019 | CTP1860 | 06005 | U2114  | Z0484 | U4C31   | S0014 | U771   | R0234 | U50C   | K0054 |
| CS9047  | S0019 | CTP1870 | 06005 | U2115  | Z0485 | U4C31   | S0014 | U772   | R0234 | U50C   | K0054 |
| CS9048  | S0019 | CTP1880 | 06005 | U2116  | Z0486 | U4C31   | S0014 | U773   | R0234 | U50C   | K0054 |
| CS9049  | S0019 | CTP1890 | 06005 | U2117  | Z0487 | U4C31   | S0014 | U774   | R0234 | U50C   | K0054 |
| CS9050  | S0019 | CTP1900 | 06005 | U2118  | Z0488 | U4C31   | S0014 | U775   | R0234 | U50C   | K0054 |
| CS9051  | S0019 | CTP1910 | 06005 | U2119  | Z0489 | U4C31   | S0014 | U776   | R0234 | U50C   | K0054 |
| CS9052  | S0019 | CTP1920 | 06005 | U2120  | Z0490 | U4C31   | S0014 | U777   | R0234 | U50C   | K0054 |
| CS9053  | S0019 | CTP1930 | 06005 | U2121  | Z0491 | U4C31   | S0014 | U778   | R0234 | U50C   | K0054 |
| CS9054  | S0019 | CTP1940 | 06005 | U2122  | Z0492 | U4C31   | S0014 | U779   | R0234 | U50C   | K0054 |
| CS9055  | S0019 | CTP1950 | 06005 | U2123  | Z0493 | U4C31   | S0014 | U780   | R0234 | U50C   | K0054 |
| CS9056  | S0019 | CTP1960 | 06005 | U2124  | Z0494 | U4C31   | S0014 | U781   | R0234 | U50C   | K0054 |
| CS9057  | S0019 | CTP1970 | 06005 | U2125  | Z0495 | U4C31   | S0014 | U782   | R0234 | U50C   | K0054 |
| CS9058  | S0019 | CTP1980 | 06005 | U2126  | Z0496 | U4C31   | S0014 | U783   | R0234 | U50C   | K0054 |
| CS9059  | S0019 | CTP1990 | 06005 | U2127  | Z0497 | U4C31   | S0014 | U784   | R0234 | U50C   | K0054 |
| CS9060  | S0019 | CTP2000 | 06005 | U2128  | Z0498 | U4C31   | S0014 | U785   | R0234 | U50C   | K0054 |
| CS9061  | S0019 | CTP2010 | 06005 | U2129  | Z0499 | U4C31   | S0014 | U786   | R0234 | U50C   | K0054 |
| CS9062  | S0019 | CTP2020 | 06005 | U2130  | Z0500 | U4C31   | S0014 | U787   | R0234 | U50C   | K0054 |
| CS9063  | S0019 | CTP2030 | 06005 | U2131  | Z0501 | U4C31   | S0014 | U788   | R0234 | U50C   | K0054 |
| CS9064  | S0019 | CTP2040 | 06005 | U2132  | Z0502 | U4C31   | S0014 | U789   | R0234 | U50C   | K0054 |
| CS9065  | S0019 | CTP2050 | 06005 | U2133  | Z0503 | U4C31   | S0014 | U7     |       |        |       |





| DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| EA15X163 | SU017 | EA257  | SU015 | EU0181 | S7U00 | EU0571 | ZU439 | EU0575 | K1475 | EU0575 | R0257 |
| EA15X162 | SU017 | EA258  | SU015 | EU0182 | S9G04 | EU0572 | ZU411 | EU0576 | K1475 | EU0576 | S9061 |
| EA15X161 | SU017 | EA259  | SU015 | EU0183 | S5L04 | EU0574 | ZU414 | EU0577 | K1475 | EU0577 | K2601 |
| EA15X160 | SU014 | EA260  | SU014 | EU0184 | SU005 | EU0575 | ZU419 | EU0578 | K1471 | EU0578 | K2601 |
| EA15X159 | SU014 | EA261  | SU014 | EU0185 | S5U05 | EU0577 | ZU420 | EU0579 | K1471 | EU0579 | K2601 |
| EA15X158 | SU014 | EA262  | SU014 | EU0186 | SU000 | EU0579 | ZU421 | EU0580 | K1472 | EU0580 | K2601 |
| EA15X157 | SU014 | EA263  | SU014 | EU0187 | SU000 | EU0581 | ZU422 | EU0581 | K1472 | EU0581 | K2601 |
| EA15X156 | SU014 | EA264  | SU014 | EU0188 | SU000 | EU0582 | ZU423 | EU0582 | K1475 | EU0582 | K2601 |
| EA15X155 | SU014 | EA265  | SU014 | EU0189 | SU019 | EU0580 | ZU428 | EU0583 | K1475 | EU0583 | K2601 |
| EA15X154 | SU014 | EA266  | SU014 | EU0190 | S3C32 | EU0588 | ZU430 | EU0584 | K1721 | EU0584 | K2601 |
| EA15X153 | SU014 | EA267  | SU014 | EU0191 | S3D31 | EU0590 | ZU432 | EU0585 | K1721 | EU0585 | K2601 |
| EA15X152 | SU014 | EA268  | SU014 | EU0192 | S3E31 | EU0591 | ZU433 | EU0586 | K1723 | EU0586 | K2601 |
| EA15X151 | SU014 | EA269  | SU014 | EU0193 | S3F31 | EU0592 | ZU434 | EU0587 | K1723 | EU0587 | K2601 |
| EA15X150 | SU014 | EA270  | SU014 | EU0194 | S3G31 | EU0593 | ZU435 | EU0588 | K1723 | EU0588 | K2601 |
| EA15X149 | SU014 | EA271  | SU014 | EU0195 | S3H31 | EU0594 | ZU436 | EU0589 | K1723 | EU0589 | K2601 |
| EA15X148 | SU014 | EA272  | SU014 | EU0196 | S3I31 | EU0595 | ZU437 | EU0590 | K1723 | EU0590 | K2601 |
| EA15X147 | SU014 | EA273  | SU014 | EU0197 | S3J31 | EU0596 | ZU438 | EU0591 | K1723 | EU0591 | K2601 |
| EA15X146 | SU014 | EA274  | SU014 | EU0198 | S3K31 | EU0597 | ZU439 | EU0592 | K1723 | EU0592 | K2601 |
| EA15X145 | SU014 | EA275  | SU014 | EU0199 | S3L31 | EU0598 | ZU440 | EU0593 | K1723 | EU0593 | K2601 |
| EA15X144 | SU014 | EA276  | SU014 | EU0200 | S3M31 | EU0599 | ZU441 | EU0594 | K1723 | EU0594 | K2601 |
| EA15X143 | SU014 | EA277  | SU014 | EU0201 | S3N31 | EU0600 | ZU442 | EU0595 | K1723 | EU0595 | K2601 |
| EA15X142 | SU014 | EA278  | SU014 | EU0202 | S3O31 | EU0601 | ZU443 | EU0596 | K1723 | EU0596 | K2601 |
| EA15X141 | SU014 | EA279  | SU014 | EU0203 | S3P31 | EU0602 | ZU444 | EU0597 | K1723 | EU0597 | K2601 |
| EA15X140 | SU014 | EA280  | SU014 | EU0204 | S3Q31 | EU0603 | ZU445 | EU0598 | K1723 | EU0598 | K2601 |
| EA15X139 | SU014 | EA281  | SU014 | EU0205 | S3R31 | EU0604 | ZU446 | EU0599 | K1723 | EU0599 | K2601 |
| EA15X138 | SU014 | EA282  | SU014 | EU0206 | S3S31 | EU0605 | ZU447 | EU0600 | K1723 | EU0600 | K2601 |
| EA15X137 | SU014 | EA283  | SU014 | EU0207 | S3T31 | EU0606 | ZU448 | EU0601 | K1723 | EU0601 | K2601 |
| EA15X136 | SU014 | EA284  | SU014 | EU0208 | S3U31 | EU0607 | ZU449 | EU0602 | K1723 | EU0602 | K2601 |
| EA15X135 | SU014 | EA285  | SU014 | EU0209 | S3V31 | EU0608 | ZU450 | EU0603 | K1723 | EU0603 | K2601 |
| EA15X134 | SU014 | EA286  | SU014 | EU0210 | S3W31 | EU0609 | ZU451 | EU0604 | K1723 | EU0604 | K2601 |
| EA15X133 | SU014 | EA287  | SU014 | EU0211 | S3X31 | EU0610 | ZU452 | EU0605 | K1723 | EU0605 | K2601 |
| EA15X132 | SU014 | EA288  | SU014 | EU0212 | S3Y31 | EU0611 | ZU453 | EU0606 | K1723 | EU0606 | K2601 |
| EA15X131 | SU014 | EA289  | SU014 | EU0213 | S3Z31 | EU0612 | ZU454 | EU0607 | K1723 | EU0607 | K2601 |
| EA15X130 | SU014 | EA290  | SU014 | EU0214 | S4A31 | EU0613 | ZU455 | EU0608 | K1723 | EU0608 | K2601 |
| EA15X129 | SU014 | EA291  | SU014 | EU0215 | S4B31 | EU0614 | ZU456 | EU0609 | K1723 | EU0609 | K2601 |
| EA15X128 | SU014 | EA292  | SU014 | EU0216 | S4C31 | EU0615 | ZU457 | EU0610 | K1723 | EU0610 | K2601 |
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| EA15X123 | SU014 | EA297  | SU014 | EU0221 | S4H31 | EU0620 | ZU462 | EU0615 | K1723 | EU0615 | K2601 |
| EA15X122 | SU014 | EA298  | SU014 | EU0222 | S4I31 | EU0621 | ZU463 | EU0616 | K1723 | EU0616 | K2601 |
| EA15X121 | SU014 | EA299  | SU014 | EU0223 | S4J31 | EU0622 | ZU464 | EU0617 | K1723 | EU0617 | K2601 |
| EA15X120 | SU014 | EA300  | SU014 | EU0224 | S4K31 | EU0623 | ZU465 | EU0618 | K1723 | EU0618 | K2601 |
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| EA15X118 | SU014 | EA302  | SU014 | EU0226 | S4M31 | EU0625 | ZU467 | EU0620 | K1723 | EU0620 | K2601 |
| EA15X117 | SU014 | EA303  | SU014 | EU0227 | S4N31 | EU0626 | ZU468 | EU0621 | K1723 | EU0621 | K2601 |
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| EA15X114 | SU014 | EA306  | SU014 | EU0230 | S4Q31 | EU0629 | ZU471 | EU0624 | K1723 | EU0624 | K2601 |
| EA15X113 | SU014 | EA307  | SU014 | EU0231 | S4R31 | EU0630 | ZU472 | EU0625 | K1723 | EU0625 | K2601 |
| EA15X112 | SU014 | EA308  | SU014 | EU0232 | S4S31 | EU0631 | ZU473 | EU0626 | K1723 | EU0626 | K2601 |
| EA15X111 | SU014 | EA309  | SU014 | EU0233 | S4T31 | EU0632 | ZU474 | EU0627 | K1723 | EU0627 | K2601 |
| EA15X110 | SU014 | EA310  | SU014 | EU0234 | S4U31 | EU0633 | ZU475 | EU0628 | K1723 | EU0628 | K2601 |
| EA15X109 | SU014 | EA311  | SU014 | EU0235 | S4V31 | EU0634 | ZU476 | EU0629 | K1723 | EU0629 | K2601 |
| EA15X108 | SU014 | EA312  | SU014 | EU0236 | S4W31 | EU0635 | ZU477 | EU0630 | K1723 | EU0630 | K2601 |
| EA15X107 | SU014 | EA313  | SU014 | EU0237 | S4X31 | EU0636 | ZU478 | EU0631 | K1723 | EU0631 | K2601 |
| EA15X106 | SU014 | EA314  | SU014 | EU0238 | S4Y31 | EU0637 | ZU479 | EU0632 | K1723 | EU0632 | K2601 |
| EA15X105 | SU014 | EA315  | SU014 | EU0239 | S4Z31 | EU0638 | ZU480 | EU0633 | K1723 | EU0633 | K2601 |
| EA15X104 | SU014 | EA316  | SU014 | EU0240 | S5A31 | EU0639 | ZU481 | EU0634 | K1723 | EU0634 | K2601 |
| EA15X103 | SU014 | EA317  | SU014 | EU0241 | S5B31 | EU0640 | ZU482 | EU0635 | K1723 | EU0635 | K2601 |
| EA15X102 | SU014 | EA318  | SU014 | EU0242 | S5C31 | EU0641 | ZU483 | EU0636 | K1723 | EU0636 | K2601 |
| EA15X101 | SU014 | EA319  | SU014 | EU0243 | S5D31 | EU0642 | ZU484 | EU0637 | K1723 | EU0637 | K2601 |
| EA15X100 | SU014 | EA320  | SU014 | EU0244 | S5E31 | EU0643 | ZU485 | EU0638 | K1723 | EU0638 | K2601 |
| EA15X99  | SU014 | EA321  | SU014 | EU0245 | S5F31 | EU0644 | ZU486 | EU0639 | K1723 | EU0639 | K2601 |
| EA15X98  | SU014 | EA322  | SU014 | EU0246 | S5G31 | EU0645 | ZU487 | EU0640 | K1723 | EU0640 | K2601 |
| EA15X97  | SU014 | EA323  | SU014 | EU0247 | S5H31 | EU0646 | ZU488 | EU0641 | K1723 | EU0641 | K2601 |
| EA15X96  | SU014 | EA324  | SU014 | EU0248 | S5I31 | EU0647 | ZU489 | EU0642 | K1723 | EU0642 | K2601 |
| EA15X95  | SU014 | EA325  | SU014 | EU0249 | S5J31 | EU0648 | ZU490 | EU0643 | K1723 | EU0643 | K2601 |
| EA15X94  | SU014 | EA326  | SU014 | EU0250 | S5K31 | EU0649 | ZU491 | EU0644 | K1723 | EU0644 | K2601 |
| EA15X93  | SU014 | EA327  | SU014 | EU0251 | S5L31 | EU0650 | ZU492 | EU0645 | K1723 | EU0645 | K2601 |
| EA15X92  | SU014 | EA328  | SU014 | EU0252 | S5M31 | EU0651 | ZU493 | EU0646 | K1723 | EU0646 | K2601 |
| EA15X91  | SU014 | EA329  | SU014 | EU0253 | S5N31 | EU0652 | ZU494 | EU0647 | K1723 | EU0647 | K2601 |
| EA15X90  | SU014 | EA330  | SU014 | EU0254 | S5O31 | EU0653 | ZU495 | EU0648 | K1723 | EU0648 | K2601 |
| EA15X89  | SU014 | EA331  | SU014 | EU0255 | S5P31 | EU0654 | ZU496 | EU0649 | K1723 | EU0649 | K2601 |
| EA15X88  | SU014 | EA332  | SU014 | EU0256 | S5Q31 | EU0655 | ZU497 | EU0650 | K1723 | EU0650 | K2601 |
| EA15X87  | SU014 | EA333  | SU014 | EU0257 | S5R31 | EU0656 | ZU498 | EU0651 | K1723 | EU0651 | K2601 |
| EA15X86  | SU014 | EA334  | SU014 | EU0258 | S5S31 | EU0657 | ZU499 | EU0652 | K1723 | EU0652 | K2601 |
| EA15X85  | SU014 | EA335  | SU014 | EU0259 | S5T31 | EU0658 | ZU500 | EU0653 | K1723 | EU0653 | K2601 |
| EA15X84  | SU014 | EA336  | SU014 | EU0260 | S5U31 | EU0659 | ZU501 | EU0654 | K1723 | EU0654 | K2601 |
| EA15X83  | SU014 | EA337  | SU014 | EU0261 | S5V31 | EU0660 | ZU502 | EU0655 | K1723 | EU0655 | K2601 |
| EA15X82  | SU014 | EA338  | SU014 | EU0262 | S5W31 | EU0661 | ZU503 | EU0656 | K1723 | EU0656 | K2601 |
| EA15X81  | SU014 | EA339  | SU014 | EU0263 | S5X31 | EU0662 | ZU504 | EU0657 | K1723 | EU0657 | K2601 |
| EA15X80  | SU014 | EA340  | SU014 | EU0264 | S5Y31 | EU0663 | ZU505 | EU0658 | K1723 | EU0658 | K2601 |
| EA15X79  | SU014 | EA341  | SU014 | EU0265 | S5Z31 | EU0664 | ZU506 | EU0659 | K1723 | EU0659 | K2601 |
| EA15X78  | SU014 | EA342  | SU014 | EU0266 | S6A31 | EU0665 | ZU507 | EU0660 | K1723 | EU0660 | K2601 |
| EA15X77  | SU014 | EA343  | SU014 | EU0267 | S6B31 | EU0666 | ZU508 | EU0661 | K1723 | EU0661 | K2601 |
| EA15X76  | SU014 | EA344  | SU014 | EU0268 | S6C31 | EU0667 | ZU509 | EU0662 | K1723 | EU0662 | K2601 |
| EA15X75  | SU014 | EA345  | SU014 | EU0269 | S6D31 | EU0668 | ZU510 | EU0663 | K1723 | EU0663 | K2601 |
| EA15X74  | SU014 | EA346  | SU014 | EU0270 | S6E31 | EU0669 | ZU511 | EU0664 | K1723 | EU0664 | K2601 |
| EA15X73  | SU014 | EA347  | SU014 | EU0271 | S6F31 | EU0670 | ZU512 | EU0665 | K1723 | EU0665 | K2601 |
| EA15X72  | SU014 | EA348  | SU014 | EU0272 | S6G31 | EU0671 |       |        |       |        |       |







| DEVICE | HEP   | DEVICE | HEP   | DEVICE      | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|--------|-------|--------|-------|-------------|-------|--------|-------|--------|-------|--------|-------|
| ut-80  | u0041 | ut1073 | u0007 | ut1200/30   | u0011 | ut131  | u0007 | ut104  | u0007 | ut104  | u0007 |
| ut-81  | u0042 | ut1074 | u0007 | ut1200/60   | u0011 | ut132  | u0007 | ut105  | u0007 | ut105  | u0007 |
| ut-82  | u0043 | ut1075 | u0007 | ut1200/90   | u0011 | ut133  | u0007 | ut106  | u0007 | ut106  | u0007 |
| ut-83  | u0044 | ut1076 | u0007 | ut1200/120  | u0011 | ut134  | u0007 | ut107  | u0007 | ut107  | u0007 |
| ut-84  | u0045 | ut1077 | u0007 | ut1200/150  | u0011 | ut135  | u0007 | ut108  | u0007 | ut108  | u0007 |
| ut-85  | u0046 | ut1078 | u0007 | ut1200/180  | u0011 | ut136  | u0007 | ut109  | u0007 | ut109  | u0007 |
| ut-86  | u0047 | ut1079 | u0007 | ut1200/210  | u0011 | ut137  | u0007 | ut110  | u0007 | ut110  | u0007 |
| ut-87  | u0048 | ut1080 | u0007 | ut1200/240  | u0011 | ut138  | u0007 | ut111  | u0007 | ut111  | u0007 |
| ut-88  | u0049 | ut1081 | u0007 | ut1200/270  | u0011 | ut139  | u0007 | ut112  | u0007 | ut112  | u0007 |
| ut-89  | u0050 | ut1082 | u0007 | ut1200/300  | u0011 | ut140  | u0007 | ut113  | u0007 | ut113  | u0007 |
| ut-90  | u0051 | ut1083 | u0007 | ut1200/330  | u0011 | ut141  | u0007 | ut114  | u0007 | ut114  | u0007 |
| ut-91  | u0052 | ut1084 | u0007 | ut1200/360  | u0011 | ut142  | u0007 | ut115  | u0007 | ut115  | u0007 |
| ut-92  | u0053 | ut1085 | u0007 | ut1200/390  | u0011 | ut143  | u0007 | ut116  | u0007 | ut116  | u0007 |
| ut-93  | u0054 | ut1086 | u0007 | ut1200/420  | u0011 | ut144  | u0007 | ut117  | u0007 | ut117  | u0007 |
| ut-94  | u0055 | ut1087 | u0007 | ut1200/450  | u0011 | ut145  | u0007 | ut118  | u0007 | ut118  | u0007 |
| ut-95  | u0056 | ut1088 | u0007 | ut1200/480  | u0011 | ut146  | u0007 | ut119  | u0007 | ut119  | u0007 |
| ut-96  | u0057 | ut1089 | u0007 | ut1200/510  | u0011 | ut147  | u0007 | ut120  | u0007 | ut120  | u0007 |
| ut-97  | u0058 | ut1090 | u0007 | ut1200/540  | u0011 | ut148  | u0007 | ut121  | u0007 | ut121  | u0007 |
| ut-98  | u0059 | ut1091 | u0007 | ut1200/570  | u0011 | ut149  | u0007 | ut122  | u0007 | ut122  | u0007 |
| ut-99  | u0060 | ut1092 | u0007 | ut1200/600  | u0011 | ut150  | u0007 | ut123  | u0007 | ut123  | u0007 |
| ut-100 | u0061 | ut1093 | u0007 | ut1200/630  | u0011 | ut151  | u0007 | ut124  | u0007 | ut124  | u0007 |
| ut-101 | u0062 | ut1094 | u0007 | ut1200/660  | u0011 | ut152  | u0007 | ut125  | u0007 | ut125  | u0007 |
| ut-102 | u0063 | ut1095 | u0007 | ut1200/690  | u0011 | ut153  | u0007 | ut126  | u0007 | ut126  | u0007 |
| ut-103 | u0064 | ut1096 | u0007 | ut1200/720  | u0011 | ut154  | u0007 | ut127  | u0007 | ut127  | u0007 |
| ut-104 | u0065 | ut1097 | u0007 | ut1200/750  | u0011 | ut155  | u0007 | ut128  | u0007 | ut128  | u0007 |
| ut-105 | u0066 | ut1098 | u0007 | ut1200/780  | u0011 | ut156  | u0007 | ut129  | u0007 | ut129  | u0007 |
| ut-106 | u0067 | ut1099 | u0007 | ut1200/810  | u0011 | ut157  | u0007 | ut130  | u0007 | ut130  | u0007 |
| ut-107 | u0068 | ut1100 | u0007 | ut1200/840  | u0011 | ut158  | u0007 | ut131  | u0007 | ut131  | u0007 |
| ut-108 | u0069 | ut1101 | u0007 | ut1200/870  | u0011 | ut159  | u0007 | ut132  | u0007 | ut132  | u0007 |
| ut-109 | u0070 | ut1102 | u0007 | ut1200/900  | u0011 | ut160  | u0007 | ut133  | u0007 | ut133  | u0007 |
| ut-110 | u0071 | ut1103 | u0007 | ut1200/930  | u0011 | ut161  | u0007 | ut134  | u0007 | ut134  | u0007 |
| ut-111 | u0072 | ut1104 | u0007 | ut1200/960  | u0011 | ut162  | u0007 | ut135  | u0007 | ut135  | u0007 |
| ut-112 | u0073 | ut1105 | u0007 | ut1200/990  | u0011 | ut163  | u0007 | ut136  | u0007 | ut136  | u0007 |
| ut-113 | u0074 | ut1106 | u0007 | ut1200/1020 | u0011 | ut164  | u0007 | ut137  | u0007 | ut137  | u0007 |
| ut-114 | u0075 | ut1107 | u0007 | ut1200/1050 | u0011 | ut165  | u0007 | ut138  | u0007 | ut138  | u0007 |
| ut-115 | u0076 | ut1108 | u0007 | ut1200/1080 | u0011 | ut166  | u0007 | ut139  | u0007 | ut139  | u0007 |
| ut-116 | u0077 | ut1109 | u0007 | ut1200/1110 | u0011 | ut167  | u0007 | ut140  | u0007 | ut140  | u0007 |
| ut-117 | u0078 | ut1110 | u0007 | ut1200/1140 | u0011 | ut168  | u0007 | ut141  | u0007 | ut141  | u0007 |
| ut-118 | u0079 | ut1111 | u0007 | ut1200/1170 | u0011 | ut169  | u0007 | ut142  | u0007 | ut142  | u0007 |
| ut-119 | u0080 | ut1112 | u0007 | ut1200/1200 | u0011 | ut170  | u0007 | ut143  | u0007 | ut143  | u0007 |
| ut-120 | u0081 | ut1113 | u0007 | ut1200/1230 | u0011 | ut171  | u0007 | ut144  | u0007 | ut144  | u0007 |
| ut-121 | u0082 | ut1114 | u0007 | ut1200/1260 | u0011 | ut172  | u0007 | ut145  | u0007 | ut145  | u0007 |
| ut-122 | u0083 | ut1115 | u0007 | ut1200/1290 | u0011 | ut173  | u0007 | ut146  | u0007 | ut146  | u0007 |
| ut-123 | u0084 | ut1116 | u0007 | ut1200/1320 | u0011 | ut174  | u0007 | ut147  | u0007 | ut147  | u0007 |
| ut-124 | u0085 | ut1117 | u0007 | ut1200/1350 | u0011 | ut175  | u0007 | ut148  | u0007 | ut148  | u0007 |
| ut-125 | u0086 | ut1118 | u0007 | ut1200/1380 | u0011 | ut176  | u0007 | ut149  | u0007 | ut149  | u0007 |
| ut-126 | u0087 | ut1119 | u0007 | ut1200/1410 | u0011 | ut177  | u0007 | ut150  | u0007 | ut150  | u0007 |
| ut-127 | u0088 | ut1120 | u0007 | ut1200/1440 | u0011 | ut178  | u0007 | ut151  | u0007 | ut151  | u0007 |
| ut-128 | u0089 | ut1121 | u0007 | ut1200/1470 | u0011 | ut179  | u0007 | ut152  | u0007 | ut152  | u0007 |
| ut-129 | u0090 | ut1122 | u0007 | ut1200/1500 | u0011 | ut180  | u0007 | ut153  | u0007 | ut153  | u0007 |
| ut-130 | u0091 | ut1123 | u0007 | ut1200/1530 | u0011 | ut181  | u0007 | ut154  | u0007 | ut154  | u0007 |
| ut-131 | u0092 | ut1124 | u0007 | ut1200/1560 | u0011 | ut182  | u0007 | ut155  | u0007 | ut155  | u0007 |
| ut-132 | u0093 | ut1125 | u0007 | ut1200/1590 | u0011 | ut183  | u0007 | ut156  | u0007 | ut156  | u0007 |
| ut-133 | u0094 | ut1126 | u0007 | ut1200/1620 | u0011 | ut184  | u0007 | ut157  | u0007 | ut157  | u0007 |
| ut-134 | u0095 | ut1127 | u0007 | ut1200/1650 | u0011 | ut185  | u0007 | ut158  | u0007 | ut158  | u0007 |
| ut-135 | u0096 | ut1128 | u0007 | ut1200/1680 | u0011 | ut186  | u0007 | ut159  | u0007 | ut159  | u0007 |
| ut-136 | u0097 | ut1129 | u0007 | ut1200/1710 | u0011 | ut187  | u0007 | ut160  | u0007 | ut160  | u0007 |
| ut-137 | u0098 | ut1130 | u0007 | ut1200/1740 | u0011 | ut188  | u0007 | ut161  | u0007 | ut161  | u0007 |
| ut-138 | u0099 | ut1131 | u0007 | ut1200/1770 | u0011 | ut189  | u0007 | ut162  | u0007 | ut162  | u0007 |
| ut-139 | u0100 | ut1132 | u0007 | ut1200/1800 | u0011 | ut190  | u0007 | ut163  | u0007 | ut163  | u0007 |
| ut-140 | u0101 | ut1133 | u0007 | ut1200/1830 | u0011 | ut191  | u0007 | ut164  | u0007 | ut164  | u0007 |
| ut-141 | u0102 | ut1134 | u0007 | ut1200/1860 | u0011 | ut192  | u0007 | ut165  | u0007 | ut165  | u0007 |
| ut-142 | u0103 | ut1135 | u0007 | ut1200/1890 | u0011 | ut193  | u0007 | ut166  | u0007 | ut166  | u0007 |
| ut-143 | u0104 | ut1136 | u0007 | ut1200/1920 | u0011 | ut194  | u0007 | ut167  | u0007 | ut167  | u0007 |
| ut-144 | u0105 | ut1137 | u0007 | ut1200/1950 | u0011 | ut195  | u0007 | ut168  | u0007 | ut168  | u0007 |
| ut-145 | u0106 | ut1138 | u0007 | ut1200/1980 | u0011 | ut196  | u0007 | ut169  | u0007 | ut169  | u0007 |
| ut-146 | u0107 | ut1139 | u0007 | ut1200/2010 | u0011 | ut197  | u0007 | ut170  | u0007 | ut170  | u0007 |
| ut-147 | u0108 | ut1140 | u0007 | ut1200/2040 | u0011 | ut198  | u0007 | ut171  | u0007 | ut171  | u0007 |
| ut-148 | u0109 | ut1141 | u0007 | ut1200/2070 | u0011 | ut199  | u0007 | ut172  | u0007 | ut172  | u0007 |
| ut-149 | u0110 | ut1142 | u0007 | ut1200/2100 | u0011 | ut200  | u0007 | ut173  | u0007 | ut173  | u0007 |
| ut-150 | u0111 | ut1143 | u0007 | ut1200/2130 | u0011 | ut201  | u0007 | ut174  | u0007 | ut174  | u0007 |
| ut-151 | u0112 | ut1144 | u0007 | ut1200/2160 | u0011 | ut202  | u0007 | ut175  | u0007 | ut175  | u0007 |
| ut-152 | u0113 | ut1145 | u0007 | ut1200/2190 | u0011 | ut203  | u0007 | ut176  | u0007 | ut176  | u0007 |
| ut-153 | u0114 | ut1146 | u0007 | ut1200/2220 | u0011 | ut204  | u0007 | ut177  | u0007 | ut177  | u0007 |
| ut-154 | u0115 | ut1147 | u0007 | ut1200/2250 | u0011 | ut205  | u0007 | ut178  | u0007 | ut178  | u0007 |
| ut-155 | u0116 | ut1148 | u0007 | ut1200/2280 | u0011 | ut206  | u0007 | ut179  | u0007 | ut179  | u0007 |
| ut-156 | u0117 | ut1149 | u0007 | ut1200/2310 | u0011 | ut207  | u0007 | ut180  | u0007 | ut180  | u0007 |
| ut-157 | u0118 | ut1150 | u0007 | ut1200/2340 | u0011 | ut208  | u0007 | ut181  | u0007 | ut181  | u0007 |
| ut-158 | u0119 | ut1151 | u0007 | ut1200/2370 | u0011 | ut209  | u0007 | ut182  | u0007 | ut182  | u0007 |
| ut-159 | u0120 | ut1152 | u0007 | ut1200/2400 | u0011 | ut210  | u0007 | ut183  | u0007 | ut183  | u0007 |
| ut-160 | u0121 | ut1153 | u0007 | ut1200/2430 | u0011 | ut211  | u0007 | ut184  | u0007 | ut184  | u0007 |
| ut-161 | u0122 | ut1154 | u0007 | ut1200/2460 | u0011 | ut212  | u0007 | ut185  | u0007 | ut185  | u0007 |
| ut-162 | u0123 | ut1155 | u0007 | ut1200/2490 | u0011 | ut213  | u0007 | ut186  | u0007 | ut186  | u0007 |
| ut-163 | u0124 | ut1156 | u0007 | ut1200/2520 | u0011 | ut214  | u0007 | ut187  | u0007 | ut187  | u0007 |
| ut-164 | u0125 | ut1157 | u0007 | ut1200/2550 | u0011 | ut215  | u0007 | ut188  | u0007 | ut188  | u0007 |
| ut-165 | u0126 | ut1158 | u0007 | ut1200/2580 | u0011 | ut216  | u0007 | ut189  | u0007 | ut189  | u0007 |
| ut-166 | u0127 | ut1159 | u0007 | ut1200/2610 | u0011 | ut217  | u0007 | ut190  | u0007 | ut190  | u0007 |
| ut-167 | u0128 | ut116  |       |             |       |        |       |        |       |        |       |



| DEVICE   | HEP   | DEVICE      | HEP   | DEVICE | HEP   | DEVICE    | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|----------|-------|-------------|-------|--------|-------|-----------|-------|--------|-------|--------|-------|
| HB-00175 | 60005 | HD2006301   | K0054 | HEP451 | A0451 | HEP-50005 | 50024 | HD0005 | R0390 | HM100  | S5011 |
| HB-00176 | 60005 | HD2006301-0 | K0054 | HEP452 | A0452 | HEP-50014 | 50024 | HD0005 | R0390 | HM200  | K0092 |
| HB-00186 | 60007 | HD2006307   | K0053 | HEP453 | A0453 | HEP-50016 | 50019 | HD0005 | R0390 | HM300  | K0094 |
| HB-00187 | 60005 | HD2006308   | K0053 | HEP454 | A0454 | HEP-50017 | 50025 | HD0005 | R0390 | HM400  | K0096 |
| HB-00364 | 60005 | HD2006301   | K0052 | HEP455 | A0455 | HEP-50021 | 50015 | HD0005 | R0390 | HM500  | R0097 |
| HB-00373 | 60005 | HD2006301   | K0052 | HEP456 | A0456 | HEP-50022 | 50015 | HD0005 | R0390 | HM600  | R0098 |
| HB-00481 | 60005 | HD2006301   | K0052 | HEP457 | A0457 | HEP-50023 | 50015 | HD0005 | R0390 | HM700  | R0099 |
| HC1      | K0090 | HD2006301   | K0052 | HEP458 | A0458 | HEP-50024 | 50021 | HD0005 | R0390 | HM800  | R0100 |
| HC30     | K0090 | HD2006301   | K0052 | HEP459 | A0459 | HEP-50025 | 50024 | HD0005 | R0390 | HM900  | R0101 |
| HC35     | K0130 | HD3006113   | Z0414 | HEP511 | A0501 | HEP-50025 | 50024 | HD0005 | R0390 | HM000  | R0102 |
| HC50     | R0090 | HD3006103   | Z0219 | HEP512 | A0502 | HEP-50026 | 50024 | HD0005 | R0390 | HM100  | R0103 |
| HC65     | R0090 | HD3006104   | Z0219 | HEP513 | A0503 | HEP-50027 | 50026 | HD0005 | R0390 | HM200  | R0104 |
| HC67     | K0050 | HD3006104   | Z0219 | HEP514 | A0504 | HEP-50028 | 50026 | HD0005 | R0390 | HM300  | R0105 |
| HC68     | K0052 | HD3006104   | Z0219 | HEP515 | A0505 | HEP-50029 | 50026 | HD0005 | R0390 | HM400  | R0106 |
| HC69     | R0090 | HD3006104   | Z0219 | HEP516 | A0506 | HEP-50030 | 50026 | HD0005 | R0390 | HM500  | R0107 |
| HC71     | K0090 | HD3006104   | Z0219 | HEP517 | A0507 | HEP-50031 | 50026 | HD0005 | R0390 | HM600  | R0108 |
| HC72     | R0090 | HD3006104   | Z0219 | HEP518 | A0508 | HEP-50032 | 50026 | HD0005 | R0390 | HM700  | R0109 |
| HC73     | K0050 | HD3006104   | Z0219 | HEP519 | A0509 | HEP-50033 | 50026 | HD0005 | R0390 | HM800  | R0110 |
| HC80     | K0052 | HD3006104   | Z0219 | HEP520 | A0510 | HEP-50034 | 50026 | HD0005 | R0390 | HM900  | R0111 |
| HC106    | K0091 | HD3006104   | Z0219 | HEP521 | A0511 | HEP-50035 | 50026 | HD0005 | R0390 | HM000  | R0112 |
| HC120    | K0130 | HU-107      | 00011 | HEP590 | 60091 | HEP-50035 | 50026 | HU000  | HU000 | HEP590 | 60091 |
| HC200    | K0090 | HU-107      | 00011 | HEP591 | 60092 | HEP-50036 | 50026 | HU000  | HU000 | HEP591 | 60092 |
| HC250    | K0090 | HU-107      | 00011 | HEP592 | 60093 | HEP-50037 | 50026 | HU000  | HU000 | HEP592 | 60093 |
| HC300    | K0090 | HU-107      | 00011 | HEP593 | 60094 | HEP-50038 | 50026 | HU000  | HU000 | HEP593 | 60094 |
| HC350    | K0090 | HU-107      | 00011 | HEP594 | 60095 | HEP-50039 | 50026 | HU000  | HU000 | HEP594 | 60095 |
| HC400    | K0090 | HU-107      | 00011 | HEP595 | 60096 | HEP-50040 | 50026 | HU000  | HU000 | HEP595 | 60096 |
| HC450    | K0090 | HU-107      | 00011 | HEP596 | 60097 | HEP-50041 | 50026 | HU000  | HU000 | HEP596 | 60097 |
| HC500    | K0090 | HU-107      | 00011 | HEP597 | 60098 | HEP-50042 | 50026 | HU000  | HU000 | HEP597 | 60098 |
| HC550    | K0090 | HU-107      | 00011 | HEP598 | 60099 | HEP-50043 | 50026 | HU000  | HU000 | HEP598 | 60099 |
| HC600    | K0090 | HU-107      | 00011 | HEP599 | 60100 | HEP-50044 | 50026 | HU000  | HU000 | HEP599 | 60100 |
| HC650    | K0090 | HU-107      | 00011 | HEP600 | 60101 | HEP-50045 | 50026 | HU000  | HU000 | HEP600 | 60101 |
| HC700    | K0090 | HU-107      | 00011 | HEP601 | 60102 | HEP-50046 | 50026 | HU000  | HU000 | HEP601 | 60102 |
| HC750    | K0090 | HU-107      | 00011 | HEP602 | 60103 | HEP-50047 | 50026 | HU000  | HU000 | HEP602 | 60103 |
| HC800    | K0090 | HU-107      | 00011 | HEP603 | 60104 | HEP-50048 | 50026 | HU000  | HU000 | HEP603 | 60104 |
| HC850    | K0090 | HU-107      | 00011 | HEP604 | 60105 | HEP-50049 | 50026 | HU000  | HU000 | HEP604 | 60105 |
| HC900    | K0090 | HU-107      | 00011 | HEP605 | 60106 | HEP-50050 | 50026 | HU000  | HU000 | HEP605 | 60106 |
| HC950    | K0090 | HU-107      | 00011 | HEP606 | 60107 | HEP-50051 | 50026 | HU000  | HU000 | HEP606 | 60107 |
| HC000    | K0090 | HU-107      | 00011 | HEP607 | 60108 | HEP-50052 | 50026 | HU000  | HU000 | HEP607 | 60108 |
| HC050    | K0090 | HU-107      | 00011 | HEP608 | 60109 | HEP-50053 | 50026 | HU000  | HU000 | HEP608 | 60109 |
| HC100    | K0090 | HU-107      | 00011 | HEP609 | 60110 | HEP-50054 | 50026 | HU000  | HU000 | HEP609 | 60110 |
| HC150    | K0090 | HU-107      | 00011 | HEP610 | 60111 | HEP-50055 | 50026 | HU000  | HU000 | HEP610 | 60111 |
| HC200    | K0090 | HU-107      | 00011 | HEP611 | 60112 | HEP-50056 | 50026 | HU000  | HU000 | HEP611 | 60112 |
| HC250    | K0090 | HU-107      | 00011 | HEP612 | 60113 | HEP-50057 | 50026 | HU000  | HU000 | HEP612 | 60113 |
| HC300    | K0090 | HU-107      | 00011 | HEP613 | 60114 | HEP-50058 | 50026 | HU000  | HU000 | HEP613 | 60114 |
| HC350    | K0090 | HU-107      | 00011 | HEP614 | 60115 | HEP-50059 | 50026 | HU000  | HU000 | HEP614 | 60115 |
| HC400    | K0090 | HU-107      | 00011 | HEP615 | 60116 | HEP-50060 | 50026 | HU000  | HU000 | HEP615 | 60116 |
| HC450    | K0090 | HU-107      | 00011 | HEP616 | 60117 | HEP-50061 | 50026 | HU000  | HU000 | HEP616 | 60117 |
| HC500    | K0090 | HU-107      | 00011 | HEP617 | 60118 | HEP-50062 | 50026 | HU000  | HU000 | HEP617 | 60118 |
| HC550    | K0090 | HU-107      | 00011 | HEP618 | 60119 | HEP-50063 | 50026 | HU000  | HU000 | HEP618 | 60119 |
| HC600    | K0090 | HU-107      | 00011 | HEP619 | 60120 | HEP-50064 | 50026 | HU000  | HU000 | HEP619 | 60120 |
| HC650    | K0090 | HU-107      | 00011 | HEP620 | 60121 | HEP-50065 | 50026 | HU000  | HU000 | HEP620 | 60121 |
| HC700    | K0090 | HU-107      | 00011 | HEP621 | 60122 | HEP-50066 | 50026 | HU000  | HU000 | HEP621 | 60122 |
| HC750    | K0090 | HU-107      | 00011 | HEP622 | 60123 | HEP-50067 | 50026 | HU000  | HU000 | HEP622 | 60123 |
| HC800    | K0090 | HU-107      | 00011 | HEP623 | 60124 | HEP-50068 | 50026 | HU000  | HU000 | HEP623 | 60124 |
| HC850    | K0090 | HU-107      | 00011 | HEP624 | 60125 | HEP-50069 | 50026 | HU000  | HU000 | HEP624 | 60125 |
| HC900    | K0090 | HU-107      | 00011 | HEP625 | 60126 | HEP-50070 | 50026 | HU000  | HU000 | HEP625 | 60126 |
| HC950    | K0090 | HU-107      | 00011 | HEP626 | 60127 | HEP-50071 | 50026 | HU000  | HU000 | HEP626 | 60127 |
| HC000    | K0090 | HU-107      | 00011 | HEP627 | 60128 | HEP-50072 | 50026 | HU000  | HU000 | HEP627 | 60128 |
| HC050    | K0090 | HU-107      | 00011 | HEP628 | 60129 | HEP-50073 | 50026 | HU000  | HU000 | HEP628 | 60129 |
| HC100    | K0090 | HU-107      | 00011 | HEP629 | 60130 | HEP-50074 | 50026 | HU000  | HU000 | HEP629 | 60130 |
| HC150    | K0090 | HU-107      | 00011 | HEP630 | 60131 | HEP-50075 | 50026 | HU000  | HU000 | HEP630 | 60131 |
| HC200    | K0090 | HU-107      | 00011 | HEP631 | 60132 | HEP-50076 | 50026 | HU000  | HU000 | HEP631 | 60132 |
| HC250    | K0090 | HU-107      | 00011 | HEP632 | 60133 | HEP-50077 | 50026 | HU000  | HU000 | HEP632 | 60133 |
| HC300    | K0090 | HU-107      | 00011 | HEP633 | 60134 | HEP-50078 | 50026 | HU000  | HU000 | HEP633 | 60134 |
| HC350    | K0090 | HU-107      | 00011 | HEP634 | 60135 | HEP-50079 | 50026 | HU000  | HU000 | HEP634 | 60135 |
| HC400    | K0090 | HU-107      | 00011 | HEP635 | 60136 | HEP-50080 | 50026 | HU000  | HU000 | HEP635 | 60136 |
| HC450    | K0090 | HU-107      | 00011 | HEP636 | 60137 | HEP-50081 | 50026 | HU000  | HU000 | HEP636 | 60137 |
| HC500    | K0090 | HU-107      | 00011 | HEP637 | 60138 | HEP-50082 | 50026 | HU000  | HU000 | HEP637 | 60138 |
| HC550    | K0090 | HU-107      | 00011 | HEP638 | 60139 | HEP-50083 | 50026 | HU000  | HU000 | HEP638 | 60139 |
| HC600    | K0090 | HU-107      | 00011 | HEP639 | 60140 | HEP-50084 | 50026 | HU000  | HU000 | HEP639 | 60140 |
| HC650    | K0090 | HU-107      | 00011 | HEP640 | 60141 | HEP-50085 | 50026 | HU000  | HU000 | HEP640 | 60141 |
| HC700    | K0090 | HU-107      | 00011 | HEP641 | 60142 | HEP-50086 | 50026 | HU000  | HU000 | HEP641 | 60142 |
| HC750    | K0090 | HU-107      | 00011 | HEP642 | 60143 | HEP-50087 | 50026 | HU000  | HU000 | HEP642 | 60143 |
| HC800    | K0090 | HU-107      | 00011 | HEP643 | 60144 | HEP-50088 | 50026 | HU000  | HU000 | HEP643 | 60144 |
| HC850    | K0090 | HU-107      | 00011 | HEP644 | 60145 | HEP-50089 | 50026 | HU000  | HU000 | HEP644 | 60145 |
| HC900    | K0090 | HU-107      | 00011 | HEP645 | 60146 | HEP-50090 | 50026 | HU000  | HU000 | HEP645 | 60146 |
| HC950    | K0090 | HU-107      | 00011 | HEP646 | 60147 | HEP-50091 | 50026 | HU000  | HU000 | HEP646 | 60147 |
| HC000    | K0090 | HU-107      | 00011 | HEP647 | 60148 | HEP-50092 | 50026 | HU000  | HU000 | HEP647 | 60148 |
| HC050    | K0090 | HU-107      | 00011 | HEP648 | 60149 | HEP-50093 | 50026 | HU000  | HU000 | HEP648 | 60149 |
| HC100    | K0090 | HU-107      | 00011 | HEP649 | 60150 | HEP-50094 | 50026 | HU000  | HU000 | HEP649 | 60150 |
| HC150    | K0090 | HU-107      | 00011 | HEP650 | 60151 | HEP-50095 | 50026 | HU000  | HU000 | HEP650 | 60151 |
| HC200    | K0090 | HU-107      | 00011 | HEP651 | 60152 | HEP-50096 | 50026 | HU000  | HU000 | HEP651 | 60152 |
| HC250    | K0090 | HU-107      | 00011 | HEP652 | 60153 | HEP-50097 | 50026 | HU000  | HU000 | HEP652 | 60153 |
| HC300    | K0090 | HU-107      | 00011 | HEP653 | 60154 | HEP-50098 | 50026 | HU000  | HU000 | HEP653 | 60154 |
| HC350    | K0090 | HU-107      | 00011 | HEP654 | 60155 | HEP-50099 | 50026 | HU000  | HU000 | HEP654 | 60155 |
| HC400    | K0090 | HU-107      | 00011 | HEP655 | 60156 | HEP-50100 | 50026 | HU000  | HU000 | HEP655 | 60156 |
| HC450    | K0090 | HU-107      | 00011 | HEP656 | 60157 | HEP-50101 | 50026 | HU000  | HU000 | HEP656 | 60157 |
| HC500    | K0090 | HU-107      | 00011 | HEP657 | 60158 | HEP-50102 | 50026 | HU000  | HU000 | HEP657 | 60158 |
| HC550    | K0090 | HU-107      | 00011 | HEP658 | 60159 | HEP-50103 | 50026 | HU000  | HU000 | HEP658 | 60159 |
| HC600    | K0090 | HU-107      | 00011 | HEP659 | 60160 | HEP-50104 | 50026 | HU000  | HU000 | HEP659 | 60160 |
| HC650    | K0090 | HU-107      | 00011 | HEP660 | 60161 | HEP-50105 | 50026 | HU000  | HU000 | HEP660 | 60161 |
| HC700    | K0090 | HU-107      | 00011 | HEP661 | 60162 | HEP-50106 | 50026 | HU000  | HU000 | HEP661 | 60162 |
| HC750    | K0090 | HU-107      | 00011 | HEP662 | 60163 | HEP-50107 | 50026 | HU000  | HU000 | HEP662 | 60163 |
| HC800    | K0090 | HU-107      | 00011 | HEP663 | 60164 | HEP-50108 | 50026 | HU000  | HU000 | HEP663 | 60164 |
| HC850    | K0090 | HU-107      | 00011 | HEP664 | 60165 | HEP-50109 | 50026 | HU000  | HU000 | HEP664 | 60165 |
| HC900    | K0090 | HU-107      | 00011 | HEP665 | 60166 | HEP-50110 | 50026 | HU000  | HU000 | HEP665 | 60166 |
| HC950    | K0090 | HU-107      | 00011 | HEP666 | 60167 | HEP-50111 | 50026 | HU000  | HU000 | HEP666 | 60167 |
| HC000    | K0090 | HU-107      | 00011 | HEP667 | 60168 | HEP-50112 | 50026 | HU000  | HU000 | HEP667 | 60168 |
| HC050    | K0090 | HU-107      | 00011 | HEP668 | 60169 | HEP-50113 |       |        |       |        |       |

| DEVICE      | HEP         | DEVICE        | HEP   | DEVICE           | HEP    | DEVICE   | HEP   | DEVICE | HEP         | DEVICE | HEP   |
|-------------|-------------|---------------|-------|------------------|--------|----------|-------|--------|-------------|--------|-------|
| MS7350      | Z4420       | MS309680d     | S0014 | MZ-9             | Z0412  | IKT1021  | J0009 | JZ4016 | S0010       | JK30A  | G0008 |
| MS4003c     | S5115       | MS150024A     | S0064 | MZ-9d            | Z0412  | IKT1022  | S0019 | JZ4013 | S0013       | JK40   | G0003 |
| MS-5/1      | R0000       | MS1513c717    | S0004 | MZ-11            | Z0414  | IKT1023  | J0009 | JZ4014 | S0014       | JK100  | G0006 |
| MS-2u       | R0090       | MS151671u     | S0000 | MZ-11A           | Z0414  | IKT1024  | S0019 | JZ4017 | S0015       | JK200  | G0008 |
| MS-40021    | S0015       | MT-000721U    | S0011 | MZ-12A           | Z0415  | IKT1025  | S0009 | JZ4026 | K9135       | K105   | R0050 |
| MS-40022    | S0015       | MT-000721E    | S0011 | MZ-12b           | Z0415  | IKT1026  | S0009 | JZ4026 | S0013       | K105   | R0052 |
| MS-40023    | S0015       | MT-000723A    | S0011 | MZ-75Y           | Z0410  | IKT1027  | S0019 | JZ4035 | S0019       | K105   | R0052 |
| MS-40024    | S0015       | MT-000723b    | S0011 | MZ-70K           | Z0409  | IKT1028  | S0019 | JZ4034 | S0019       | K105   | R0053 |
| MS-40025    | S0019       | MT-000770b    | G0011 | 1956             | K0052  | IKT1029  | S7002 | JZ4035 | UJ005+00011 | K105   | R0053 |
| MS-40026    | S0019       | MT-000792c    | S0000 | 19501            | S0015  | IKT1030  | S0015 | JZ4036 | G0009       | K105   | R0054 |
| MS-40031    | S0022       | MT405102c     | S0019 | 1CG              | C0060P | IKT1031  | S0020 | JZ4037 | K0034       | K105   | R0054 |
| MSFD1       | K0012       | MT000011F     | S0013 | 1CG1             | C0077P | IKT1032  | S0015 | JZ4038 | K1034       | K105   | R0055 |
| MSFD-1A     | K0012       | MT000011M     | S0013 | 1CG50 (IR)       | C0001  | IKT1033  | S0013 | JZ4040 | K2502       | K105   | R0055 |
| MS071       | K0001       | MT000011U     | S0013 | 1CG2             | C0083  | IKT1034  | S0008 | JZ4041 | Z0215       | K105   | R0056 |
| MT100       | S0015       | MT000011U     | S0025 | 1CG30 (IR)       | C0067U | IKT1035  | S0001 | JZ4042 | S0033       | K205   | R0050 |
| MT101       | S0015       | MT000011F     | S0025 | 1CG4             | C0062P | IKT1036  | S0006 | JZ4043 | S0033       | K205   | R0052 |
| MT102       | S0014       | MT000011U     | S0015 | 1CG50 (IR)       | C0062P | IKT1037  | S0021 | JZ4044 | S0016       | K205   | R0052 |
| MT103       | S0014       | MT000011M     | S0015 | 1CG57 (IR)       | C0063P | IKT1038  | S0019 | JZ4045 | S0011       | K205   | R0053 |
| MT400       | S0011       | MT000011K     | S0015 | 1CG58 (IR)       | C0057P | IKT1039  | S0019 | JZ4046 | S0015       | K205   | R0053 |
| MT401       | S0011       | MT000011U     | K9135 | 1CG59 (IR)       | C0076P | IKT1041  | S0025 | JZ4047 | S0015       | K205   | R0053 |
| MT5b4413    | S0015       | MT0001210     | S0015 | 1CG10 (IR)       | C0071P | IKT1042  | S0020 | JZ4049 | S0030       | K205   | R0054 |
| MT040519C   | U0011+G0009 | MT0001310     | S0014 | 1CG11            | C0094P | IKT1043  | S0015 | JZ4050 | S0015       | K205   | R0055 |
| MT040519C-U | U0011+G0011 | MT0001010     | S0017 | 1CG12 (IR)       | C0095P | IKT1044  | S0021 | JZ4050 | G0011       | K205   | R0055 |
| MT101011K   | S0009       | MT0001710     | S0017 | 1CG13            | C0095P | IKT1045  | S0021 | JZ4050 | G0007       | K205   | R0056 |
| MT101021A   | S0009       | MT0001010     | S0015 | 1CG-1 (EL COM)   | G0001  | IKT1046  | S0009 | JZ4076 | G0005       | K205   | R0052 |
| MT102541b   | S0009       | MT000191M     | S0014 | 1CG-2 (PH LCO)   | C0077P | IKT1047  | S0006 | JZ4076 | K0034       | K205   | R0052 |
| MT102541c   | S0009       | MT100191U     | S0005 | 1CG-3 (PH LCO)   | C0089U | IKT1048  | S0024 | JZ4076 | S0019       | K205   | R0054 |
| MT102541d   | S0009       | MT10030210    | S0016 | 1CG-4 (PH LCO)   | C0089U | IKT1049  | S0021 | JZ4076 | S0015       | K205   | R0054 |
| MT103511A   | S0009       | MT5007010     | S0011 | 1CG-11 (EL)      | C0082P | IKT1050  | S0009 | JZ4076 | S0015       | K205   | R0055 |
| MT104941C   | S0019       | MT5057201     | S0015 | 1CG-12 (PH LCO)  | C0076P | 100F1    | G0005 | JZ4076 | S0014       | K205   | R0055 |
| MT104942A   | S0015       | MT505721G     | S0015 | 1CG-13 (PH LCO)  | C0071P | 1TT210   | K205  | JZ4077 | S0015       | K205   | R0056 |
| MT104941d   | S0015       | MT505731G     | S0015 | 1CG-14 (PH LCO)  | C0072P | 1TT410   | K205  | JZ4078 | S0015       | K205   | R0056 |
| MT104941d-0 | S0015       | MT5057310     | S0015 | 1CG-15 (PH LCO)  | C0083P | 1TT413   | K205  | JZ4078 | S0015       | K205   | R0056 |
| MT104951C   | S0015       | MT5138351A    | S0014 | 1CG-16 (EL COM)  | C0092U | 1TT921   | K205  | JZ4078 | K205        | K205   | R0056 |
| MT104971A0  | S0015       | MT0003071G    | K9135 | 1CG-16 (PH LCO)  | C0089U | 1TT-410  | K205  | JZ4078 | K9135       | K205   | R0056 |
| MT105011C   | S0019       | MT30037310    | S0015 | 1CG-17 (EL COM)  | C0094P | 100-1000 | Z0414 | JZ4078 | R0052       | K205   | R0056 |
| MT105012B   | S0019       | MT30037310    | S0015 | 1CG-17 (PH LCO)  | C0095P | 100      | K205  | JZ4078 | K9135       | K205   | R0056 |
| MT1050210   | S0012       | MT12 (TRANS)  | S0005 | 1CG-18 (EL COM)  | C0095P | 100      | K205  | JZ4078 | K9135       | K205   | R0056 |
| MT106031d   | S0015       | MT15 (PH LCO) | K0050 | 1CG-18 (PH LCO)  | C0095P | 100      | K205  | JZ4078 | S0010       | K205   | R0056 |
| MT200942A   | G0007       | MT15 (TRANS)  | G0005 | 1CG-20 (EL COM)  | C0091  | 1007     | S0010 | JZ4078 | S0015       | K205   | R0063 |
| MT200941d   | S0007       | MT16 (TRANS)  | G0005 | 1CG-21 (EL COM)  | C0063  | 1008     | S0015 | JZ4078 | K0053       | K205   | R0062 |
| MT200941d-0 | S0007       | MT17 (TRANS)  | G0005 | 1CG-21 (PH LCO)  | C0077P | 1009     | S0015 | JZ4078 | K0052       | K205   | R0062 |
| MT2009510   | S0009       | MT18 (TRANS)  | G0005 | 1CG-22 (EL COM)  | C0090  | 1009A    | S0015 | JZ4078 | S0011       | K205   | R0062 |
| MT200951C   | S0009       | MT19 (TRANS)  | G0005 | 1CG-23 (EL COM)  | C0066P | 1007     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT200951C-0 | S0009       | MT20 (EL COM) | R0062 | 1CG-30 (EL COM)  | C0090  | 1009     | S0009 | JZ4078 | S0015       | K205   | R0062 |
| MT200951d   | S0009       | MT20          | R0062 | 1CG-34 (EL COM)  | C1062P | 1001     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT200773b   | S0009       | MT20          | R0062 | 1CG-55 (EL COM)  | C0090  | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT200771d   | S0009       | MT20          | R0062 | 1CG-74 (EL COM)  | C0066P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT201721A   | S0009       | MT20          | R0062 | 1CG-75 (EL COM)  | C0066P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT2017210   | S0009       | MT2000105     | R0062 | 1CG-76 (EL COM)  | C0066P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT203701d   | S0009       | MT2000405     | R0062 | 1CG-93 (EL COM)  | C00076 | 1006     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT204351E   | S0009       | MT2000405-0   | R0062 | 1CG-93 (EL COM)  | C00076 | 1006     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT204053A   | S0009       | MT2000405     | R0062 | 1CG-93 (EL COM)  | C00076 | 1006     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT204053d   | S0009       | MT2000405     | R0062 | 1CG-93 (EL COM)  | C00076 | 1006     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT2040710   | S0009       | MT-15 (TRANS) | G0005 | 1CG-93 (EL COM)  | C00076 | 1006     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT204071d   | S0009       | MT-23         | R0062 | 1CG-71 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT2040730   | S0009       | MT-23b        | R0062 | 1CG-74 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT204730A   | S0009       | MT-23b        | R0062 | 1CG-60 (EL COM)  | C00076 | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT3030c0b   | S0019       | MT-25         | R0062 | 1CG-84 (EL COM)  | C0094P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303711A   | S0009       | MT-26         | R0052 | 1CG-86 (EL COM)  | C0094P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303711A0  | S0011       | MT-27         | R0062 | 1CG-87 (EL COM)  | C0020P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303711b   | S0011       | MT-40         | R0062 | 1CG-88 (EL COM)  | C0046P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303711d0  | S0011       | MT-80         | R0062 | 1CG-93 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303711d-0 | S0015       | MT200         | S0026 | 1CG-96 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT3037210   | S0015       | MT400         | S0024 | 1CG-96 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT3037210-0 | S0015       | MT400         | S0024 | 1CG-96 (EL COM)  | C0075P | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303801A   | S0010       | MT5-1A        | Z0412 | 1CG-213 (EL COM) | G0010  | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303801A0  | S0010       | MT5-1B        | Z0412 | 1CG-214 (IR)     | Z003P  | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303801d   | S0010       | MT11          | Z0414 | 1CG-130 (IR)     | C0092U | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT3038010   | S0010       | MT11A         | Z0414 | 1CG-1            | C0001  | 1009     | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT303801d-0 | S0016       | MT12          | Z0414 | 1CG-16           | A0053  | J0097    | S0019 | JZ4078 | S0015       | K205   | R0062 |
| MT303801b   | S0016       | MT12          | Z0415 | 1F09             | S0005  | J24106   | Z0407 | JZ4078 | S0015       | K205   | R0062 |
| MT303801c   | S0016       | MT12A         | Z0415 | 1N00100A         | K0050  | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003K   | S0015       | MT12S         | Z0415 | 1N00120          | K9135  | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003d   | S0015       | MT13          | Z0416 | 1N00120S         | Z0406  | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003E   | S0015       | MT13A         | Z0416 | 1N001227         | R0052  | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003F   | S0015       | MT13B         | Z0416 | 1M1              | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003G   | S0015       | MT13C         | Z0416 | 1M1A             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003H   | S0015       | MT13D         | Z0416 | 1M2A             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003I   | S0015       | MT13E         | Z0416 | 1M2B             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003J   | S0015       | MT13F         | Z0416 | 1M2C             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003K   | S0015       | MT13G         | Z0416 | 1M2D             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003L   | S0015       | MT13H         | Z0416 | 1M2E             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003M   | S0015       | MT13I         | Z0416 | 1M2F             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003N   | S0015       | MT13J         | Z0416 | 1M2G             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003O   | S0015       | MT13K         | Z0416 | 1M2H             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003P   | S0015       | MT13L         | Z0416 | 1M2I             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003Q   | S0015       | MT13M         | Z0416 | 1M2J             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003R   | S0015       | MT13N         | Z0416 | 1M2K             | K012   | J24106   | S0015 | JZ4078 | S0015       | K205   | R0062 |
| MT304003S   | S0015       | MT13O         | Z0416 | 1M2L             | K012   | J24106   |       |        |             |        |       |











| DEVICE  | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE  | HEP   | DEVICE  | HEP   | DEVICE    | HEP     |
|---------|-------|--------|-------|--------|-------|---------|-------|---------|-------|-----------|---------|
| MHT7519 | 27004 | MJC216 | 27046 | MNB    | R0059 | MP1532  | 00010 | MP3374  | 00010 | MP3-A1C   | 00010   |
| MHT7601 | 27006 | MJC240 | 27048 | MNY    | R0050 | MP1532A | 00013 | MP3374S | 00013 | MP3-A1S   | 00013   |
| MHT7602 | 27007 | MJC241 | 27049 | MNZ    | R0050 | MP1533  | 00018 | MP3370  | 00018 | MP3-A10   | 00018   |
| MHT7603 | 27008 | MJC242 | 27050 | MN1    | R0050 | MP1534  | 00013 | MP3374T | 00013 | MP3-A10T  | 00013   |
| MHT7604 | 27009 | MJC243 | 27051 | MN2    | R0050 | MP1534A | 00013 | MP3370S | 00013 | MP3-A10S  | 00013   |
| MHT7605 | 27010 | MJC244 | 27052 | MN3    | R0050 | MP1535  | 00013 | MP3370U | 00013 | MP3-A10U  | 00013   |
| MHT7606 | 27011 | MJC245 | 27053 | MN4    | R0050 | MP1535A | 00013 | MP3370V | 00013 | MP3-A10V  | 00013   |
| MHT7607 | 27012 | MJC246 | 27054 | MN5    | R0050 | MP1536  | 00013 | MP3371  | 00013 | MP3-A11   | 00013   |
| MHT7608 | 27013 | MJC247 | 27055 | MN6    | R0050 | MP1536A | 00013 | MP3371S | 00013 | MP3-A11S  | 00013   |
| MHT7609 | 27014 | MJC248 | 27056 | MN7    | R0050 | MP1537  | 00010 | MP3360  | 00010 | MP3-A50   | 00010   |
| MHT7610 | 27015 | MJC249 | 27057 | MN8    | R0050 | MP1537A | 00010 | MP3367  | 00010 | MP3-A50T  | 00010   |
| MHT7611 | 27016 | MJC250 | 27058 | MN9    | R0050 | MP1538  | 00010 | MP3372  | 00010 | MP3-A50U  | 00010   |
| MHT7612 | 27017 | MJC251 | 27059 | MN10   | R0050 | MP1538A | 00010 | MP3366  | 00010 | MP3-A50V  | 00010   |
| MHT7613 | 27018 | MJC252 | 27060 | MN11   | R0050 | MP1539  | 00010 | MP3367S | 00010 | MP3-A50VS | 00010   |
| MHT7614 | 27019 | MJC253 | 27061 | MN12   | R0050 | MP1540  | 00010 | MP3367T | 00010 | MP3-A50VT | 00010   |
| MHT7615 | 27020 | MJC254 | 27062 | MN13   | R0050 | MP1540A | 00010 | MP3367U | 00010 | MP3-A50VU | 00010   |
| MHT7616 | 27021 | MJC255 | 27063 | MN14   | R0050 | MP1541  | 00010 | MP3367V | 00010 | MP3-A50VU | 00010   |
| MHT7617 | 27022 | MJC256 | 27064 | MN15   | R0050 | MP1542  | 00010 | MP3367W | 00010 | MP3-A50VU | 00010   |
| MHT7618 | 27023 | MJC257 | 27065 | MN16   | R0050 | MP1542A | 00010 | MP3367X | 00010 | MP3-A50VU | 00010   |
| MHT7619 | 27024 | MJC258 | 27066 | MN17   | R0050 | MP1543  | 00010 | MP3367Y | 00010 | MP3-A50VU | 00010   |
| MHT7620 | 27025 | MJC259 | 27067 | MN18   | R0050 | MP1543A | 00010 | MP3367Z | 00010 | MP3-A50VU | 00010   |
| MHT7621 | 27026 | MJC260 | 27068 | MN19   | R0050 | MP1544  | 00010 | MP3367A | 00010 | MP3-A50VU | 00010   |
| MHT7622 | 27027 | MJC261 | 27069 | MN20   | R0050 | MP1544A | 00010 | MP3367B | 00010 | MP3-A50VU | 00010   |
| MHT7623 | 27028 | MJC262 | 27070 | MN21   | R0050 | MP1545  | 00010 | MP3367C | 00010 | MP3-A50VU | 00010   |
| MHT7624 | 27029 | MJC263 | 27071 | MN22   | R0050 | MP1545A | 00010 | MP3367D | 00010 | MP3-A50VU | 00010   |
| MHT7625 | 27030 | MJC264 | 27072 | MN23   | R0050 | MP1546  | 00010 | MP3367E | 00010 | MP3-A50VU | 00010   |
| MHT7626 | 27031 | MJC265 | 27073 | MN24   | R0050 | MP1547  | 00010 | MP3367F | 00010 | MP3-A50VU | 00010   |
| MHT7627 | 27032 | MJC266 | 27074 | MN25   | R0050 | MP1548  | 00010 | MP3367G | 00010 | MP3-A50VU | 00010   |
| MHT7628 | 27033 | MJC267 | 27075 | MN26   | R0050 | MP1549  | 00010 | MP3367H | 00010 | MP3-A50VU | 00010   |
| MHT7629 | 27034 | MJC268 | 27076 | MN27   | R0050 | MP1549A | 00010 | MP3367I | 00010 | MP3-A50VU | 00010   |
| MHT7630 | 27035 | MJC269 | 27077 | MN28   | R0050 | MP1550  | 00010 | MP3367J | 00010 | MP3-A50VU | 00010   |
| MHT7631 | 27036 | MJC270 | 27078 | MN29   | R0050 | MP1550A | 00010 | MP3367K | 00010 | MP3-A50VU | 00010   |
| MHT7632 | 27037 | MJC271 | 27079 | MN30   | R0050 | MP1551  | 00010 | MP3367L | 00010 | MP3-A50VU | 00010   |
| MHT7633 | 27038 | MJC272 | 27080 | MN31   | R0050 | MP1552  | 00010 | MP3367M | 00010 | MP3-A50VU | 00010   |
| MHT7634 | 27039 | MJC273 | 27081 | MN32   | R0050 | MP1553  | 00010 | MP3367N | 00010 | MP3-A50VU | 00010   |
| MHT7635 | 27040 | MJC274 | 27082 | MN33   | R0050 | MP1554  | 00010 | MP3367O | 00010 | MP3-A50VU | 00010   |
| MHT7636 | 27041 | MJC275 | 27083 | MN34   | R0050 | MP1555  | 00010 | MP3367P | 00010 | MP3-A50VU | 00010   |
| MHT7637 | 27042 | MJC276 | 27084 | MN35   | R0050 | MP1556  | 00010 | MP3367Q | 00010 | MP3-A50VU | 00010   |
| MHT7638 | 27043 | MJC277 | 27085 | MN36   | R0050 | MP1557  | 00010 | MP3367R | 00010 | MP3-A50VU | 00010   |
| MHT7639 | 27044 | MJC278 | 27086 | MN37   | R0050 | MP1558  | 00010 | MP3367S | 00010 | MP3-A50VU | 00010   |
| MHT7640 | 27045 | MJC279 | 27087 | MN38   | R0050 | MP1559  | 00010 | MP3367T | 00010 | MP3-A50VU | 00010   |
| MHT7641 | 27046 | MJC280 | 27088 | MN39   | R0050 | MP1560  | 00010 | MP3367U | 00010 | MP3-A50VU | 00010   |
| MHT7642 | 27047 | MJC281 | 27089 | MN40   | R0050 | MP1561  | 00010 | MP3367V | 00010 | MP3-A50VU | 00010   |
| MHT7643 | 27048 | MJC282 | 27090 | MN41   | R0050 | MP1562  | 00010 | MP3367W | 00010 | MP3-A50VU | 00010   |
| MHT7644 | 27049 | MJC283 | 27091 | MN42   | R0050 | MP1563  | 00010 | MP3367X | 00010 | MP3-A50VU | 00010   |
| MHT7645 | 27050 | MJC284 | 27092 | MN43   | R0050 | MP1564  | 00010 | MP3367Y | 00010 | MP3-A50VU | 00010   |
| MHT7646 | 27051 | MJC285 | 27093 | MN44   | R0050 | MP1565  | 00010 | MP3367Z | 00010 | MP3-A50VU | 00010   |
| MHT7647 | 27052 | MJC286 | 27094 | MN45   | R0050 | MP1566  | 00010 | MP3367A | 00010 | MP3-A50VU | 00010   |
| MHT7648 | 27053 | MJC287 | 27095 | MN46   | R0050 | MP1567  | 00010 | MP3367B | 00010 | MP3-A50VU | 00010   |
| MHT7649 | 27054 | MJC288 | 27096 | MN47   | R0050 | MP1568  | 00010 | MP3367C | 00010 | MP3-A50VU | 00010   |
| MHT7650 | 27055 | MJC289 | 27097 | MN48   | R0050 | MP1569  | 00010 | MP3367D | 00010 | MP3-A50VU | 00010   |
| MHT7651 | 27056 | MJC290 | 27098 | MN49   | R0050 | MP1570  | 00010 | MP3367E | 00010 | MP3-A50VU | 00010   |
| MHT7652 | 27057 | MJC291 | 27099 | MN50   | R0050 | MP1571  | 00010 | MP3367F | 00010 | MP3-A50VU | 00010   |
| MHT7653 | 27058 | MJC292 | 27100 | MN51   | R0050 | MP1572  | 00010 | MP3367G | 00010 | MP3-A50VU | 00010   |
| MHT7654 | 27059 | MJC293 | 27101 | MN52   | R0050 | MP1573  | 00010 | MP3367H | 00010 | MP3-A50VU | 00010   |
| MHT7655 | 27060 | MJC294 | 27102 | MN53   | R0050 | MP1574  | 00010 | MP3367I | 00010 | MP3-A50VU | 00010   |
| MHT7656 | 27061 | MJC295 | 27103 | MN54   | R0050 | MP1575  | 00010 | MP3367J | 00010 | MP3-A50VU | 00010   |
| MHT7657 | 27062 | MJC296 | 27104 | MN55   | R0050 | MP1576  | 00010 | MP3367K | 00010 | MP3-A50VU | 00010   |
| MHT7658 | 27063 | MJC297 | 27105 | MN56   | R0050 | MP1577  | 00010 | MP3367L | 00010 | MP3-A50VU | 00010   |
| MHT7659 | 27064 | MJC298 | 27106 | MN57   | R0050 | MP1578  | 00010 | MP3367M | 00010 | MP3-A50VU | 00010   |
| MHT7660 | 27065 | MJC299 | 27107 | MN58   | R0050 | MP1579  | 00010 | MP3367N | 00010 | MP3-A50VU | 00010   |
| MHT7661 | 27066 | MJC300 | 27108 | MN59   | R0050 | MP1580  | 00010 | MP3367O | 00010 | MP3-A50VU | 00010   |
| MHT7662 | 27067 | MJC301 | 27109 | MN60   | R0050 | MP1581  | 00010 | MP3367P | 00010 | MP3-A50VU | 00010   |
| MHT7663 | 27068 | MJC302 | 27110 | MN61   | R0050 | MP1582  | 00010 | MP3367Q | 00010 | MP3-A50VU | 00010   |
| MHT7664 | 27069 | MJC303 | 27111 | MN62   | R0050 | MP1583  | 00010 | MP3367R | 00010 | MP3-A50VU | 00010   |
| MHT7665 | 27070 | MJC304 | 27112 | MN63   | R0050 | MP1584  | 00010 | MP3367S | 00010 | MP3-A50VU | 00010   |
| MHT7666 | 27071 | MJC305 | 27113 | MN64   | R0050 | MP1585  | 00010 | MP3367T | 00010 | MP3-A50VU | 00010   |
| MHT7667 | 27072 | MJC306 | 27114 | MN65   | R0050 | MP1586  | 00010 | MP3367U | 00010 | MP3-A50VU | 00010   |
| MHT7668 | 27073 | MJC307 | 27115 | MN66   | R0050 | MP1587  | 00010 | MP3367V | 00010 | MP3-A50VU | 00010   |
| MHT7669 | 27074 | MJC308 | 27116 | MN67   | R0050 | MP1588  | 00010 | MP3367W | 00010 | MP3-A50VU | 00010   |
| MHT7670 | 27075 | MJC309 | 27117 | MN68   | R0050 | MP1589  | 00010 | MP3367X | 00010 | MP3-A50VU | 00010   |
| MHT7671 | 27076 | MJC310 | 27118 | MN69   | R0050 | MP1590  | 00010 | MP3367Y | 00010 | MP3-A50VU | 00010   |
| MHT7672 | 27077 | MJC311 | 27119 | MN70   | R0050 | MP1591  | 00010 | MP3367Z | 00010 | MP3-A50VU | 00010   |
| MHT7673 | 27078 | MJC312 | 27120 | MN71   | R0050 | MP1592  | 00010 | MP3367A | 00010 | MP3-A50VU | 00010   |
| MHT7674 | 27079 | MJC313 | 27121 | MN72   | R0050 | MP1593  | 00010 | MP3367B | 00010 | MP3-A50VU | 00010   |
| MHT7675 | 27080 | MJC314 | 27122 | MN73   | R0050 | MP1594  | 00010 | MP3367C | 00010 | MP3-A50VU | 00010   |
| MHT7676 | 27081 | MJC315 | 27123 | MN74   | R0050 | MP1595  | 00010 | MP3367D | 00010 | MP3-A50VU | 00010   |
| MHT7677 | 27082 | MJC316 | 27124 | MN75   | R0050 | MP1596  | 00010 | MP3367E | 00010 | MP3-A50VU | 00010   |
| MHT7678 | 27083 | MJC317 | 27125 | MN76   | R0050 | MP1597  | 00010 | MP3367F | 00010 | MP3-A50VU | 00010   |
| MHT7679 | 27084 | MJC318 | 27126 | MN77   | R0050 | MP1598  | 00010 | MP3367G | 00010 | MP3-A50VU | 00010   |
| MHT7680 | 27085 | MJC319 | 27127 | MN78   | R0050 | MP1599  | 00010 | MP3367H | 00010 | MP3-A50VU | 00010   |
| MHT7681 | 27086 | MJC320 | 27128 | MN79   | R0050 | MP1600  | 00010 | MP3367I | 00010 | MP3-A50VU | 00010   |
| MHT7682 | 27087 | MJC321 | 27129 | MN80   | R0050 | MP1601  | 00010 | MP3367J | 00010 | MP3-A50VU | 00010   |
| MHT7683 | 27088 | MJC322 | 27130 | MN81   | R0050 | MP1602  | 00010 | MP3367K | 00010 | MP3-A50VU | 00010   |
| MHT7684 | 27089 | MJC323 | 27131 | MN82   | R0050 | MP1603  | 00010 | MP3367L | 00010 | MP3-A50VU | 00010   |
| MHT7685 | 27090 | MJC324 | 27132 | MN83   | R0050 | MP1604  | 00010 | MP3367M | 00010 | MP3-A50VU | 00010   |
| MHT7686 | 27091 | MJC325 | 27133 | MN84   | R0050 | MP1605  | 00010 | MP3367N | 00010 | MP3-A50VU | 00010   |
| MHT7687 | 27092 | MJC326 | 27134 | MN85   | R0050 | MP1606  | 00010 | MP3367O | 00010 | MP3-A50VU | 00010   |
| MHT7688 | 27093 | MJC327 | 27135 | MN86   | R0050 | MP1607  | 00010 | MP3367P | 00010 | MP3-A50VU | 00010   |
| MHT7689 | 27094 | MJC328 | 27136 | MN87   | R0050 | MP1608  | 00010 | MP3367Q | 00010 | MP3-A50VU | 00010   |
| MHT7690 | 27095 | MJC329 | 27137 | MN88   | R0050 | MP1609  | 00010 | MP3367R | 00010 | MP3-A50VU | 00010   |
| MHT7691 | 27096 | MJC330 | 27138 | MN89   | R0050 | MP1610  | 00010 | MP3367S | 00010 | MP3-A50VU | 00010   |
| MHT7692 | 27097 | MJC331 | 27139 | MN90   | R0050 | MP1611  | 00010 | MP3367T | 00010 | MP3-A50VU | 00010   |
| MHT7693 | 27098 | MJC332 | 27140 | MN91   | R0050 | MP1612  | 00010 | MP3367U | 00010 | MP3-A50VU | 00010   |
| MHT7694 | 27099 | MJC333 | 27141 | MN92   | R0050 | MP1613  | 00010 | MP3367V | 00010 | MP3-A50VU | 00010   |
| MHT7695 | 27100 | MJC334 | 27142 | MN93   | R0050 | MP1614  | 00010 | MP3367W | 00010 | MP3-A50VU | 00010   |
| MHT7696 | 27101 | MJC335 | 27143 | MN94   | R0050 | MP1615  | 00010 | MP3367X | 00010 | MP3-A50VU | 00010   |
| MHT7697 | 27102 | MJC336 | 27144 | MN95   | R0050 | MP1616  | 00010 | MP3367Y | 00010 | MP3-A50VU | 00010   |
| MHT7698 | 27103 | MJC337 | 27145 | MN96   | R0050 | MP1617  | 00010 | MP3367Z | 00010 | MP3-A50VU | 00010</ |





| DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE  | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|----------|-------|--------|-------|--------|-------|---------|-------|--------|-------|--------|-------|
| NL2J     | K4092 | N50005 | 50015 | U42272 | 45511 | U430473 | U4000 | U43334 | U0000 | P3K    | 53032 |
| NL2S     | K4093 | N50011 | 50019 | U42273 | 45512 | U430474 | U4001 | U43335 | U0001 | P3K    | 53033 |
| NL3U     | K4094 | N50013 | 50017 | U42274 | 45513 | U430475 | U4002 | U43336 | U0002 | P3K-1  | 53034 |
| NL40     | K4095 | N50014 | 50015 | U42275 | 45514 | U430476 | U4003 | U43337 | U0003 | P3K-2  | 53035 |
| NL50     | K4096 | N50015 | 50016 | U42276 | 45515 | U430477 | U4004 | U43338 | U0004 | P3K-3  | 53036 |
| NL50     | K4097 | N50015 | 50018 | U42277 | 45516 | U430478 | U4005 | U43339 | U0005 | P3K-4  | 53037 |
| NN20     | K4098 | N50013 | 50044 | U42278 | 45517 | U430479 | U4006 | U43340 | U0006 | P3K-5  | 53038 |
| NN7301   | K4099 | N50015 | 50032 | U42279 | 45518 | U430480 | U4007 | U43341 | U0007 | P3K    | 53039 |
| NN7511   | K4100 | N50015 | 50015 | U42280 | 45519 | U430481 | U4008 | U43342 | U0008 | P3K-1  | 53040 |
| N4000    | K4101 | N50015 | 50032 | U42281 | 45520 | U430482 | U4009 | U43343 | U0009 | P3K-2  | 53041 |
| NP504    | K4102 | N50012 | 50045 | U42282 | 45521 | U430483 | U4010 | U43344 | U0010 | P100   | 53042 |
| NP504    | K4103 | N50013 | 50043 | U42283 | 45522 | U430484 | U4011 | U43345 | U0011 | P100   | 53043 |
| NP507    | K4104 | N50013 | 50045 | U42284 | 45523 | U430485 | U4012 | U43346 | U0012 | P100   | 53044 |
| NP507U1  | K4105 | N50013 | 50045 | U42285 | 45524 | U430486 | U4013 | U43347 | U0013 | P100   | 53045 |
| NP507U2  | K4106 | N50013 | 50045 | U42286 | 45525 | U430487 | U4014 | U43348 | U0014 | P100   | 53046 |
| NP507U3  | K4107 | N50013 | 50045 | U42287 | 45526 | U430488 | U4015 | U43349 | U0015 | P100   | 53047 |
| NP507U4  | K4108 | N50013 | 50045 | U42288 | 45527 | U430489 | U4016 | U43350 | U0016 | P100   | 53048 |
| NP507U5  | K4109 | N50013 | 50045 | U42289 | 45528 | U430490 | U4017 | U43351 | U0017 | P100   | 53049 |
| NP507U6  | K4110 | N50013 | 50045 | U42290 | 45529 | U430491 | U4018 | U43352 | U0018 | P100   | 53050 |
| NP507U7  | K4111 | N50013 | 50045 | U42291 | 45530 | U430492 | U4019 | U43353 | U0019 | P100   | 53051 |
| NP507U8  | K4112 | N50013 | 50045 | U42292 | 45531 | U430493 | U4020 | U43354 | U0020 | P100   | 53052 |
| NP507U9  | K4113 | N50013 | 50045 | U42293 | 45532 | U430494 | U4021 | U43355 | U0021 | P100   | 53053 |
| NP507U10 | K4114 | N50013 | 50045 | U42294 | 45533 | U430495 | U4022 | U43356 | U0022 | P100   | 53054 |
| NP507U11 | K4115 | N50013 | 50045 | U42295 | 45534 | U430496 | U4023 | U43357 | U0023 | P100   | 53055 |
| NP507U12 | K4116 | N50013 | 50045 | U42296 | 45535 | U430497 | U4024 | U43358 | U0024 | P100   | 53056 |
| NP507U13 | K4117 | N50013 | 50045 | U42297 | 45536 | U430498 | U4025 | U43359 | U0025 | P100   | 53057 |
| NP507U14 | K4118 | N50013 | 50045 | U42298 | 45537 | U430499 | U4026 | U43360 | U0026 | P100   | 53058 |
| NP507U15 | K4119 | N50013 | 50045 | U42299 | 45538 | U430500 | U4027 | U43361 | U0027 | P100   | 53059 |
| NP507U16 | K4120 | N50013 | 50045 | U42300 | 45539 | U430501 | U4028 | U43362 | U0028 | P100   | 53060 |
| NP507U17 | K4121 | N50013 | 50045 | U42301 | 45540 | U430502 | U4029 | U43363 | U0029 | P100   | 53061 |
| NP507U18 | K4122 | N50013 | 50045 | U42302 | 45541 | U430503 | U4030 | U43364 | U0030 | P100   | 53062 |
| NP507U19 | K4123 | N50013 | 50045 | U42303 | 45542 | U430504 | U4031 | U43365 | U0031 | P100   | 53063 |
| NP507U20 | K4124 | N50013 | 50045 | U42304 | 45543 | U430505 | U4032 | U43366 | U0032 | P100   | 53064 |
| NP507U21 | K4125 | N50013 | 50045 | U42305 | 45544 | U430506 | U4033 | U43367 | U0033 | P100   | 53065 |
| NP507U22 | K4126 | N50013 | 50045 | U42306 | 45545 | U430507 | U4034 | U43368 | U0034 | P100   | 53066 |
| NP507U23 | K4127 | N50013 | 50045 | U42307 | 45546 | U430508 | U4035 | U43369 | U0035 | P100   | 53067 |
| NP507U24 | K4128 | N50013 | 50045 | U42308 | 45547 | U430509 | U4036 | U43370 | U0036 | P100   | 53068 |
| NP507U25 | K4129 | N50013 | 50045 | U42309 | 45548 | U430510 | U4037 | U43371 | U0037 | P100   | 53069 |
| NP507U26 | K4130 | N50013 | 50045 | U42310 | 45549 | U430511 | U4038 | U43372 | U0038 | P100   | 53070 |
| NP507U27 | K4131 | N50013 | 50045 | U42311 | 45550 | U430512 | U4039 | U43373 | U0039 | P100   | 53071 |
| NP507U28 | K4132 | N50013 | 50045 | U42312 | 45551 | U430513 | U4040 | U43374 | U0040 | P100   | 53072 |
| NP507U29 | K4133 | N50013 | 50045 | U42313 | 45552 | U430514 | U4041 | U43375 | U0041 | P100   | 53073 |
| NP507U30 | K4134 | N50013 | 50045 | U42314 | 45553 | U430515 | U4042 | U43376 | U0042 | P100   | 53074 |
| NP507U31 | K4135 | N50013 | 50045 | U42315 | 45554 | U430516 | U4043 | U43377 | U0043 | P100   | 53075 |
| NP507U32 | K4136 | N50013 | 50045 | U42316 | 45555 | U430517 | U4044 | U43378 | U0044 | P100   | 53076 |
| NP507U33 | K4137 | N50013 | 50045 | U42317 | 45556 | U430518 | U4045 | U43379 | U0045 | P100   | 53077 |
| NP507U34 | K4138 | N50013 | 50045 | U42318 | 45557 | U430519 | U4046 | U43380 | U0046 | P100   | 53078 |
| NP507U35 | K4139 | N50013 | 50045 | U42319 | 45558 | U430520 | U4047 | U43381 | U0047 | P100   | 53079 |
| NP507U36 | K4140 | N50013 | 50045 | U42320 | 45559 | U430521 | U4048 | U43382 | U0048 | P100   | 53080 |
| NP507U37 | K4141 | N50013 | 50045 | U42321 | 45560 | U430522 | U4049 | U43383 | U0049 | P100   | 53081 |
| NP507U38 | K4142 | N50013 | 50045 | U42322 | 45561 | U430523 | U4050 | U43384 | U0050 | P100   | 53082 |
| NP507U39 | K4143 | N50013 | 50045 | U42323 | 45562 | U430524 | U4051 | U43385 | U0051 | P100   | 53083 |
| NP507U40 | K4144 | N50013 | 50045 | U42324 | 45563 | U430525 | U4052 | U43386 | U0052 | P100   | 53084 |
| NP507U41 | K4145 | N50013 | 50045 | U42325 | 45564 | U430526 | U4053 | U43387 | U0053 | P100   | 53085 |
| NP507U42 | K4146 | N50013 | 50045 | U42326 | 45565 | U430527 | U4054 | U43388 | U0054 | P100   | 53086 |
| NP507U43 | K4147 | N50013 | 50045 | U42327 | 45566 | U430528 | U4055 | U43389 | U0055 | P100   | 53087 |
| NP507U44 | K4148 | N50013 | 50045 | U42328 | 45567 | U430529 | U4056 | U43390 | U0056 | P100   | 53088 |
| NP507U45 | K4149 | N50013 | 50045 | U42329 | 45568 | U430530 | U4057 | U43391 | U0057 | P100   | 53089 |
| NP507U46 | K4150 | N50013 | 50045 | U42330 | 45569 | U430531 | U4058 | U43392 | U0058 | P100   | 53090 |
| NP507U47 | K4151 | N50013 | 50045 | U42331 | 45570 | U430532 | U4059 | U43393 | U0059 | P100   | 53091 |
| NP507U48 | K4152 | N50013 | 50045 | U42332 | 45571 | U430533 | U4060 | U43394 | U0060 | P100   | 53092 |
| NP507U49 | K4153 | N50013 | 50045 | U42333 | 45572 | U430534 | U4061 | U43395 | U0061 | P100   | 53093 |
| NP507U50 | K4154 | N50013 | 50045 | U42334 | 45573 | U430535 | U4062 | U43396 | U0062 | P100   | 53094 |
| NP507U51 | K4155 | N50013 | 50045 | U42335 | 45574 | U430536 | U4063 | U43397 | U0063 | P100   | 53095 |
| NP507U52 | K4156 | N50013 | 50045 | U42336 | 45575 | U430537 | U4064 | U43398 | U0064 | P100   | 53096 |
| NP507U53 | K4157 | N50013 | 50045 | U42337 | 45576 | U430538 | U4065 | U43399 | U0065 | P100   | 53097 |
| NP507U54 | K4158 | N50013 | 50045 | U42338 | 45577 | U430539 | U4066 | U43400 | U0066 | P100   | 53098 |
| NP507U55 | K4159 | N50013 | 50045 | U42339 | 45578 | U430540 | U4067 | U43401 | U0067 | P100   | 53099 |
| NP507U56 | K4160 | N50013 | 50045 | U42340 | 45579 | U430541 | U4068 | U43402 | U0068 | P100   | 53100 |
| NP507U57 | K4161 | N50013 | 50045 | U42341 | 45580 | U430542 | U4069 | U43403 | U0069 | P100   | 53101 |
| NP507U58 | K4162 | N50013 | 50045 | U42342 | 45581 | U430543 | U4070 | U43404 | U0070 | P100   | 53102 |
| NP507U59 | K4163 | N50013 | 50045 | U42343 | 45582 | U430544 | U4071 | U43405 | U0071 | P100   | 53103 |
| NP507U60 | K4164 | N50013 | 50045 | U42344 | 45583 | U430545 | U4072 | U43406 | U0072 | P100   | 53104 |
| NP507U61 | K4165 | N50013 | 50045 | U42345 | 45584 | U430546 | U4073 | U43407 | U0073 | P100   | 53105 |
| NP507U62 | K4166 | N50013 | 50045 | U42346 | 45585 | U430547 | U4074 | U43408 | U0074 | P100   | 53106 |
| NP507U63 | K4167 | N50013 | 50045 | U42347 | 45586 | U430548 | U4075 | U43409 | U0075 | P100   | 53107 |
| NP507U64 | K4168 | N50013 | 50045 | U42348 | 45587 | U430549 | U4076 | U43410 | U0076 | P100   | 53108 |
| NP507U65 | K4169 | N50013 | 50045 | U42349 | 45588 | U430550 | U4077 | U43411 | U0077 | P100   | 53109 |
| NP507U66 | K4170 | N50013 | 50045 | U42350 | 45589 | U430551 | U4078 | U43412 | U0078 | P100   | 53110 |
| NP507U67 | K4171 | N50013 | 50045 | U42351 | 45590 | U430552 | U4079 | U43413 | U0079 | P100   | 53111 |
| NP507U68 | K4172 | N50013 | 50045 | U42352 | 45591 | U430553 | U4080 | U43414 | U0080 | P100   | 53112 |
| NP507U69 | K4173 | N50013 | 50045 | U42353 | 45592 | U430554 | U4081 | U43415 | U0081 | P100   | 53113 |
| NP507U70 | K4174 | N50013 | 50045 | U42354 | 45593 | U430555 | U4082 | U43416 | U0082 | P100   | 53114 |
| NP507U71 | K4175 | N50013 | 50045 | U42355 | 45594 | U430556 | U4083 | U43417 | U0083 | P100   | 53115 |
| NP507U72 | K4176 | N50013 | 50045 | U42356 | 45595 | U430557 | U4084 | U43418 | U0084 | P100   | 53116 |
| NP507U73 | K4177 | N50013 | 50045 | U42357 | 45596 | U430558 | U4085 | U43419 | U0085 | P100   | 53117 |
| NP507U74 | K4178 | N50013 | 50045 | U42358 | 45597 | U430559 | U4086 | U43420 | U0086 | P100   | 53118 |
| NP507U75 | K4179 | N50013 | 50045 | U42359 | 45598 | U430560 | U4087 | U43421 | U0087 | P100   | 53119 |
| NP507U76 | K4180 | N50013 | 50045 | U42360 | 45599 | U430561 | U4088 | U43422 | U0088 | P100   | 53120 |
| NP507U77 | K4181 | N50013 | 50045 | U42361 | 45600 | U430562 | U4089 | U43423 | U0089 | P100   | 53121 |
| NP507U78 | K4182 | N50013 | 50045 | U42362 | 45601 | U430563 | U4090 | U43424 | U0090 | P100   | 53122 |
| NP507U79 | K4183 | N50013 | 50045 | U42363 | 45602 | U430564 | U4091 | U43425 | U0091 | P100   | 53123 |
| NP507U80 | K4184 | N50013 | 50045 | U42364 | 45603 | U430565 | U4092 | U43426 | U0092 | P100   | 53124 |
| NP507U81 | K4185 | N50013 | 50045 | U42365 | 45604 | U430566 | U4093 | U43427 | U0093 | P100   | 53125 |
| NP507U82 | K4186 | N50013 | 50045 | U42366 | 45605 | U430567 | U4094 | U43428 | U0094 | P100   | 53126 |
| NP507U83 | K4187 | N50013 | 50045 | U42367 | 45606 | U430568 | U4095 | U43429 | U0095 | P100   | 53127 |
| NP5      |       |        |       |        |       |         |       |        |       |        |       |









|      |       |     |      |       |     |
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| 5299 | K0361 | HEP | 5299 | K0361 | HEP |
| 5300 | K0362 | HEP | 5300 | K0362 | HEP |















| DEVICE   | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   | DEVICE | HEP   |
|----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| T-110003 | K0001 | TA0001 | K1300 | TF0001 | 00000 | 11110  | 00010 | TA0002 | 00010 | TA0003 | 00010 |
| T-110004 | K0002 | TA0002 | K1301 | TF0002 | 00010 | 11111  | 00011 | TA0004 | 00011 | TA0005 | 00011 |
| T-110005 | K0003 | TA0003 | K1302 | TF0003 | 00020 | 11112  | 00012 | TA0006 | 00012 | TA0007 | 00012 |
| T-110006 | K0004 | TA0004 | K1303 | TF0004 | 00030 | 11113  | 00013 | TA0008 | 00013 | TA0009 | 00013 |
| T-110007 | K0005 | TA0005 | K1304 | TF0005 | 00040 | 11114  | 00014 | TA0010 | 00014 | TA0011 | 00014 |
| T-110008 | K0006 | TA0006 | K1305 | TF0006 | 00050 | 11115  | 00015 | TA0012 | 00015 | TA0013 | 00015 |
| T-110009 | K0007 | TA0007 | K1306 | TF0007 | 00060 | 11116  | 00016 | TA0014 | 00016 | TA0015 | 00016 |
| T-110010 | K0008 | TA0008 | K1307 | TF0008 | 00070 | 11117  | 00017 | TA0016 | 00017 | TA0017 | 00017 |
| T-110011 | K0009 | TA0009 | K1308 | TF0009 | 00080 | 11118  | 00018 | TA0018 | 00018 | TA0019 | 00018 |
| T-110012 | K0010 | TA0010 | K1309 | TF0010 | 00090 | 11119  | 00019 | TA0020 | 00019 | TA0021 | 00019 |
| T-110013 | K0011 | TA0011 | K1310 | TF0011 | 00100 | 11120  | 00020 | TA0022 | 00020 | TA0023 | 00020 |
| T-110014 | K0012 | TA0012 | K1311 | TF0012 | 00110 | 11121  | 00021 | TA0024 | 00021 | TA0025 | 00021 |
| T-110015 | K0013 | TA0013 | K1312 | TF0013 | 00120 | 11122  | 00022 | TA0026 | 00022 | TA0027 | 00022 |
| T-110016 | K0014 | TA0014 | K1313 | TF0014 | 00130 | 11123  | 00023 | TA0028 | 00023 | TA0029 | 00023 |
| T-110017 | K0015 | TA0015 | K1314 | TF0015 | 00140 | 11124  | 00024 | TA0030 | 00024 | TA0031 | 00024 |
| T-110018 | K0016 | TA0016 | K1315 | TF0016 | 00150 | 11125  | 00025 | TA0032 | 00025 | TA0033 | 00025 |
| T-110019 | K0017 | TA0017 | K1316 | TF0017 | 00160 | 11126  | 00026 | TA0034 | 00026 | TA0035 | 00026 |
| T-110020 | K0018 | TA0018 | K1317 | TF0018 | 00170 | 11127  | 00027 | TA0036 | 00027 | TA0037 | 00027 |
| T-110021 | K0019 | TA0019 | K1318 | TF0019 | 00180 | 11128  | 00028 | TA0038 | 00028 | TA0039 | 00028 |
| T-110022 | K0020 | TA0020 | K1319 | TF0020 | 00190 | 11129  | 00029 | TA0040 | 00029 | TA0041 | 00029 |
| T-110023 | K0021 | TA0021 | K1320 | TF0021 | 00200 | 11130  | 00030 | TA0042 | 00030 | TA0043 | 00030 |
| T-110024 | K0022 | TA0022 | K1321 | TF0022 | 00210 | 11131  | 00031 | TA0044 | 00031 | TA0045 | 00031 |
| T-110025 | K0023 | TA0023 | K1322 | TF0023 | 00220 | 11132  | 00032 | TA0046 | 00032 | TA0047 | 00032 |
| T-110026 | K0024 | TA0024 | K1323 | TF0024 | 00230 | 11133  | 00033 | TA0048 | 00033 | TA0049 | 00033 |
| T-110027 | K0025 | TA0025 | K1324 | TF0025 | 00240 | 11134  | 00034 | TA0050 | 00034 | TA0051 | 00034 |
| T-110028 | K0026 | TA0026 | K1325 | TF0026 | 00250 | 11135  | 00035 | TA0052 | 00035 | TA0053 | 00035 |
| T-110029 | K0027 | TA0027 | K1326 | TF0027 | 00260 | 11136  | 00036 | TA0054 | 00036 | TA0055 | 00036 |
| T-110030 | K0028 | TA0028 | K1327 | TF0028 | 00270 | 11137  | 00037 | TA0056 | 00037 | TA0057 | 00037 |
| T-110031 | K0029 | TA0029 | K1328 | TF0029 | 00280 | 11138  | 00038 | TA0058 | 00038 | TA0059 | 00038 |
| T-110032 | K0030 | TA0030 | K1329 | TF0030 | 00290 | 11139  | 00039 | TA0060 | 00039 | TA0061 | 00039 |
| T-110033 | K0031 | TA0031 | K1330 | TF0031 | 00300 | 11140  | 00040 | TA0062 | 00040 | TA0063 | 00040 |
| T-110034 | K0032 | TA0032 | K1331 | TF0032 | 00310 | 11141  | 00041 | TA0064 | 00041 | TA0065 | 00041 |
| T-110035 | K0033 | TA0033 | K1332 | TF0033 | 00320 | 11142  | 00042 | TA0066 | 00042 | TA0067 | 00042 |
| T-110036 | K0034 | TA0034 | K1333 | TF0034 | 00330 | 11143  | 00043 | TA0068 | 00043 | TA0069 | 00043 |
| T-110037 | K0035 | TA0035 | K1334 | TF0035 | 00340 | 11144  | 00044 | TA0070 | 00044 | TA0071 | 00044 |
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| T-110039 | K0037 | TA0037 | K1336 | TF0037 | 00360 | 11146  | 00046 | TA0074 | 00046 | TA0075 | 00046 |
| T-110040 | K0038 | TA0038 | K1337 | TF0038 | 00370 | 11147  | 00047 | TA0076 | 00047 | TA0077 | 00047 |
| T-110041 | K0039 | TA0039 | K1338 | TF0039 | 00380 | 11148  | 00048 | TA0078 | 00048 | TA0079 | 00048 |
| T-110042 | K0040 | TA0040 | K1339 | TF0040 | 00390 | 11149  | 00049 | TA0080 | 00049 | TA0081 | 00049 |
| T-110043 | K0041 | TA0041 | K1340 | TF0041 | 00400 | 11150  | 00050 | TA0082 | 00050 | TA0083 | 00050 |
| T-110044 | K0042 | TA0042 | K1341 | TF0042 | 00410 | 11151  | 00051 | TA0084 | 00051 | TA0085 | 00051 |
| T-110045 | K0043 | TA0043 | K1342 | TF0043 | 00420 | 11152  | 00052 | TA0086 | 00052 | TA0087 | 00052 |
| T-110046 | K0044 | TA0044 | K1343 | TF0044 | 00430 | 11153  | 00053 | TA0088 | 00053 | TA0089 | 00053 |
| T-110047 | K0045 | TA0045 | K1344 | TF0045 | 00440 | 11154  | 00054 | TA0090 | 00054 | TA0091 | 00054 |
| T-110048 | K0046 | TA0046 | K1345 | TF0046 | 00450 | 11155  | 00055 | TA0092 | 00055 | TA0093 | 00055 |
| T-110049 | K0047 | TA0047 | K1346 | TF0047 | 00460 | 11156  | 00056 | TA0094 | 00056 | TA0095 | 00056 |
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| T-110051 | K0049 | TA0049 | K1348 | TF0049 | 00480 | 11158  | 00058 | TA0098 | 00058 | TA0099 | 00058 |
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| T-110055 | K0053 | TA0053 | K1352 | TF0053 | 00520 | 11162  | 00062 | TA0106 | 00062 | TA0107 | 00062 |
| T-110056 | K0054 | TA0054 | K1353 | TF0054 | 00530 | 11163  | 00063 | TA0108 | 00063 | TA0109 | 00063 |
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| T-110058 | K0056 | TA0056 | K1355 | TF0056 | 00550 | 11165  | 00065 | TA0112 | 00065 | TA0113 | 00065 |
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| T-110064 | K0062 | TA0062 | K1361 | TF0062 | 00610 | 11171  | 00071 | TA0124 | 00071 | TA0125 | 00071 |
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| T-110076 | K0074 | TA0074 | K1373 | TF0074 | 00730 | 11183  | 00083 | TA0148 | 00083 | TA0149 | 00083 |
| T-110077 | K0075 | TA0075 | K1374 | TF0075 | 00740 | 11184  | 00084 | TA0150 | 00084 | TA0151 | 00084 |
| T-110078 | K0076 | TA0076 | K1375 | TF0076 | 00750 | 11185  | 00085 | TA0152 | 00085 | TA0153 | 00085 |
| T-110079 | K0077 | TA0077 | K1376 | TF0077 | 00760 | 11186  | 00086 | TA0154 | 00086 | TA0155 | 00086 |
| T-110080 | K0078 | TA0078 | K1377 | TF0078 | 00770 | 11187  | 00087 | TA0156 | 00087 | TA0157 | 00087 |
| T-110081 | K0079 | TA0079 | K1378 | TF0079 | 00780 | 11188  | 00088 | TA0158 | 00088 | TA0159 | 00088 |
| T-110082 | K0080 | TA0080 | K1379 | TF0080 | 00790 | 11189  | 00089 | TA0160 | 00089 | TA0161 | 00089 |
| T-110083 | K0081 | TA0081 | K1380 | TF0081 | 00800 | 11190  | 00090 | TA0162 | 00090 | TA0163 | 00090 |
| T-110084 | K0082 | TA0082 | K1381 | TF0082 | 00810 | 11191  | 00091 | TA0164 | 00091 | TA0165 | 00091 |
| T-110085 | K0083 | TA0083 | K1382 | TF0083 | 00820 | 11192  | 00092 | TA0166 | 00092 | TA0167 | 00092 |
| T-110086 | K0084 | TA0084 | K1383 | TF0084 | 00830 | 11193  | 00093 | TA0168 | 00093 | TA0169 | 00093 |
| T-110087 | K0085 | TA0085 | K1384 | TF0085 | 00840 | 11194  | 00094 | TA0170 | 00094 | TA0171 | 00094 |
| T-110088 | K0086 | TA0086 | K1385 | TF0086 | 00850 | 11195  | 00095 | TA0172 | 00095 | TA0173 | 00095 |
| T-110089 | K0087 | TA0087 | K1386 | TF0087 | 00860 | 11196  | 00096 | TA0174 | 00096 | TA0175 | 00096 |
| T-110090 | K0088 | TA0088 | K1387 | TF0088 | 00870 | 11197  | 00097 | TA0176 | 00097 | TA0177 | 00097 |
| T-110091 | K0089 | TA0089 | K1388 | TF0089 | 00880 | 11198  | 00098 | TA0178 | 00098 | TA0179 | 00098 |
| T-110092 | K0090 | TA0090 | K1389 | TF0090 | 00890 | 11199  | 00099 | TA0180 | 00099 | TA0181 | 00099 |
| T-110093 | K0091 | TA0091 | K1390 | TF0091 | 00900 | 11200  | 00100 | TA0182 | 00100 | TA0183 | 00100 |
| T-110094 | K0092 | TA0092 | K1391 | TF0092 | 00910 | 11201  | 00101 | TA0184 | 00101 | TA0185 | 00101 |
| T-110095 | K0093 | TA0093 | K1392 | TF0093 | 00920 | 11202  | 00102 | TA0186 | 00102 | TA0187 | 00102 |
| T-110096 | K0094 | TA0094 | K1393 | TF0094 | 00930 | 11203  | 00103 | TA0188 | 00103 | TA0189 | 00103 |
| T-110097 | K0095 | TA0095 | K1394 | TF0095 | 00940 | 11204  | 00104 | TA0190 | 00104 | TA0191 | 00104 |
| T-110098 | K0096 | TA0096 | K1395 | TF0096 | 00950 | 11205  | 00105 | TA0192 | 00105 | TA0193 | 00105 |
| T-110099 | K0097 | TA0097 | K1396 | TF0097 | 00960 | 11206  | 00106 | TA0194 | 00106 | TA0195 | 00106 |
| T-110100 | K0098 | TA0098 | K1397 | TF0098 | 00970 | 11207  | 00107 | TA0196 | 00107 | TA0197 | 001   |

| DEVICE     | HEP   | DEVICE    | HEP   | DEVICE  | HEP   | DEVICE | HEP   | DEVICE    | HEP   | DEVICE         | HEP       |
|------------|-------|-----------|-------|---------|-------|--------|-------|-----------|-------|----------------|-----------|
| TKF06      | K0054 | TNJ01074  | 66011 | TP5074Y | S0019 | TK214  | G0011 | TK0107-1  | 35004 | TK-104 (OLSON) | S5014     |
| TKF08      | K0055 | TNJ01075  | 66010 | TP5075Z | S0015 | TK215  | G0005 | TK01107-4 | 37004 | TK-105 (OLSON) | S0012     |
| TKF10      | K0056 | TNJ01076  | 66015 | TP5076A | S0015 | TK216  | G0011 | TK01100-7 | 37000 | TK-106 (OLSON) | G0003     |
| TL1        | K0057 | TNJ0470-1 | 60011 | TP5076Z | S0019 | TK217  | G0005 | TK01112   | 60000 | TK-107 (OLSON) | S0013     |
| TL2        | K0058 | TNJ0471   | 60025 | TP5076Z | S0019 | TK218  | G0005 | TK0207-1  | 60000 | TK-108 (OLSON) | G0008     |
| TL11       | K0059 | TNJ0479-1 | 60015 | TP5076Z | G0005 | TK25C  | K0054 | TK0207-3  | S0031 | TK-109 (OLSON) | G0005     |
| TL12       | K0060 | TNJ0480   | 60015 | TP5076Z | G0005 | TK209  | G0005 | TK0207-5  | S0031 | TK-110 (OLSON) | G0005     |
| TL21       | K0061 | TNJ0481   | 60019 | TP5076Z | G0005 | TK210  | K0054 | TK0207-6  | S0031 | TK-111 (OLSON) | S0017     |
| TL22       | K0062 | TNJ0482   | 60014 | TP5076Z | G0005 | TK211  | G0005 | TK0207-7  | S0032 | TK-112 (OLSON) | G0003     |
| TL31       | K0063 | TNJ0483   | 60016 | TP5076Z | G0005 | TK212  | G0005 | TK0207-8  | S0032 | TK-113 (OLSON) | TW0 60003 |
| TL32       | K0064 | TNJ0484   | 60015 | TP5076Z | G0005 | TK213  | G0005 | TK0207-9  | S0032 | TK-114 (OLSON) | G0004     |
| TL41       | K0065 | TNJ0485   | 60016 | TP5076Z | G0005 | TK214  | G0005 | TK0207-10 | S0032 | TK-115 (OLSON) | S0011     |
| TL42       | K0066 | TNJ0486   | 60014 | TP5076Z | G0005 | TK215  | G0005 | TK0207-11 | S0032 | TK-116 (OLSON) | S7002     |
| TL51       | K0067 | TNJ0487   | 60010 | TP5076Z | G0005 | TK216  | G0005 | TK0207-12 | S0032 | TK-117 (OLSON) | TW0 S7002 |
| TL61       | K0068 | TNJ0488   | 60010 | TP5076Z | G0005 | TK217  | G0005 | TK0207-13 | S0032 | TK-118 (OLSON) | G0005     |
| TL71       | K0069 | TNJ0489   | 60010 | TP5076Z | G0005 | TK218  | G0005 | TK0207-14 | S0032 | TK-119 (OLSON) | TW0 G0005 |
| TL81       | K0070 | TNJ0490   | 60009 | TP5076Z | G0005 | TK219  | G0005 | TK0207-15 | S0032 | TK-120 (OLSON) | TW0 S0012 |
| TL91       | K0071 | TNJ0491   | 60009 | TP5076Z | G0005 | TK220  | G0005 | TK0207-16 | S0032 | TK-121 (OLSON) | TW0 S5006 |
| TL01       | K0072 | TNJ0492   | 60009 | TP5076Z | G0005 | TK221  | G0005 | TK0207-17 | S0032 | TK-122 (OLSON) | G0000     |
| TL10       | K0073 | TNJ0493   | 60009 | TP5076Z | G0005 | TK222  | G0005 | TK0207-18 | S0032 | TK-123 (OLSON) | G0000     |
| TL20       | K0074 | TNJ0494   | 60009 | TP5076Z | G0005 | TK223  | G0005 | TK0207-19 | S0032 | TK-124 (OLSON) | G0000     |
| TL30       | K0075 | TNJ0495   | 60009 | TP5076Z | G0005 | TK224  | G0005 | TK0207-20 | S0032 | TK-125 (OLSON) | G0000     |
| TL40       | K0076 | TNJ0496   | 60009 | TP5076Z | G0005 | TK225  | G0005 | TK0207-21 | S0032 | TK-126 (OLSON) | G0000     |
| TL50       | K0077 | TNJ0497   | 60009 | TP5076Z | G0005 | TK226  | G0005 | TK0207-22 | S0032 | TK-127 (OLSON) | G0000     |
| TL60       | K0078 | TNJ0498   | 60009 | TP5076Z | G0005 | TK227  | G0005 | TK0207-23 | S0032 | TK-128 (OLSON) | G0000     |
| TL70       | K0079 | TNJ0499   | 60009 | TP5076Z | G0005 | TK228  | G0005 | TK0207-24 | S0032 | TK-129 (OLSON) | G0000     |
| TL80       | K0080 | TNJ0500   | 60009 | TP5076Z | G0005 | TK229  | G0005 | TK0207-25 | S0032 | TK-130 (OLSON) | G0000     |
| TL90       | K0081 | TNJ0501   | 60009 | TP5076Z | G0005 | TK230  | G0005 | TK0207-26 | S0032 | TK-131 (OLSON) | G0000     |
| TL00       | K0082 | TNJ0502   | 60009 | TP5076Z | G0005 | TK231  | G0005 | TK0207-27 | S0032 | TK-132 (OLSON) | G0000     |
| TL100      | K0083 | TNJ0503   | 60009 | TP5076Z | G0005 | TK232  | G0005 | TK0207-28 | S0032 | TK-133 (OLSON) | G0000     |
| TL200      | K0084 | TNJ0504   | 60009 | TP5076Z | G0005 | TK233  | G0005 | TK0207-29 | S0032 | TK-134 (OLSON) | G0000     |
| TL300      | K0085 | TNJ0505   | 60009 | TP5076Z | G0005 | TK234  | G0005 | TK0207-30 | S0032 | TK-135 (OLSON) | G0000     |
| TL400      | K0086 | TNJ0506   | 60009 | TP5076Z | G0005 | TK235  | G0005 | TK0207-31 | S0032 | TK-136 (OLSON) | G0000     |
| TL500      | K0087 | TNJ0507   | 60009 | TP5076Z | G0005 | TK236  | G0005 | TK0207-32 | S0032 | TK-137 (OLSON) | G0000     |
| TL600      | K0088 | TNJ0508   | 60009 | TP5076Z | G0005 | TK237  | G0005 | TK0207-33 | S0032 | TK-138 (OLSON) | G0000     |
| TL700      | K0089 | TNJ0509   | 60009 | TP5076Z | G0005 | TK238  | G0005 | TK0207-34 | S0032 | TK-139 (OLSON) | G0000     |
| TL800      | K0090 | TNJ0510   | 60009 | TP5076Z | G0005 | TK239  | G0005 | TK0207-35 | S0032 | TK-140 (OLSON) | G0000     |
| TL900      | K0091 | TNJ0511   | 60009 | TP5076Z | G0005 | TK240  | G0005 | TK0207-36 | S0032 | TK-141 (OLSON) | G0000     |
| TL000      | K0092 | TNJ0512   | 60009 | TP5076Z | G0005 | TK241  | G0005 | TK0207-37 | S0032 | TK-142 (OLSON) | G0000     |
| TL1000     | K0093 | TNJ0513   | 60009 | TP5076Z | G0005 | TK242  | G0005 | TK0207-38 | S0032 | TK-143 (OLSON) | G0000     |
| TL2000     | K0094 | TNJ0514   | 60009 | TP5076Z | G0005 | TK243  | G0005 | TK0207-39 | S0032 | TK-144 (OLSON) | G0000     |
| TL3000     | K0095 | TNJ0515   | 60009 | TP5076Z | G0005 | TK244  | G0005 | TK0207-40 | S0032 | TK-145 (OLSON) | G0000     |
| TL4000     | K0096 | TNJ0516   | 60009 | TP5076Z | G0005 | TK245  | G0005 | TK0207-41 | S0032 | TK-146 (OLSON) | G0000     |
| TL5000     | K0097 | TNJ0517   | 60009 | TP5076Z | G0005 | TK246  | G0005 | TK0207-42 | S0032 | TK-147 (OLSON) | G0000     |
| TL6000     | K0098 | TNJ0518   | 60009 | TP5076Z | G0005 | TK247  | G0005 | TK0207-43 | S0032 | TK-148 (OLSON) | G0000     |
| TL7000     | K0099 | TNJ0519   | 60009 | TP5076Z | G0005 | TK248  | G0005 | TK0207-44 | S0032 | TK-149 (OLSON) | G0000     |
| TL8000     | K0100 | TNJ0520   | 60009 | TP5076Z | G0005 | TK249  | G0005 | TK0207-45 | S0032 | TK-150 (OLSON) | G0000     |
| TL9000     | K0101 | TNJ0521   | 60009 | TP5076Z | G0005 | TK250  | G0005 | TK0207-46 | S0032 | TK-151 (OLSON) | G0000     |
| TL0000     | K0102 | TNJ0522   | 60009 | TP5076Z | G0005 | TK251  | G0005 | TK0207-47 | S0032 | TK-152 (OLSON) | G0000     |
| TL10000    | K0103 | TNJ0523   | 60009 | TP5076Z | G0005 | TK252  | G0005 | TK0207-48 | S0032 | TK-153 (OLSON) | G0000     |
| TL20000    | K0104 | TNJ0524   | 60009 | TP5076Z | G0005 | TK253  | G0005 | TK0207-49 | S0032 | TK-154 (OLSON) | G0000     |
| TL30000    | K0105 | TNJ0525   | 60009 | TP5076Z | G0005 | TK254  | G0005 | TK0207-50 | S0032 | TK-155 (OLSON) | G0000     |
| TL40000    | K0106 | TNJ0526   | 60009 | TP5076Z | G0005 | TK255  | G0005 | TK0207-51 | S0032 | TK-156 (OLSON) | G0000     |
| TL50000    | K0107 | TNJ0527   | 60009 | TP5076Z | G0005 | TK256  | G0005 | TK0207-52 | S0032 | TK-157 (OLSON) | G0000     |
| TL60000    | K0108 | TNJ0528   | 60009 | TP5076Z | G0005 | TK257  | G0005 | TK0207-53 | S0032 | TK-158 (OLSON) | G0000     |
| TL70000    | K0109 | TNJ0529   | 60009 | TP5076Z | G0005 | TK258  | G0005 | TK0207-54 | S0032 | TK-159 (OLSON) | G0000     |
| TL80000    | K0110 | TNJ0530   | 60009 | TP5076Z | G0005 | TK259  | G0005 | TK0207-55 | S0032 | TK-160 (OLSON) | G0000     |
| TL90000    | K0111 | TNJ0531   | 60009 | TP5076Z | G0005 | TK260  | G0005 | TK0207-56 | S0032 | TK-161 (OLSON) | G0000     |
| TL00000    | K0112 | TNJ0532   | 60009 | TP5076Z | G0005 | TK261  | G0005 | TK0207-57 | S0032 | TK-162 (OLSON) | G0000     |
| TL100000   | K0113 | TNJ0533   | 60009 | TP5076Z | G0005 | TK262  | G0005 | TK0207-58 | S0032 | TK-163 (OLSON) | G0000     |
| TL200000   | K0114 | TNJ0534   | 60009 | TP5076Z | G0005 | TK263  | G0005 | TK0207-59 | S0032 | TK-164 (OLSON) | G0000     |
| TL300000   | K0115 | TNJ0535   | 60009 | TP5076Z | G0005 | TK264  | G0005 | TK0207-60 | S0032 | TK-165 (OLSON) | G0000     |
| TL400000   | K0116 | TNJ0536   | 60009 | TP5076Z | G0005 | TK265  | G0005 | TK0207-61 | S0032 | TK-166 (OLSON) | G0000     |
| TL500000   | K0117 | TNJ0537   | 60009 | TP5076Z | G0005 | TK266  | G0005 | TK0207-62 | S0032 | TK-167 (OLSON) | G0000     |
| TL600000   | K0118 | TNJ0538   | 60009 | TP5076Z | G0005 | TK267  | G0005 | TK0207-63 | S0032 | TK-168 (OLSON) | G0000     |
| TL700000   | K0119 | TNJ0539   | 60009 | TP5076Z | G0005 | TK268  | G0005 | TK0207-64 | S0032 | TK-169 (OLSON) | G0000     |
| TL800000   | K0120 | TNJ0540   | 60009 | TP5076Z | G0005 | TK269  | G0005 | TK0207-65 | S0032 | TK-170 (OLSON) | G0000     |
| TL900000   | K0121 | TNJ0541   | 60009 | TP5076Z | G0005 | TK270  | G0005 | TK0207-66 | S0032 | TK-171 (OLSON) | G0000     |
| TL000000   | K0122 | TNJ0542   | 60009 | TP5076Z | G0005 | TK271  | G0005 | TK0207-67 | S0032 | TK-172 (OLSON) | G0000     |
| TL1000000  | K0123 | TNJ0543   | 60009 | TP5076Z | G0005 | TK272  | G0005 | TK0207-68 | S0032 | TK-173 (OLSON) | G0000     |
| TL2000000  | K0124 | TNJ0544   | 60009 | TP5076Z | G0005 | TK273  | G0005 | TK0207-69 | S0032 | TK-174 (OLSON) | G0000     |
| TL3000000  | K0125 | TNJ0545   | 60009 | TP5076Z | G0005 | TK274  | G0005 | TK0207-70 | S0032 | TK-175 (OLSON) | G0000     |
| TL4000000  | K0126 | TNJ0546   | 60009 | TP5076Z | G0005 | TK275  | G0005 | TK0207-71 | S0032 | TK-176 (OLSON) | G0000     |
| TL5000000  | K0127 | TNJ0547   | 60009 | TP5076Z | G0005 | TK276  | G0005 | TK0207-72 | S0032 | TK-177 (OLSON) | G0000     |
| TL6000000  | K0128 | TNJ0548   | 60009 | TP5076Z | G0005 | TK277  | G0005 | TK0207-73 | S0032 | TK-178 (OLSON) | G0000     |
| TL7000000  | K0129 | TNJ0549   | 60009 | TP5076Z | G0005 | TK278  | G0005 | TK0207-74 | S0032 | TK-179 (OLSON) | G0000     |
| TL8000000  | K0130 | TNJ0550   | 60009 | TP5076Z | G0005 | TK279  | G0005 | TK0207-75 | S0032 | TK-180 (OLSON) | G0000     |
| TL9000000  | K0131 | TNJ0551   | 60009 | TP5076Z | G0005 | TK280  | G0005 | TK0207-76 | S0032 | TK-181 (OLSON) | G0000     |
| TL0000000  | K0132 | TNJ0552   | 60009 | TP5076Z | G0005 | TK281  | G0005 | TK0207-77 | S0032 | TK-182 (OLSON) | G0000     |
| TL10000000 | K0133 | TNJ0553   | 60009 | TP5076Z | G0005 | TK282  | G0005 | TK0207-78 | S0032 | TK-183 (OLSON) | G0000     |
| TL20000000 | K0134 | TNJ0554   | 60009 | TP5076Z | G0005 | TK283  | G0005 | TK0207-79 | S0032 | TK-184 (OLSON) | G0000     |
| TL30000000 | K0135 | TNJ0555   | 60009 | TP5076Z | G0005 | TK284  | G0005 | TK0207-80 | S0032 | TK-185 (OLSON) | G0000     |
| TL40000000 | K0136 | TNJ0556   | 60009 | TP5076Z | G0005 | TK285  | G0005 | TK0207-81 | S0032 | TK-186 (OLSON) | G0000     |
| TL50000000 | K0137 | TNJ0557   | 60009 | TP5076Z | G0005 | TK286  | G0005 | TK0207-82 | S0032 | TK-187 (OLSON) | G0000     |
| TL60000000 | K0138 | TNJ0558   | 60009 | TP5076Z | G0005 | TK287  | G0005 | TK0207-83 | S0032 | TK-188 (OLSON) | G0000     |
| TL70000000 | K0139 | TNJ0559   | 60009 | TP5076Z | G0005 | TK288  | G0005 | TK0207-84 | S0032 | TK-189 (OLSON) | G0000     |
| TL80000000 | K0140 | TNJ0560   | 60009 | TP5076Z | G0005 | TK289  | G0005 | TK0207-85 | S0032 | TK-190 (OLSON) | G0000     |
| TL90000000 |       |           |       |         |       |        |       |           |       |                |           |

| OEVICE        | HEP    | OEVICE  | HEP   | OEVICE    | HEP   | OEVICE | HEP   | OEVICE  | HEP    | OEVICE      | HEP   |
|---------------|--------|---------|-------|-----------|-------|--------|-------|---------|--------|-------------|-------|
| TR-306(JLSON) | C00936 | TR-0039 | S0030 | T0002(OM) | S0024 | T0109  | S0000 | TV-73   | S0000  | VS-2081 26F | 00005 |
| TR-307(JLSON) | Z0010  | TR-0036 | S0015 | T0003(OM) | S0003 | T0111  | G0030 | TV-75   | S0000  | VS-2081 26V | 00005 |
| TR-308(JLSON) | 00000  | TR-0037 | S0022 | T0004(OM) | S0025 | T0110  | 00000 | TV-02   | S0000  | VS-2081 71  | 00005 |
| TR-309(JLSON) | 00010  | TR-0038 | S0005 | T0005(OM) | S0005 | T0112  | S0000 | TV-03   | F0001  | VS-2081 71A | 00005 |
| TR-310(JLSON) | 00010  | TR-0039 | S0015 | T0006(OM) | S0019 | T0113  | S0011 | TV-03   | K0004  | VS-2081 72F | 00005 |
| TR-311(JLSON) | S0010  | TR-0040 | S0015 | T0007(OM) | S0015 | T0114  | G0000 | TVCM-1  | G0009  | VS-2081 80  | S0015 |
| TR-312(JLSON) | S0019  | TR-0042 | S0019 | T0008(OM) | S0019 | T0115  | S0021 | TVCM-2  | 00057P | VS-2081 87A | S0015 |
| TR-313(JLSON) | S0015  | TR-0043 | S0015 | T0009(OM) | S0015 | T0116  | S0000 | TVCM-3  | G00076 | VS-2081 13  | S0015 |
| TR-314(JLSON) | 00015  | TR-0044 | S0015 | T0010(OM) | S0015 | T0117  | S0012 | TVCM-4  | G00029 | VS-2081 58  | S0015 |
| TR-315(JLSON) | F0015  | TR-0045 | G0002 | T0011(OM) | S0005 | T0118  | G0000 | TVCM-5  | 00020P | VS-2081 58  | S0015 |
| TR-316(JLSON) | C0000P | TR-0045 | G0005 | T0012(OM) | G0005 | T02419 | R0004 | TVCM-6  | C0034P | VS-2081 58A | S0030 |
| TR-318(JLSON) | C0000P | TR-0046 | G0005 | T0013(OM) | G0005 | T02420 | 00007 | TVCM-7  | C0034P | VS-2081 62  | S0011 |
| TR-319(JLSON) | C0000P | TR-0047 | G0005 | T0014(OM) | G0005 | T02421 | 00001 | TVCM-8  | C0070P | VS-2081 63  | S0017 |
| TR-320(JLSON) | C0000P | TR-0048 | G0005 | T0015(OM) | G0005 | T02422 | 00003 | TVCM-9  | L0071P | VS-2081 63A | S0017 |
| TR-321(JLSON) | C0000P | TR-0049 | F0001 | T0016(OM) | S0002 | T02423 | S0020 | TVCM-10 | C0050P | VS-2081 65  | S0011 |
| TR-322(JLSON) | C0000P | TR-0050 | F0001 | T0017(OM) | S0005 | T02424 | R0000 | TVCM-11 | C0063P | VS-2081 65  | S0016 |
| TR-323(JLSON) | C0000P | TR-0051 | S0020 | T0018(OM) | S0005 | T02425 | K0000 | TVCM-12 | K0001  | VS-2081 66  | S0016 |
| TR-324(JLSON) | G0002  | TR-0052 | S0015 | T0019(OM) | S0005 | T02426 | K0001 | TVCM-13 | K0001  | VS-2081 66A | S0014 |
| TR-325(JLSON) | G0007  | TR-0053 | S0015 | T0020(OM) | S0007 | T02427 | 00007 | TVCM-14 | K0005  | VS-2081 66B | S0016 |
| TR-326(JLSON) | G0009  | TR-0054 | S0014 | T0021(OM) | S0008 | T02428 | 00009 | TVCM-15 | K0050  | VS-2081 66C | S0014 |
| TR-327(JLSON) | G0011  | TR-0055 | K0001 | T0022(OM) | S0010 | T02429 | 00009 | TVCM-16 | K0051  | VS-2081 66D | S0014 |
| TR-328(JLSON) | G0012  | TR-0056 | G0005 | T0023(OM) | S0020 | T02430 | 00005 | TVCM-17 | K0051  | VS-2081 66E | S0014 |
| TR-329(JLSON) | G0014  | TR-0057 | G0005 | T0024(OM) | S0021 | T02431 | 00017 | TVCM-18 | K0051  | VS-2081 66F | S0016 |
| TR-330(JLSON) | G0015  | TR-0058 | G0005 | T0025(OM) | S0021 | T02432 | 00017 | TVCM-19 | K0051  | VS-2081 66G | S0016 |
| TR-331(JLSON) | G0016  | TR-0059 | G0005 | T0026(OM) | S0021 | T02433 | 00017 | TVCM-20 | K0051  | VS-2081 66H | S0016 |
| TR-332(JLSON) | G0017  | TR-0060 | G0005 | T0027(OM) | S0021 | T02434 | 00017 | TVCM-21 | K0051  | VS-2081 66I | S0016 |
| TR-333(JLSON) | G0018  | TR-0061 | G0005 | T0028(OM) | S0021 | T02435 | 00017 | TVCM-22 | K0051  | VS-2081 66J | S0016 |
| TR-334(JLSON) | G0019  | TR-0062 | G0005 | T0029(OM) | S0021 | T02436 | 00017 | TVCM-23 | K0051  | VS-2081 66K | S0016 |
| TR-335(JLSON) | G0020  | TR-0063 | G0005 | T0030(OM) | S0021 | T02437 | 00017 | TVCM-24 | K0051  | VS-2081 66L | S0016 |
| TR-336(JLSON) | G0021  | TR-0064 | G0005 | T0031(OM) | S0021 | T02438 | 00017 | TVCM-25 | K0051  | VS-2081 66M | S0016 |
| TR-337(JLSON) | G0022  | TR-0065 | G0005 | T0032(OM) | S0021 | T02439 | 00017 | TVCM-26 | K0051  | VS-2081 66N | S0016 |
| TR-338(JLSON) | G0023  | TR-0066 | G0005 | T0033(OM) | S0021 | T02440 | 00017 | TVCM-27 | K0051  | VS-2081 66O | S0016 |
| TR-339(JLSON) | G0024  | TR-0067 | G0005 | T0034(OM) | S0021 | T02441 | 00017 | TVCM-28 | K0051  | VS-2081 66P | S0016 |
| TR-340(JLSON) | G0025  | TR-0068 | G0005 | T0035(OM) | S0021 | T02442 | 00017 | TVCM-29 | K0051  | VS-2081 66Q | S0016 |
| TR-341(JLSON) | G0026  | TR-0069 | G0005 | T0036(OM) | S0021 | T02443 | 00017 | TVCM-30 | K0051  | VS-2081 66R | S0016 |
| TR-342(JLSON) | G0027  | TR-0070 | G0005 | T0037(OM) | S0021 | T02444 | 00017 | TVCM-31 | K0051  | VS-2081 66S | S0016 |
| TR-343(JLSON) | G0028  | TR-0071 | G0005 | T0038(OM) | S0021 | T02445 | 00017 | TVCM-32 | K0051  | VS-2081 66T | S0016 |
| TR-344(JLSON) | G0029  | TR-0072 | G0005 | T0039(OM) | S0021 | T02446 | 00017 | TVCM-33 | K0051  | VS-2081 66U | S0016 |
| TR-345(JLSON) | G0030  | TR-0073 | G0005 | T0040(OM) | S0021 | T02447 | 00017 | TVCM-34 | K0051  | VS-2081 66V | S0016 |
| TR-346(JLSON) | G0031  | TR-0074 | G0005 | T0041(OM) | S0021 | T02448 | 00017 | TVCM-35 | K0051  | VS-2081 66W | S0016 |
| TR-347(JLSON) | G0032  | TR-0075 | G0005 | T0042(OM) | S0021 | T02449 | 00017 | TVCM-36 | K0051  | VS-2081 66X | S0016 |
| TR-348(JLSON) | G0033  | TR-0076 | G0005 | T0043(OM) | S0021 | T02450 | 00017 | TVCM-37 | K0051  | VS-2081 66Y | S0016 |
| TR-349(JLSON) | G0034  | TR-0077 | G0005 | T0044(OM) | S0021 | T02451 | 00017 | TVCM-38 | K0051  | VS-2081 66Z | S0016 |
| TR-350(JLSON) | G0035  | TR-0078 | G0005 | T0045(OM) | S0021 | T02452 | 00017 | TVCM-39 | K0051  | VS-2081 67A | S0016 |
| TR-351(JLSON) | G0036  | TR-0079 | G0005 | T0046(OM) | S0021 | T02453 | 00017 | TVCM-40 | K0051  | VS-2081 67B | S0016 |
| TR-352(JLSON) | G0037  | TR-0080 | G0005 | T0047(OM) | S0021 | T02454 | 00017 | TVCM-41 | K0051  | VS-2081 67C | S0016 |
| TR-353(JLSON) | G0038  | TR-0081 | G0005 | T0048(OM) | S0021 | T02455 | 00017 | TVCM-42 | K0051  | VS-2081 67D | S0016 |
| TR-354(JLSON) | G0039  | TR-0082 | G0005 | T0049(OM) | S0021 | T02456 | 00017 | TVCM-43 | K0051  | VS-2081 67E | S0016 |
| TR-355(JLSON) | G0040  | TR-0083 | G0005 | T0050(OM) | S0021 | T02457 | 00017 | TVCM-44 | K0051  | VS-2081 67F | S0016 |
| TR-356(JLSON) | G0041  | TR-0084 | G0005 | T0051(OM) | S0021 | T02458 | 00017 | TVCM-45 | K0051  | VS-2081 67G | S0016 |
| TR-357(JLSON) | G0042  | TR-0085 | G0005 | T0052(OM) | S0021 | T02459 | 00017 | TVCM-46 | K0051  | VS-2081 67H | S0016 |
| TR-358(JLSON) | G0043  | TR-0086 | G0005 | T0053(OM) | S0021 | T02460 | 00017 | TVCM-47 | K0051  | VS-2081 67I | S0016 |
| TR-359(JLSON) | G0044  | TR-0087 | G0005 | T0054(OM) | S0021 | T02461 | 00017 | TVCM-48 | K0051  | VS-2081 67J | S0016 |
| TR-360(JLSON) | G0045  | TR-0088 | G0005 | T0055(OM) | S0021 | T02462 | 00017 | TVCM-49 | K0051  | VS-2081 67K | S0016 |
| TR-361(JLSON) | G0046  | TR-0089 | G0005 | T0056(OM) | S0021 | T02463 | 00017 | TVCM-50 | K0051  | VS-2081 67L | S0016 |
| TR-362(JLSON) | G0047  | TR-0090 | G0005 | T0057(OM) | S0021 | T02464 | 00017 | TVCM-51 | K0051  | VS-2081 67M | S0016 |
| TR-363(JLSON) | G0048  | TR-0091 | G0005 | T0058(OM) | S0021 | T02465 | 00017 | TVCM-52 | K0051  | VS-2081 67N | S0016 |
| TR-364(JLSON) | G0049  | TR-0092 | G0005 | T0059(OM) | S0021 | T02466 | 00017 | TVCM-53 | K0051  | VS-2081 67O | S0016 |
| TR-365(JLSON) | G0050  | TR-0093 | G0005 | T0060(OM) | S0021 | T02467 | 00017 | TVCM-54 | K0051  | VS-2081 67P | S0016 |
| TR-366(JLSON) | G0051  | TR-0094 | G0005 | T0061(OM) | S0021 | T02468 | 00017 | TVCM-55 | K0051  | VS-2081 67Q | S0016 |
| TR-367(JLSON) | G0052  | TR-0095 | G0005 | T0062(OM) | S0021 | T02469 | 00017 | TVCM-56 | K0051  | VS-2081 67R | S0016 |
| TR-368(JLSON) | G0053  | TR-0096 | G0005 | T0063(OM) | S0021 | T02470 | 00017 | TVCM-57 | K0051  | VS-2081 67S | S0016 |
| TR-369(JLSON) | G0054  | TR-0097 | G0005 | T0064(OM) | S0021 | T02471 | 00017 | TVCM-58 | K0051  | VS-2081 67T | S0016 |
| TR-370(JLSON) | G0055  | TR-0098 | G0005 | T0065(OM) | S0021 | T02472 | 00017 | TVCM-59 | K0051  | VS-2081 67U | S0016 |
| TR-371(JLSON) | G0056  | TR-0099 | G0005 | T0066(OM) | S0021 | T02473 | 00017 | TVCM-60 | K0051  | VS-2081 67V | S0016 |
| TR-372(JLSON) | G0057  | TR-0100 | G0005 | T0067(OM) | S0021 | T02474 | 00017 | TVCM-61 | K0051  | VS-2081 67W | S0016 |
| TR-373(JLSON) | G0058  | TR-0101 | G0005 | T0068(OM) | S0021 | T02475 | 00017 | TVCM-62 | K0051  | VS-2081 67X | S0016 |
| TR-374(JLSON) | G0059  | TR-0102 | G0005 | T0069(OM) | S0021 | T02476 | 00017 | TVCM-63 | K0051  | VS-2081 67Y | S0016 |
| TR-375(JLSON) | G0060  | TR-0103 | G0005 | T0070(OM) | S0021 | T02477 | 00017 | TVCM-64 | K0051  | VS-2081 67Z | S0016 |
| TR-376(JLSON) | G0061  | TR-0104 | G0005 | T0071(OM) | S0021 | T02478 | 00017 | TVCM-65 | K0051  | VS-2081 68A | S0016 |
| TR-377(JLSON) | G0062  | TR-0105 | G0005 | T0072(OM) | S0021 | T02479 | 00017 | TVCM-66 | K0051  | VS-2081 68B | S0016 |
| TR-378(JLSON) | G0063  | TR-0106 | G0005 | T0073(OM) | S0021 | T02480 | 00017 | TVCM-67 | K0051  | VS-2081 68C | S0016 |
| TR-379(JLSON) | G0064  | TR-0107 | G0005 | T0074(OM) | S0021 | T02481 | 00017 | TVCM-68 | K0051  | VS-2081 68D | S0016 |
| TR-380(JLSON) | G0065  | TR-0108 | G0005 | T0075(OM) | S0021 | T02482 | 00017 | TVCM-69 | K0051  | VS-2081 68E | S0016 |
| TR-381(JLSON) | G0066  | TR-0109 | G0005 | T0076(OM) | S0021 | T02483 | 00017 | TVCM-70 | K0051  | VS-2081 68F | S0016 |
| TR-382(JLSON) | G0067  | TR-0110 | G0005 | T0077(OM) | S0021 | T02484 | 00017 | TVCM-71 | K0051  | VS-2081 68G | S0016 |
| TR-383(JLSON) | G0068  | TR-0111 | G0005 | T0078(OM) | S0021 | T02485 | 00017 | TVCM-72 | K0051  | VS-2081 68H | S0016 |
| TR-384(JLSON) | G0069  | TR-0112 | G0005 | T0079(OM) | S0021 | T02486 | 00017 | TVCM-73 | K0051  | VS-2081 68I | S0016 |
| TR-385(JLSON) | G0070  | TR-0113 | G0005 | T0080(OM) | S0021 | T02487 | 00017 | TVCM-74 | K0051  | VS-2081 68J | S0016 |
| TR-386(JLSON) | G0071  | TR-0114 | G0005 | T0081(OM) | S0021 | T02488 | 00017 | TVCM-75 | K0051  | VS-2081 68K | S0016 |
| TR-387(JLSON) | G0072  | TR-0115 | G0005 | T0082(OM) | S0021 | T02489 | 00017 | TVCM-76 | K0051  | VS-2081 68L | S0016 |
| TR-388(JLSON) | G0073  | TR-0116 | G0005 | T0083(OM) | S0021 | T02490 | 00017 | TVCM-77 | K0051  | VS-2081 68M | S0016 |
| TR-389(JLSON) | G0074  | TR-0117 | G0005 | T0084(OM) | S0021 | T02491 | 00017 | TVCM-78 | K0051  | VS-2081 68N | S0016 |
| TR-390(JLSON) | G0075  | TR-0118 | G0005 | T0085(OM) | S0021 | T02492 | 00017 | TVCM-79 | K0051  | VS-2081 68O | S0016 |
| TR-391(JLSON) | G0076  | TR-0119 | G0005 | T0086(OM) | S0021 | T02493 | 00017 | TVCM-80 | K0051  | VS-2081 68P | S0016 |
| TR-392(JLSON) |        |         |       |           |       |        |       |         |        |             |       |











| DEVICE       | HEP   | DEVICE  | HEP    | DEVICE        | HEP    | DEVICE | HEP | DEVICE | HEP | DEVICE | HEP |
|--------------|-------|---------|--------|---------------|--------|--------|-----|--------|-----|--------|-----|
| ZT81         | S0011 | ZT281   | S0013  | ZT2651        | S3011  |        |     |        |     |        |     |
| ZT82         | Z043b | ZT282   | S0013  | ZT2700        | S3016  |        |     |        |     |        |     |
| ZT82 (TRANS) | S0025 | ZT283   | S6013  | ZT2758        | S0010  |        |     |        |     |        |     |
| ZT82A        | Z043a | ZT284   | S0013  | ZT3000        | S0616  |        |     |        |     |        |     |
| ZT82d        | Z043b | ZT287   | S0013  | ZTK-33        | Z0426  |        |     |        |     |        |     |
| ZT83         | S0011 | ZT402   | S0014  | ZTK300        | S0014  |        |     |        |     |        |     |
| ZT84         | S0011 | ZT403   | S6011  | ZTK302        | S0015  |        |     |        |     |        |     |
| ZT87         | S0011 | ZT404   | S0011  | ZTK300        | F1036  |        |     |        |     |        |     |
| ZT110        | Z0439 | ZT096   | S0014  | ZTK300        | S0020  |        |     |        |     |        |     |
| ZT110A       | Z0439 | ZT097   | S0014  | ZTK300        | S3012  |        |     |        |     |        |     |
| ZT110d       | Z0439 | ZT700   | S6611  | ZTK501        | S3019  |        |     |        |     |        |     |
| ZT111        | S0011 | ZT700A  | S0011  | ZTK502        | S3019  |        |     |        |     |        |     |
| ZT112        | S0011 | ZT700   | S0011  | ZTK503        | S0019  |        |     |        |     |        |     |
| ZT113        | S0011 | ZT700   | S0010  | ZTK504        | S3019  |        |     |        |     |        |     |
| ZT114        | S0011 | ZT917   | S0010  | ZTK510        | S0613  |        |     |        |     |        |     |
| ZT117        | S0611 | ZT918   | S0010  | ZTK500        | S0619  |        |     |        |     |        |     |
| ZT131        | S0613 | ZT930   | S0024  | ZTK501        | S3019  |        |     |        |     |        |     |
| ZT152        | S0013 | ZT1420  | S0015  | Z012          | Z0415  |        |     |        |     |        |     |
| ZT153        | S0013 | ZT1481  | S5014  | Z012A         | Z0415  |        |     |        |     |        |     |
| ZT154        | S0013 | ZT1487  | S7002  | Z0120         | Z0415  |        |     |        |     |        |     |
| ZU180        | S0014 | ZT1489  | S7002  | Z015          | Z0418  |        |     |        |     |        |     |
| ZU15A        | Z0418 | ZV02    | Z0430  | Z002          | Z0214  |        |     |        |     |        |     |
| ZU15b        | Z0418 | ZV02A   | Z70430 | Z006          | Z0215  |        |     |        |     |        |     |
| ZU27         | Z0424 | ZV020   | Z0430  | Z202          | Z0217  |        |     |        |     |        |     |
| ZU27A        | Z0424 | ZV110   | Z0439  | Z291          | Z0219  |        |     |        |     |        |     |
| ZU27B        | Z0424 | ZV110A  | Z0439  | Z200          | Z0220  |        |     |        |     |        |     |
| ZU33         | Z0420 | ZV110d  | Z0439  | Z212          | Z0415  |        |     |        |     |        |     |
| ZU33A        | Z0420 | ZW0-3.1 | Z0412  | Z215          | Z0220  |        |     |        |     |        |     |
| ZU33B        | Z0420 | ZW9-1   | Z0412  | Z210          | Z0220  |        |     |        |     |        |     |
| ZU62         | Z0433 | ZY12    | Z0415  | Z222          | Z0231  |        |     |        |     |        |     |
| ZU62A        | Z0433 | ZY12A   | Z0415  | Z227          | Z0234  |        |     |        |     |        |     |
| ZU62B        | Z0433 | ZY12B   | Z0415  | Z233          | Z0420  |        |     |        |     |        |     |
| ZU62         | Z0430 | ZY15    | Z0418  | Z202          | Z0433  |        |     |        |     |        |     |
| ZU62A        | Z0430 | ZY15A   | Z0418  | Z202          | Z0436  |        |     |        |     |        |     |
| ZU62B        | Z0430 | ZY15B   | Z0418  | Z2110         | Z0439  |        |     |        |     |        |     |
| ZU110        | Z0439 | ZY27    | Z0424  | UA703         | C6661  |        |     |        |     |        |     |
| ZU110A       | Z0439 | ZY27A   | Z0424  | UA703L        | C6601  |        |     |        |     |        |     |
| ZU110B       | Z0439 | ZY27B   | Z0424  | UA703E        | C6601  |        |     |        |     |        |     |
| ZV9-1        | Z0412 | ZY33    | Z0420  | UA729         | C6095P |        |     |        |     |        |     |
| ZV9-1A       | Z0412 | ZY33A   | Z0420  | UA732         | C6094P |        |     |        |     |        |     |
| ZV9-1d       | Z0412 | ZY33d   | Z0420  | UA737E        | C6057P |        |     |        |     |        |     |
| ZV12         | Z0415 | ZY02    | Z0433  | UA739C        | C6055L |        |     |        |     |        |     |
| ZV12A        | Z0415 | ZY02A   | Z0433  | UA741 (0-PIN) | C6052P |        |     |        |     |        |     |
| ZV12B        | Z0415 | ZY02B   | Z0433  | UA741 (8-PIN) | C6052P |        |     |        |     |        |     |
| ZV15         | Z0410 | ZY02    | Z0430  | UA740         | C6057P |        |     |        |     |        |     |
| ZV15A        | Z0410 | ZY02A   | Z0430  | UA707         | C6056P |        |     |        |     |        |     |
| ZV15B        | Z0410 | ZY02B   | Z0430  | UA700         | C6070P |        |     |        |     |        |     |
| ZV27         | Z0424 | ZY110   | Z0439  | UA781         | C6071P |        |     |        |     |        |     |
| ZV27A        | Z0424 | ZY110A  | Z0439  | UA790         | C6058G |        |     |        |     |        |     |
| ZV27B        | Z0424 | ZY110B  | Z0439  | UL910         | C21000 |        |     |        |     |        |     |
| ZV33         | Z0420 | Z23.3   | Z0206  | UL914         | C20100 |        |     |        |     |        |     |
| ZV33A        | Z0420 | Z23.0   | Z0402  | UPC100        | C6066P |        |     |        |     |        |     |
| ZV33B        | Z0420 | Z23.9   | Z0208  | UPC100L       | C6060P |        |     |        |     |        |     |
| ZV62         | Z0433 | Z24.7   | Z0210  | JPC055A       | C6061  |        |     |        |     |        |     |
| ZV62A        | Z0433 | Z25.1   | Z0211  | UPC-100       | C6060P |        |     |        |     |        |     |
| ZV62B        | Z0433 | Z25.0   | Z0212  | UPC-555A      | C6061  |        |     |        |     |        |     |





# BOOKS AND ACCESSORIES

- HEP B0400**  
*Solid State Projects From Motorola* – contains 9 useful and interesting projects plus basic semiconductor information and builders hints.
- HEP B0408**  
*Field Effect Transistor Projects* – contains 6 informative and useful FET projects in step-by-step form plus an introduction to FET's, glossary of terms, and construction techniques.
- HEP B0409**  
*Build Your Own Home & Car Security* – contains 11 useful and protective alarm system circuits for the intermediate and advanced hobbyist/ experimenter plus introduction to types of alarm systems and builders hints.
- HEP B0410**  
*Silicon Rectifier Handbook* – design data, formulas, curves, and applications.
- HEP B0411**  
*Semiconductor Data Library* – contains four informative volumes providing complete data sheet specifications for a wide range of discrete semiconductors, short-form specifications for IC's, plus selector guides with recommended devices for specific applications.
- HEP B0413**  
*Zener Diode Handbook* – a comprehensive text, complete with basic theory, formulas, curves, and applications.
- HEP B0415**  
*MECL Integrated Circuits Data Book* – provides detailed specifications, family and system characteristics of entire emitter coupled logic family of circuits, plus data on all currently available devices and comparative data about all Motorola ECL lines.
- HEP B0416**  
*Linear Integrated Circuits Data Book* – contains data sheet specifications for 140-plus types, a master device index, interchangeability guide, applications guide, packaging information, all with quick access, edge-referenced sections.
- HEP B0417**  
*Phase-Locked Loop Systems Data Book* – contains data sheet devices specifications plus many circuits and application notes.
- HEP B0418**  
*IC GLOSSARY* – pocket size compilation of 653 IC and related terms.
- HEP A0450**  
*TO-3 Transistor Mounting Kit* – especially designed to facilitate the proper and most efficient installation of all devices using the TO-3 package.
- HEP A0451**  
*10 Pin IC Sockets (Pkg. of 2)* – ideal for the hobbyist-experimenter, allows an IC to be used in many different circuits.
- HEP A0452**  
*TO-66 Transistor Mounting Kit* – especially designed to facilitate the proper and most efficient installation of all devices using the TO-66 package.
- HEP A0453**  
*14 Pin Dual Inline IC Socket* – ideal for the hobbyist-experimenter, allows an IC to be used in many different circuits.
- HEP A0454**  
*8 Pin IC Sockets (Pkg. of 2)* – ideal for the hobbyist-experimenter, allows an IC to be used in many different circuits.
- HEP A0455**  
*TO-36 Transistor Mounting Kit* – especially designed to facilitate the proper and most efficient installation of all devices using the TO-36 package.
- HEP A0456**  
*Stud Device Mounting Kit (7/16" stud, 10-32 thread)* – contains all necessary mounting and insulating hardware.
- HEP A0457**  
*Stud Device Mounting Kit (11/16" stud, 1/4-28 thread)* – contains all necessary mounting and insulating hardware.
- HEP A0458**  
*16 Pin Dual Inline IC Socket* – ideal for the hobbyist-experimenter, allows an IC to be used in many different circuits.
- HEP A0500**  
*TO-3 Heat Sink* – predrilled to accept any TO-3 or similar device.
- HEP A0501**  
*TO-36 Heat Sink* – predrilled to accept any TO-36 or similar device.
- HEP A0502**  
*TO-5 Heat Sink* – greatly increases power dissipating capabilities and circuit reliability. May be mounted permanently to a chassis or allowed to suspend in free air.
- HEP A0503**  
*TO-5 Heat Sink and Mounting Adaptor* – used to mount TO-5, TO-39, TO-99, TO-100, Case 71, Case 602A, etc. to circuit boards and chassis.

## APPLICATION AIDS

- B0007** — *HEP Semiconductor Cross-Reference Guide* list replacement for thousands of various device types.
- B0032** — *Tips on Using IC's*. 8 page brochure containing basic IC information, 8 project schematics, and IC cross-references.
- B0033** — *Tips On Using FET's*. 8 page brochure containing basic FET information, 9 project schematics, and FET cross-references.
- B0036** — *Radio Amateurs IC Projects*. 8 page brochure for the ham, with 10 project schematics.
- B0037** — *Home Handyman's Construction Projects*. 8 page brochure with theory and 11 project schematics.
- B0038** — *Tips On Using LED's*. 8 page brochure containing basic LED information plus 6 interesting and informative LED projects.



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