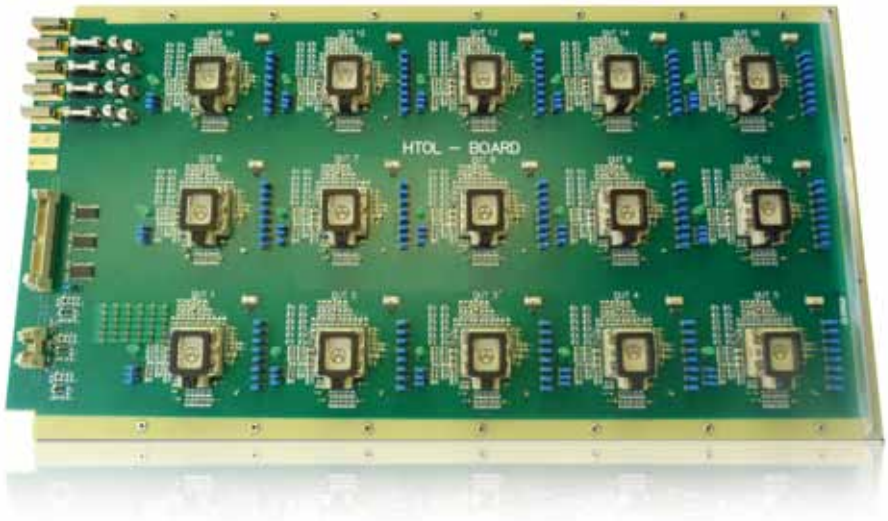
YAMAICHI ELECTRONICS

ENGINEERED TO CONNECT



FULL PRODUCT LINE

TEST SOLUTIONS

The technical data and specifications of the products shown in this catalogue are for reference only, and apply to products available at the time of catalogue printing in Nov. 2012. Product modification often involves changes to technical data and size, and it is therefore recommended that the buyer request the latest technical data and specifications before placing a purchasing contract.

Technische Daten und Massangaben der im Katalog aufgeführten Produkte beziehen sich auf Referenzprodukte aus dem Produktsortiment bei Erscheinen des Katalogs im Nov. 2012 Produktänderungen, insbesondere aufgrund technischer Weiterentwicklung, bedingen regelmäßig veränderte technische Daten und Maße. Dem Besteller wird daher dringend empfohlen, vor Vertragsabschluss technische Daten und Massangaben gesondert nachzufragen.

COMPANY PROFILE

WORLDWIDE

Yamaichi Electronics, as a supplier of high performance interconnection devices was established 1956 in Tokyo. Yamaichi rapidly achieved world class status as a manufacturer of high quality and reliable components, for use in the most demanding applications of electronic systems, including those with high temperature environments, protected interconnections for harsh environments, high speed interconnections for the Telecom/Datacom infrastructure or robust and long-living solar panel cabling systems.

Yamaichi uses state-of-the-art automated production and assembly equipment to produce high precision fine pitch sockets, connectors, cable assemblies and flexible printed circuits with consistent quality and reliability.

With nearly 5,000 employees and more than 70,000 m^2 of manufacturing space in Japan, the Philippines, South Korea, China and Germany, Yamaichi can provide its customers with conventional and custom products in the most favorable combination of price, quality and delivery.


CERTIFICATE

DQS GmbH

ISO 9001 : 2008

EUROPE

Yamaichi Electronics Deutschland GmbH is located in Munich and is your European partner for sockets, connectors, cables / assemblies, PCB designs as well as fine pitch flexible printed circuits. Our network includes a knowledgeable and experienced sales staff in Germany, Italy, the UK and France. Also we are supported by a European network of exclusive distributors. (Contact addresses at the end of this catalogue).

In order to facilitate the local market demands, Yamaichi has two Design Centers in Munich and Sousse (Tunisia). Our expertise covers the factory automation, wireless communication, telecom/datacom, semiconductor, photovoltaic, medical, automotive and other technologies. Moreover we offer PCB design services as well as cable assemblies from our production facility in Northern Germany.

Quality Assurance
Yamaichi places great importance on Quality. As the European subsidiary, it is our target to meet the high quality requirements set by the Yamaichi Group. For this reason, we started many years ago with a continuous improvement program. Yamaichi is approved according to the current DIN EN ISO 9001:2008.

YAMAICHI ELECTRONICS
ENGINEERED TO CONNECT

YAMAICHI ELECTRONICS TABLE OF CONTENTS

CONTACTING - SEMICONDUCTOR

PAGE NUMBERS BY SERIES

*SOP and QFP variations e.g. TSSOP, BQFP ...

YAMAICHI ELECTRONICS TABLE OF CONTENTS

YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

PIN THROUGH HOLE DEVICES

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.

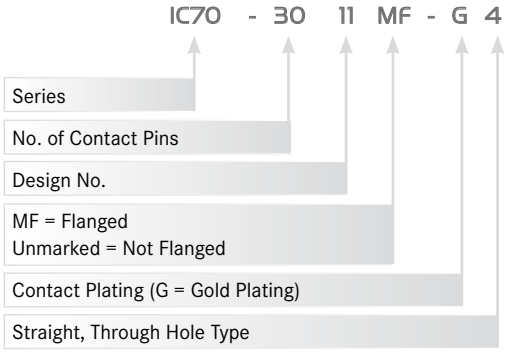
MATERIALS AND FINISH

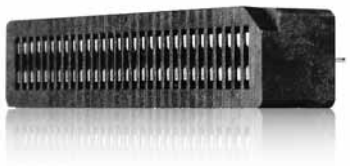
Housing:	Polysulphone (PSF), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

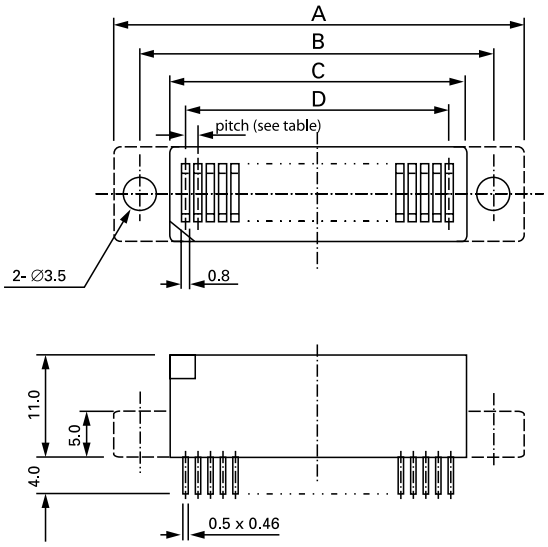
- 1.27 to 1.78mm pitch
- Dual wipe contacts ensure high reliability
- Low costs due to selective gold plating

PART NUMBER

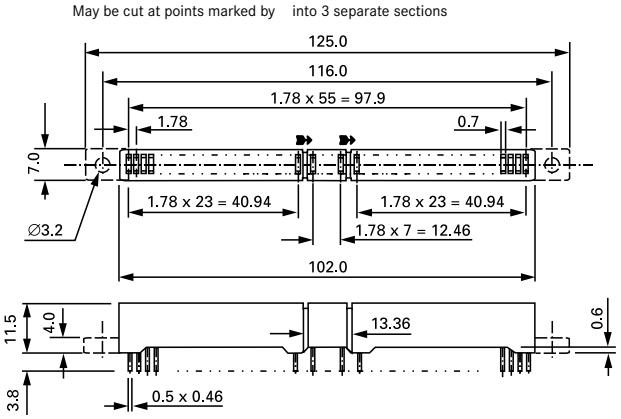




OUTLINE SOCKET DIMENSIONS

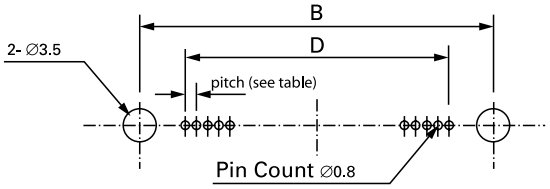


OUTLINE SOCKET DIMENSIONS FOR IC70-5616-G4 ONLY



Recommended PCB Layout

Top View from Socket



1.27 TO 1.78MM PITCH

Part Number	Pin Count	Pitch	A	B	C	D
IC70-0726**-G4	7	1.27	26.6	19.6	12.6	1.27 x 6 = 7.62
IC70-1217**-G4	12	2.00	41.0	34.0	27.0	2.00 x 11 = 22.00
IC70-1521**-G4	15	1.27	36.8	29.8	22.8	1.27 x 14 = 17.78
IC70-2020**-G4	20	1.50	47.5	40.5	33.5	1.50 x 19 = 28.50
IC70-2313**-G4	23	1.27	44.0	38.0	32.0	1.27 x 22 = 27.94
IC70-2418**-G4	24	2.00	63.0	57.0	51.0	2.00 x 23 = 46.00
IC70-3011**-G4	30	1.80	77.0	67.0	57.0	1.80 x 29 = 52.20
IC70-3015**-G4	30	1.27	57.0	49.0	41.0	1.27 x 29 = 36.83
IC70-3019**-G4	30	1.50	62.5	55.5	48.5	1.50 x 29 = 43.50
IC70-4014**-G4	40	1.778	94.0	84.0	74.0	1.778 x 55 = 69.342
IC70-5616**-G4	56	1.78	125.0	116.0	102.0	1.78 x 55 = 97.90

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.

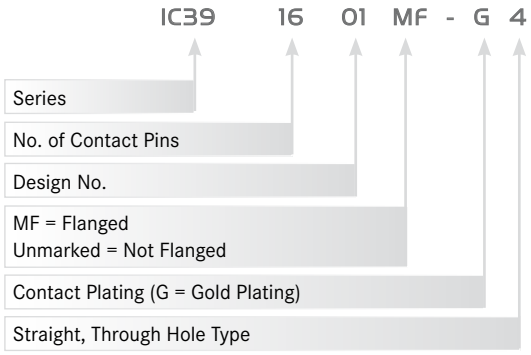
MATERIALS AND FINISH

Housing:	Polysulphone (PSF), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

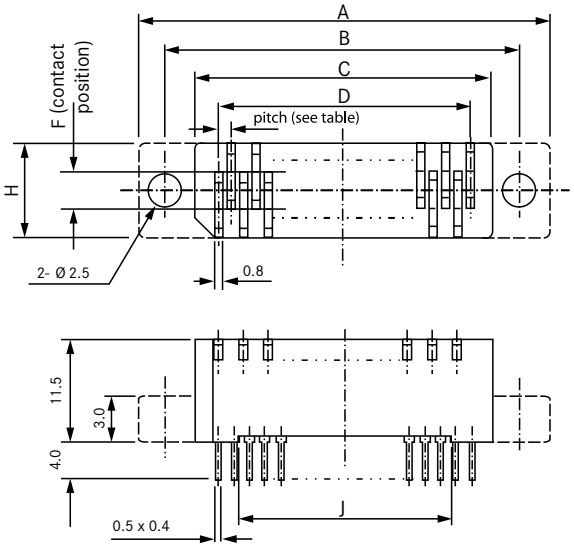
FEATURES

- 1.27 to 1.778mm pitch
- Applicable for Zig-Zag mounted leads
- Dual wipe contacts ensure high reliability

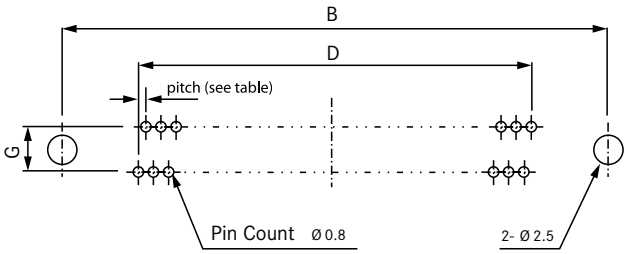
PART NUMBER



OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



Top View from Socket

1.27 TO 1.778MM PITCH

Part Number	Pin Count	Pitch	A	B	C	D	F	G	H	J
IC39-1206**-G4	12	1.778	39.0	33.0	27.0	1.778 x 11 = 19.558	2.00	2.00	9.0	–
IC39-1408**-G4	14	1.70	38.0	32.0	26.0	1.70 x 13 = 22.1	5.08	5.08	11.0	–
IC39-1505**-G4	15	1.27	34.0	28.0	22.0	1.27 x 14 = 17.78	5.08	5.08	11.0	–
IC39-1602**-G4	16	1.27	38.0	32.0	26.0	1.27 x 15 = 19.05	3.00	3.00	9.0	–
IC39-2017S**-G4	20	1.27	40.0	34.0	28.0	1.27 x 19 = 24.13	2.54	2.54	9.0	24.0
IC39-2304**-G4	23	1.27	44.0	38.0	32.0	1.27 x 22 = 27.94	2.20	2.20	9.0	–
IC39-2419**-G4	24	1.27	45.0	39.0	33.0	1.27 x 23 = 29.21	2.54	2.54	9.0	29.1
IC39-2803**-G4	28	1.27	50.0	44.0	38.0	1.27 x 27 = 34.29	2.55	2.55	9.0	–

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	20mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +170°C (PPS)
Mating Cycles:	25,000 to 50,000 insertions

MATERIALS AND FINISH

Housing:	Polyphenylenesulfide (PPS), glass filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

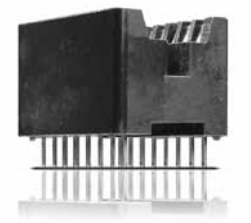
FEATURES

- 2.54mm pitch
- Dual wipe contacts ensure high reliability
- Low costs due to selective gold plating
- Applicable for IC packages and side braze packages
- Ideal for automated burn-in

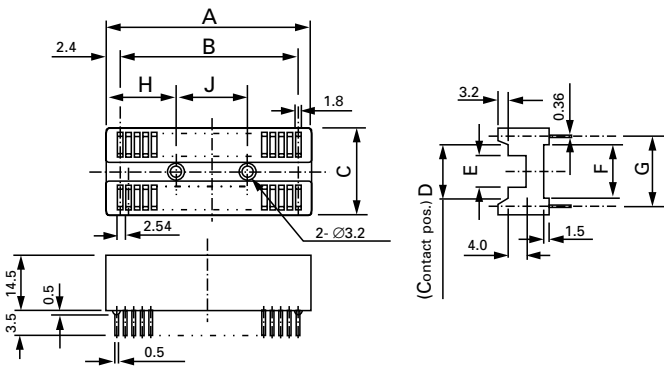
PART NUMBER

IC37N R B - 14 03 - G 4

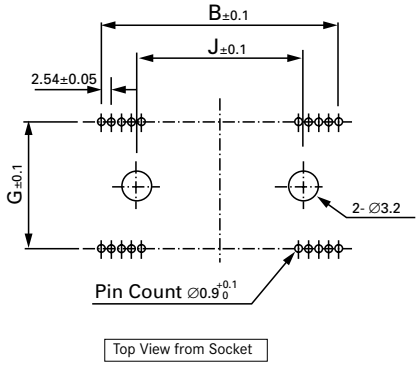
- Series No.
- Housing Material: R = PPS
- Contact Plating:
  B = Mating Terminals 0.3µm AU
  Solder Terminals 0.1µm AU
- No. of Contacts
- Row Space (0.3 = 0.3 inches)
- Gold Plating
- Straight Through Hole Type



OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



2.54MM PITCH

Part Number	Pin Count	A	B	C	D	E	F	G	H	J
IC37NRB-0083-G4	8	12.42	2.54 x 3 = 7.62	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-1403-G4	14	20.04	2.54 x 6 = 15.24	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-1603-G4	16	22.58	2.54 x 7 = 17.78	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-1803-G4	18	25.12	2.54 x 8 = 20.32	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-2003-G4	20	27.66	2.54 x 9 = 22.86	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-2004-G4	20	27.66	2.54 x 9 = 22.86	19.5	10.3	2.9	8.0	13.9	–	–
IC37NRB-2203-G4	22	30.20	2.54 x 10 = 25.40	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-2204-G4	22	30.20	2.54 x 10 = 25.40	19.5	10.3	2.9	8.0	13.9	–	–
IC37NRB-2403-G4	24	32.74	2.54 x 11 = 27.94	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-2404-G4	24	32.74	2.54 x 11 = 27.94	19.5	10.3	2.9	8.0	13.9	–	–
IC37NRB-2406-G4	24	32.74	2.54 x 11 = 27.94	24.6	15.4	8.0	10.3	19.0	6.21	20.32
IC37NRB-2803-G4	28	37.82	2.54 x 13 = 33.02	17.0	7.8	2.0	7.5	11.4	-	-
IC37NRB-2804-G4	28	37.82	2.54 x 13 = 33.02	19.5	10.3	2.9	8.0	13.9	–	–
IC37NRB-2806-G4	28	37.82	2.54 x 13 = 33.02	24.6	15.4	8.0	10.3	19.0	6.21	25.40
IC37NRB-3203-G4	32	42.90	2.54 x 15 = 38.10	17.0	7.8	2.0	7.5	11.4	–	–
IC37NRB-3204-G4	32	42.90	2.54 x 15 = 38.10	24.6	10.3	8.0	10.3	19.0	–	–
IC37NRB-3206-G4	32	42.90	2.54 x 15 = 38.10	24.6	15.4	2.9	8.0	13.9	8.75	25.40
IC37NRB-4006-G4	40	53.06	2.54 x 19 = 48.26	19.5	15.4	8.0	10.3	19.0	15.10	25.40
IC37NRB-4206-G4	42	55.60	2.54 x 20 = 50.80	24.6	15.4	8.0	10.3	19.0	13.83	25.40
IC37NRB-4806-G4	48	63.22	2.54 x 23 = 58.42	24.6	15.4	8.0	10.3	19.0	16.37	30.48

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	20mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +170°C (PES)
Mating Cycles:	25,000 to 50,000 insertions

MATERIALS AND FINISH

Housing:	Polysulphone (PSF), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

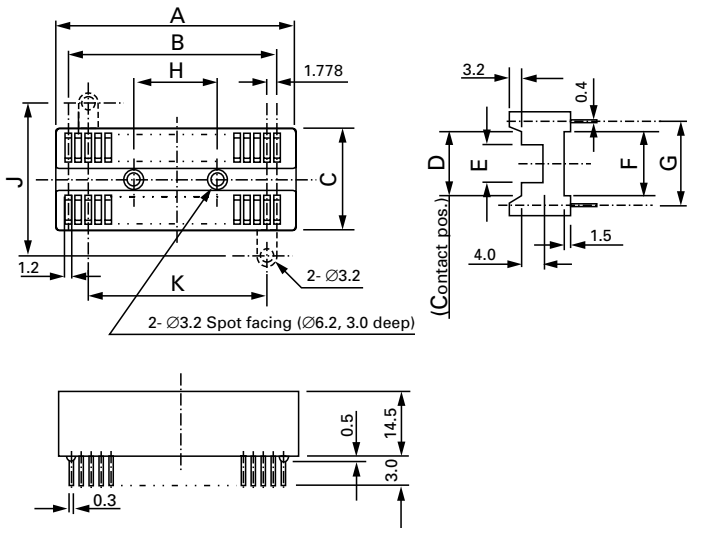
- Shrink pitch (1.778mm) sockets for high-density mounting
- Dual wipe contacts ensure high reliability

PART NUMBER

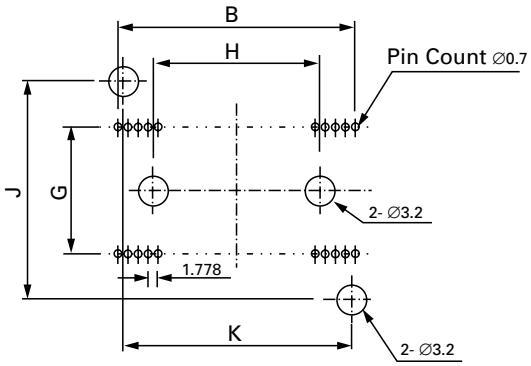
IC76 20 - 40 06 - G 4 MF

- Series No.
- Housing Material: 20 = PES
- No. of Contacts
- Row Space (0.6 = 0.6 inches)
- Contact Plating (G = Gold Plating)
- Straight Through Hole Type
- MF = Flanged
  Unmarked = Not Flanged

OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



Top View from Socket

1.778MM PITCH

Part Number	Pin Count	A	B	C	D	E	F	G	H	J	K
IC7620-2003-G4 **	20	20.0	1.778 x 9 = 16.002	17.0	8.3	2.0	7.5	11.4	–	23.0	11.0
IC7620-2203-G4 **	22	22.0	1.778 x 10 = 17.78	17.0	8.3	2.0	7.5	11.4	–	23.0	11.0
IC7620-2403-G4 **	24	24.0	1.778 x 11 = 19.558	17.0	8.3	2.0	7.5	11.4	–	23.0	13.0
IC7620-2804-G4 **	28	27.5	1.778 x 13 = 23.114	19.5	10.8	2.9	8.0	13.9	–	25.5	16.5
IC7620-3004-G4 MF	30	29.0	1.778 x 14 = 24.892	19.5	10.8	2.9	8.0	13.9	–	25.5	16.5
IC7620-4006-G4 **	40	38.0	1.778 x 19 = 33.782	24.6	15.9	8.0	10.3	19.0	25.5	30.6	25.5
IC7620-4206-G4 **	42	39.5	1.778 x 20 = 35.56	24.6	15.9	8.0	10.3	19.0	25.5	30.6	25.5
IC7620-4806-G4 **	48	45.0	1.778 x 23 = 40.894	24.6	15.9	8.0	10.3	19.0	26.0	30.6	26.0
IC7620-5206-G4 **	52	48.5	1.778 x 25 = 44.45	24.6	15.9	8.0	10.3	19.0	28.0	30.6	28.0
IC7620-64075-G4**	64	59.5	1.778 x 31 = 55.118	28.4	19.7	11.8	13.7	22.8	29.5	38.2	29.5

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	20mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	25,000 to 50,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Copper Alloy
Plating:	Gold over Nickel

FEATURES

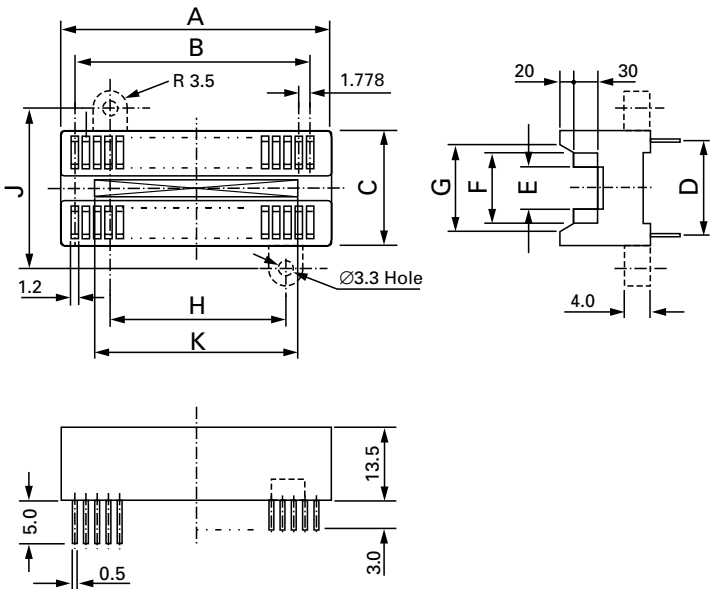
- Shrink pitch (1.778mm) sockets for high-density mounting
- Dual wipe contacts ensure high reliability
- Two terminal lengths (3mm / 5mm) available.
  The 5mm type can be used as a piggy-back socket

PART NUMBER

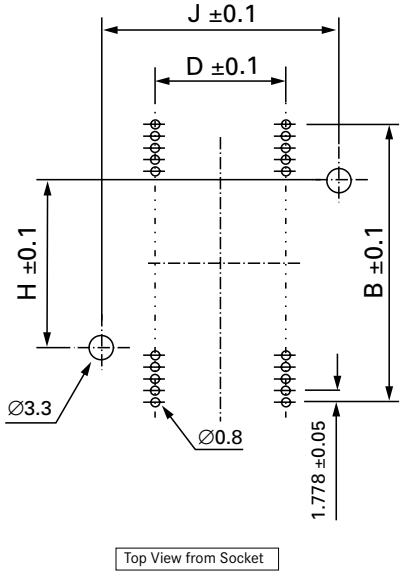
IC121 52 - 06 G 4 L MF

- Series No.
- No. of Contacts
- Row Space (0.6 = 0.6 inches)
- Contact Plating (G = Gold Plating)
- Straight Solder Dip Terminal
- Terminal Length Option:
  L = 5mm
  Unmarked = Not Flanged
- MF = Flanged
  Unmarked = Not Flanged

OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



1.778MM PITCH

Part Number	Pin Count	A	B	C	D	E	F	G	H	J	K
IC121-24055-G4 **	24	24.50	19.558	22.8	14.86	7.27	14.86	16.46	12.0	29.0	-
IC121-2403-G4 **	24	24.00	19.558	15.0	8.30	2.00	8.30	10.10	12.0	21.0	–
IC121-2804-G4 **	28	27.50	23.111	17.0	10.60	3.00	10.60	12.20	16.0	23.0	-
IC121-4006-G4 **	40	38.20	33.782	22.8	16.54	9.27	16.54	18.14	26.0	29.0	5.5
IC121-4206-G4 **	42	40.00	35.56	22.8	16.54	9.27	16.54	18.14	20.0	29.0	5.5
IC121-4806-G4	48	45.50	40.894	22.8	16.54	9.27	16.54	18.14	26.0	29.0	5.5
IC121-5206-G4 **	52	49.00	44.45	26.8	16.54	9.27	16.54	18.14	36.0	29.0	5.5
IC121-5606-G4 **	56	52.50	48.006	22.2	16.54	9.27	16.54	18.14	36.6	29.0	5.5
IC121-64075-G4 **	64	60.00	55.188	26.8	19.80	11.40	19.80	21.40	40.0	32.4	9.4

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +170°C

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

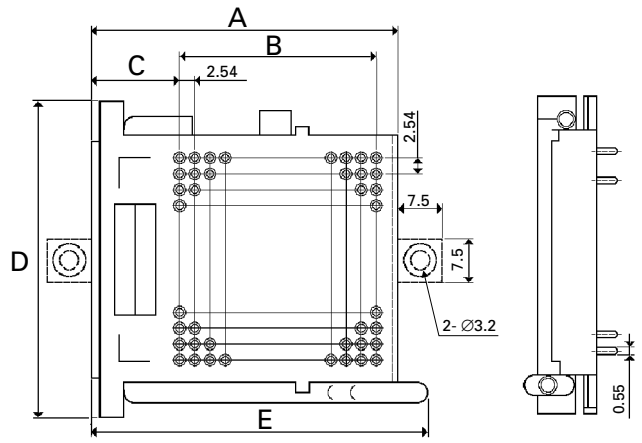
- Wiping action system: Cleans up IC lead surface during handling action
- Reliable 3 point contact system
- Cost performance: Different contact thickness for contact area and terminal area
- Depopulated versions available
- Also available with lever on the right hand side, standard type is lever on the left hand side

PART NUMBER

NP89 - 121 10 - MF G 4

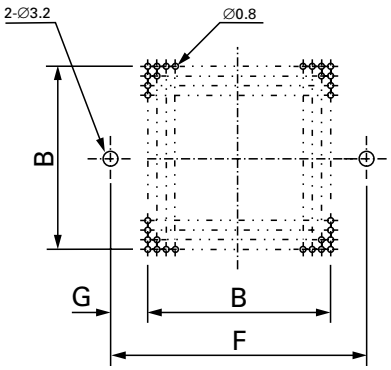
- Series No.
- No. of Contact Pins
- Design Number
- MF = Flanged
Unmarked = Not Flanged
- Contact Plating (Gold)
- Contact Terminal Type

OUTLINE SOCKET DIMENSIONS



Lever left hand side (standard)

RECOMMENDED PCB LAYOUT



Top View from Socket

2.54MM PITCH

Part Number	Pin Count	Grid Size	Socket and PCB Dimensions A	B	C	D	E	F	G
NP89-12110**-G4	121	11 x 11	42.5	25.40	14.00	42.5	52.0	50.1	17.55
NP89-14409**-G4	144	12 x 12	43.1	27.94	14.65	42.7	52.6	50.7	15.55
NP89-13302**-G4	133	14 x 14	51.0	32.02	14.65	51.0	60.5	58.6	18.20
NP89-19601**-G4	196	14 x 14	51.0	32.02	14.65	49.0	60.5	58.6	18.20
NP89-22508**-G4	225	15 x 15	52.7	35.56	14.00	50.3	65.4	60.3	17.55
NP89-21004**-G4	210	17 x 17	59.0	40.64	14.65	57.0	71.7	66.6	18.20
NP89-28906**-G4	289	17 x 17	59.0	40.64	14.95	57.0	71.7	66.6	18.20
NP89-36105**-G4	361	19 x 19	63.7	45.72	14.65	61.7	73.2	71.3	18.20
NP89-44111**-G4	441	21 x 21	69.0	50.80	12.00	68.0	81.7	76.4	18.50
NP89-62522**-G4	625	25 x 25	85.7	60.96	17.95	82.0	95.2	92.8	21.50

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–55°C to +170°C
Pin Count:	1020

MATERIALS AND FINISH

Housing:	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper
Plating:	Gold over Nickel (B-class)
Lever Shaft:	Stainless Steel

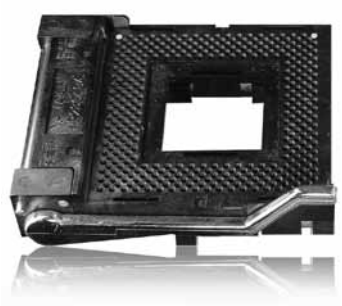
FEATURES

- 1.27mm pitch

PART NUMBER

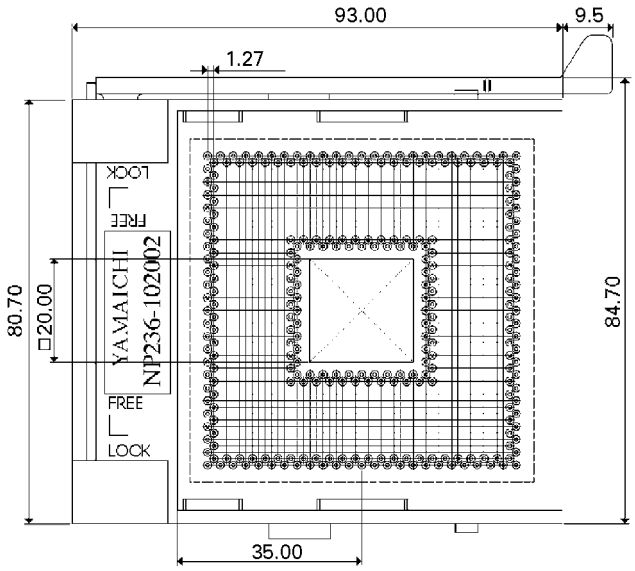
NP236 - 1020 02 - *

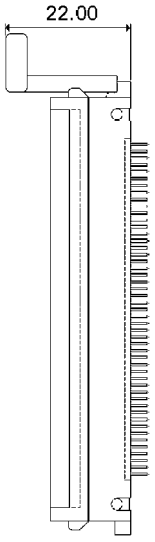
- Series No.
- No. of Contact Pins
- Design Number
- Contact Style of Matching IC Pin
  1 = Ø0.30 ~ Ø0.45
  2 = Ø0.40 ~ Ø0.50



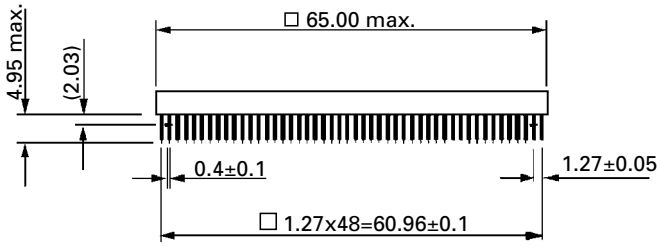
OUTLINE SOCKET DIMENSIONS

NP236-102002-*





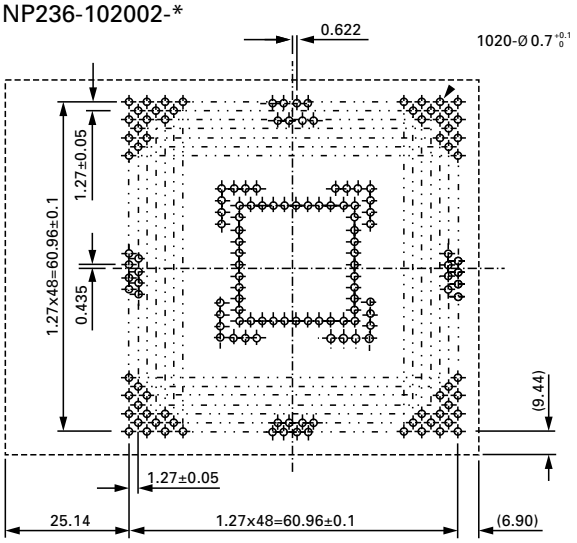
OUTLINE IC DIMENSIONS



RECOMMENDED PCB LAYOUT

Top View from Socket

NP236-102002-*



YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

SMT DEVICES

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

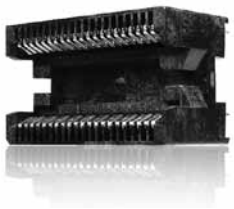
FEATURES

- For inserting SOJ packages in ”Dead-bug” orientation
- Outstanding durability with low insertion withdrawal force
- Guides for automated operation
- The larger contact area and two-point contact design ensures high contact reliability

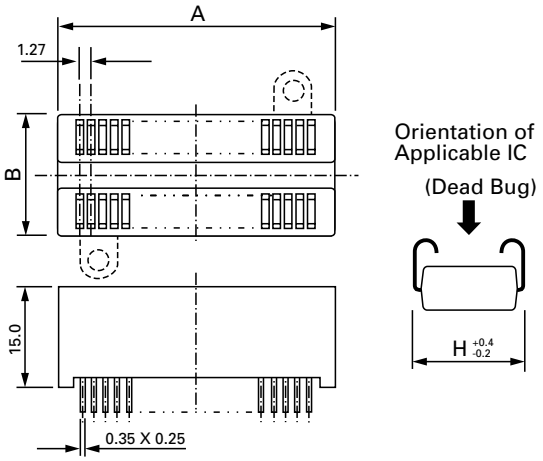
PART NUMBER

IC100 - 36 04 - ** MF G

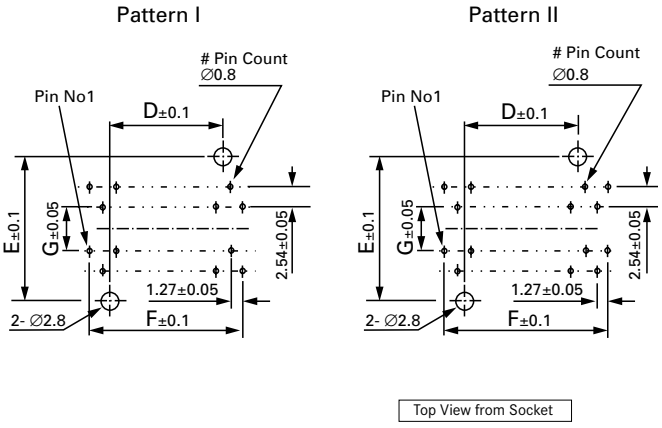
- Series No.
- No. of Contact Pins
- Row Space (03 = 300ML) (04 = 400ML)
- Please specify the number of contacts if a depopulated version is required
- MF = Flanged Unmarked = Not Flanged
- Contact Plating Specification



OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



1.27MM PITCH

*) Flange not available

Part Number	Row Spacing	Pin Count	Socket Dim. A	Socket Dim. B	PCB Dimensions D	PCB Dimensions E	PCB Dimensions F	PCB Dimensions G	PCB Dimensions Pattern	IC Dim. H
IC100-2003-**xx-G	300 mil	20	16.2	15.6	9.0	21.6	1.27 x 9 = 11.43	6.86	II	8.4
*IC100-2403-**-G	300 mil	24	18.8	15.6	11.0	21.6	1.27 x 11 = 13.97	6.86	I	8.4
*IC100-2603-20-G	300 mil	20	20.1	15.6	13.0	21.6	1.27 x 12 = 15.24	6.86	II	8.4
*IC100-2603-**-G	300 mil	26	20.1	15.6	13.0	21.6	1.27 x 12 = 15.24	6.86	II	8.4
*IC100-2803-**-G	300 mil	28	21.4	15.6	14.2	21.6	1.27 x 13 = 16.51	6.86	I	8.4
IC100-3203-**xx-G	300 mil	32	24.0	15.6	14.2	21.6	1.27 x 15 = 19.05	6.86	I	8.4
IC100-2804-**xx-G	400 mil	28	21.4	18.0	14.2	24.1	1.27 x 13 = 16.51	9.40	I	10.9
*IC100-3204-**-G	400 mil	32	24.0	18.0	14.2	24.1	1.27 x 15 = 19.05	9.40	I	10.9
IC100-3604-**xx-G	400 mil	36	26.5	18.0	18.5	24.1	1.27 x 17 = 21.59	9.40	I	10.9
IC100-4004-**xx-G	400 mil	40	29.0	18.0	14.2	24.1	1.27 x 19 = 24.13	9.40	I	10.9
IC100-4204-**xx-G	400 mil	42	30.3	18.0	20.0	24.1	1.27 x 20 = 25.40	9.40	II	10.9
IC100-4404-**xx-G	400 mil	44	31.6	18.0	21.6	24.1	1.27 x 21 = 26.67	9.40	I	10.9
IC100-3605-**xx-G	500 mil	36	26.5	20.7	18.5	26.7	1.27 x 17 = 21.59	11.94	I	13.5

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

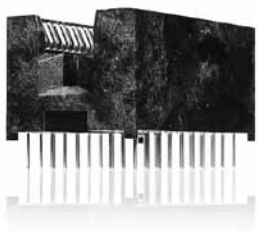
FEATURES

- For inserting SOJ packages in Live-bug orientation
- Outstanding durability with low insertion withdrawal force
- Guides for automated operation
- The larger contact area and two-point contact design ensures high contact reliability

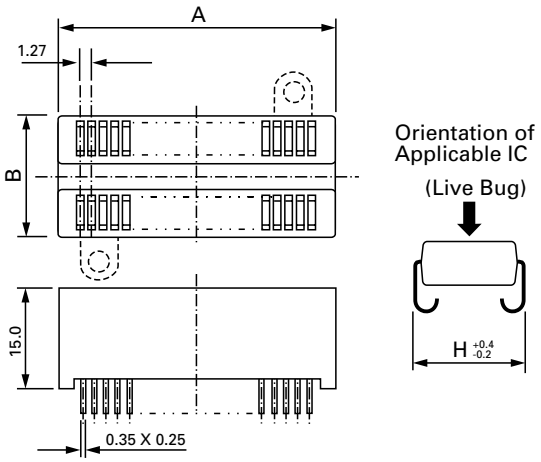
PART NUMBER

IC107 - 26 03 - ** MF G

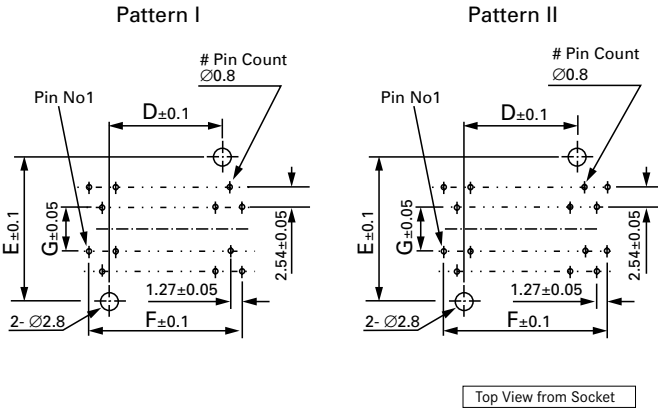
- Series No.
- No. of Contact Pins
- Row Space (03 = 300ML, 04 = 400ML)
- Please specify the number of contacts if a depopulated version is required
- MF = Flanged, Unmarked = Not Flanged
- Contact Plating Specification



OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT



1.27MM PITCH

[1] Flange not available

Part Number	Row Spacing	Pin Count	Socket Dim. A	Socket Dim. B	PCB Dimensions D	PCB Dimensions E	PCB Dimensions F	PCB Dimensions G	PCB Dimensions Pattern	IC Dim. H
IC107-2403-**xx-G	300 mil	24	18.8	15.6	11.0	21.6	1.27 x 11 = 13.97	6.86	I	8.4
IC107-2603-20xx-G	300 mil	20	20.1	15.6	13.0	21.6	1.27 x 12 = 15.24	6.86	II	8.4
IC107-2803-**xx-G	300 mil	28	21.4	15.6	14.2	21.6	1.27 x 13 = 16.51	6.86	I	8.4
IC107-3203-**xx-G	300 mil	32	24.0	15.6	14.2	21.6	1.27 x 15 = 19.05	6.86	I	8.4
IC107-26035-**-G [1]	350 mil	26	20.1	16.8	13.0	22.8	1.27 x 12 = 15.24	8.13	II	9.7
IC107-2804-24xx-G	400 mil	24	21.4	18.0	14.2	24.1	1.27 x 13 = 16.51	9.40	I	10.9
IC107-2804-**xx-G	400 mil	28	21.4	18.0	14.2	24.1	1.27 x 13 = 16.51	9.40	I	10.9
IC107-3604-**xx-G	400 mil	36	26.5	18.0	15.5	24.1	1.27 x 17 = 24.13	9.40	I	10.9
IC107-4004-**xx-G	400 mil	40	29.0	18.0	20.0	24.1	1.27 x 19 = 24.13	9.40	I	10.9
IC107-4204-**xx-G	400 mil	42	30.3	18.0	20.0	24.1	1.27 x 20 = 25.40	9.40	II	10.9

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

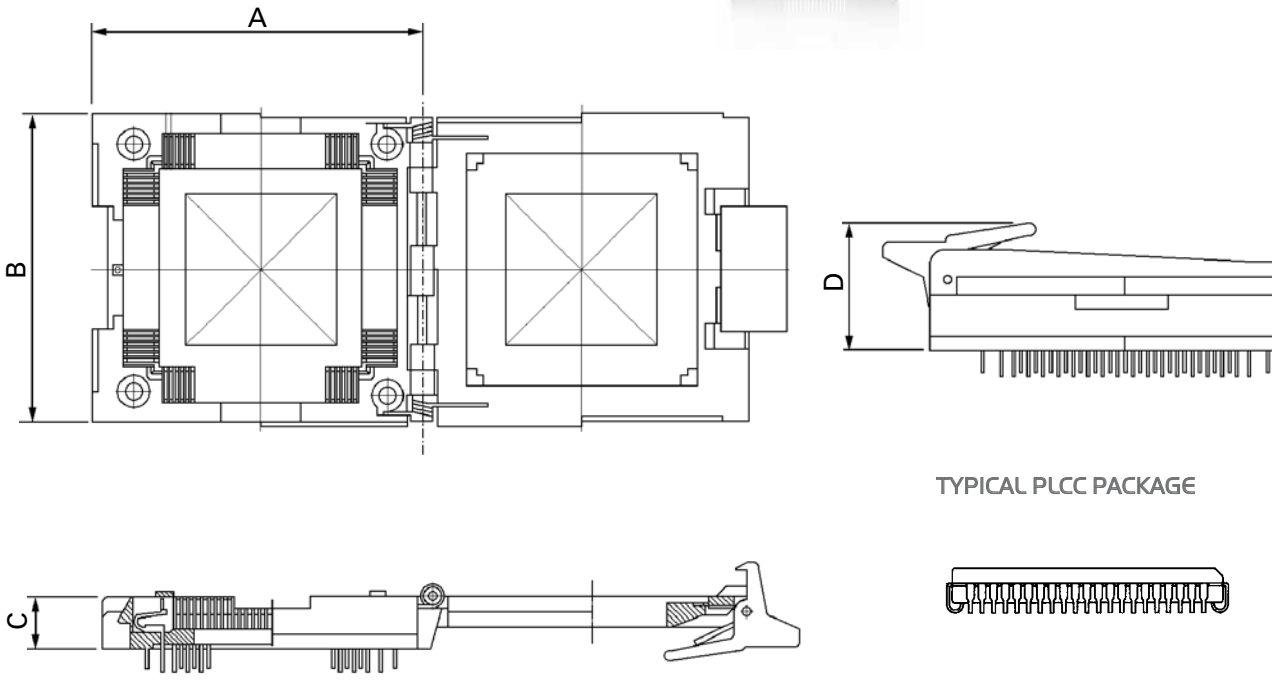
- Clamshell socket for PLCC packages
- IC orientation, Live bug

PART NUMBER

IC51 - 124 4 - 410-1

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number

OUTLINE SOCKET DIMENSIONS



TYPICAL PLCC PACKAGE

1.27MM PITCH

Part Number	Pin Count	A	B	C (open)	D (closed)
IC51-0204-602	20	31.5	26.0	10.0	20.0
IC51-0284-399	28	36.0	30.0	10.0	20.5
IC51-0324-453	32	35.0	30.0	9.0	19.5
IC51-0444-400	44	40.0	34.0	10.0	20.0
IC51-0524-411-1	52	43.0	38.0	10.0	23.5
IC51-0684-390-1	68	49.0	42.0	10.0	23.5
IC51-0844-401-1	84	55.0	48.0	10.0	23.5
IC51-1004-405-1	100	60.6	54.0	10.0	23.5
IC51-1244-410-1	124	65.0	60.0	10.0	23.5

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Upper Body:- Polyphenylenesulfide (PPS)
	Lower Body:- Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Two-point contacts and a larger contact width ensures high reliability
- Auto-ejecting type for automated operation (IC is inserted in „one touch“ operation and pushing the cover raises it for easy IC removal)
- Available for two types of IC orientation (Live-bug & Dead-bug)

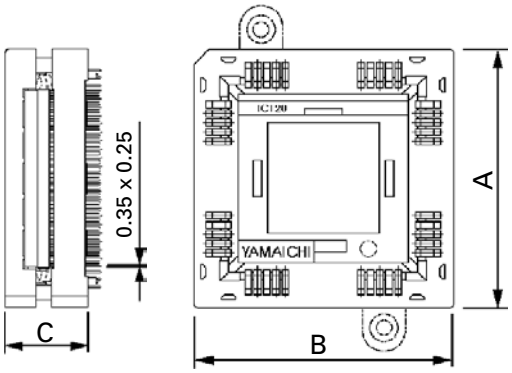
PART NUMBER

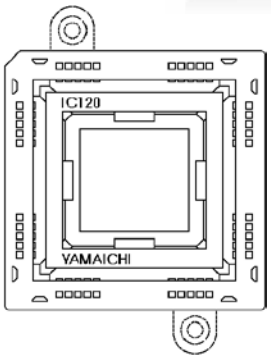
IC120 - 068 4 - 0 04 MF

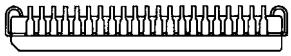
- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Terminal Arrangement and IC Orientation
- Design Number
- MF = Flanged
  Unmarked = Not Flanged

Note:
Mounting Flange is not available for 18, 20 and IC120-0684-304

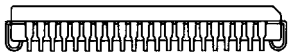
OUTLINE SOCKET DIMENSIONS







Dead Bug



Live Bug

1.27MM PITCH

*Most compatible socket type

Inserting Direction of IC
DB = Dead-bug LB = Live Bug

Part Number	Pin Count	IC Insertion	Socket Dimensions		
			A	B	C
*IC120-0184-102	18	LB	17.0	21.5	19.3
IC120-0204-005	20	DB	20.0	20.0	18.0
*IC120-0204-205	20	DB	20.0	20.0	18.0
IC120-0204-405	20	DB	20.0	20.0	18.0
*IC120-0224-001	22	DB	17.0	21.5	18.0
IC120-0224-201	22	DB	17.0	21.5	18.0
IC120-0224-301	22	LB	17.0	21.5	19.3
IC120-0284-008	28	DB	23.0	23.0	18.0
IC120-0284-108	28	LB	23.0	23.0	19.3
*IC120-0284-208	28	DB	23.0	23.0	18.0
*IC120-0284-308	28	LB	23.0	23.0	19.3
IC120-0284-408	28	DB	23.0	23.0	18.0
*IC120-0284-508	28	LB	23.0	23.0	19.3
IC120-0324-009	32	DB	22.5	25.0	18.0
IC120-0324-109	32	LB	22.5	25.0	19.3
*IC120-0324-209	32	DB	22.5	25.0	18.0
*IC120-0324-309	32	LB	22.5	25.0	19.3
IC120-0324-409	32	DB	22.5	25.0	18.0
IC120-0324-509	32	LB	22.5	25.0	19.3
IC120-0444-006	44	DB	28.0	28.0	18.0
IC120-0444-106	44	LB	28.0	28.0	19.3
*IC120-0444-206	44	DB	28.0	28.0	18.0
*IC120-0444-306	44	LB	28.0	28.0	19.3
IC120-0444-406	44	DB	28.0	28.0	18.0
IC120-0444-506	44	LB	28.0	28.0	19.3
IC120-0524-007	52	DB	30.0	30.0	18.0
IC120-0524-107	52	LB	30.0	30.0	19.3
*IC120-0524-207	52	DB	30.0	30.0	18.0
*IC120-0524-307	52	LB	30.0	30.0	19.3
*IC120-0524-407	52	DB	30.0	30.0	18.0
*IC120-0524-507	52	LB	30.0	30.0	19.3
IC120-0684-004	68	DB	35.0	35.0	18.0
IC120-0684-104	68	LB	35.0	35.0	19.3
*IC120-0684-204	68	DB	35.0	35.0	18.0
*IC120-0684-304	68	LB	35.0	35.0	19.3
IC120-0844-003	84	LB	40.0	40.0	18.0
IC120-0844-103	84	LB	40.0	40.0	19.3
*IC120-0844-203	84	LB	40.0	40.0	18.0
*IC120-0844-303	84	LB	40.0	40.0	19.3

SERIES IC51 (CLAMSHELL - TH) - 0.40 TO 1.27MM PITCH SOP, TSOP TYPE I & II

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C (for type PSF) –55°C to +170°C (for type PES & PEI)
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC51 - 028 2 - 334-1 - MF

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- MF = Flanged
Unmarked = Not Flanged

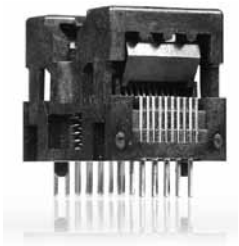
SERIES IC189 (OPEN TOP - TH) - 0.40 TO 1.27MM PITCH SOP, TSOP TYPE I & II

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC, pitch 0.4, 0.5 1,000MΩ min. at 500V DC, pitch 0.65, 0.8,1.27
Dielectric Withstanding Voltage:	100V AC for 1 minute, pitch 0.4, 0.5 500V AC for 1 minute, pitch 0.65 700V AC for 1 minute, pitch 0.8, 1.27
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions
Contact Force:	20g to 80g per pin

MATERIALS AND FINISH

Housing:	Polysulphone (PSF), glass-filled Polyethersulphone (PES), glass-filled Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



PART NUMBER

IC189 - 016 2 - 019 - * *

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
N = Without Positioning Pin
P = With Positioning Pin
- Protection Key**
K = With Protection Key
Unmarked = Without Protectin Key

** Protection Key: Prevents IC from releasing during transportation

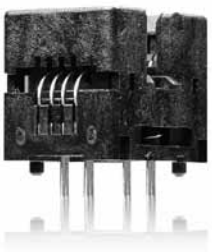
SERIES IC235 (OPEN TOP - TH) - 0.80 TO 1.27MM PITCH SOP, TSOP TYPE II

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.
Contact Force:	20g to 80g per pin

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



PART NUMBER

IC235 - 020 2 - 201 - *

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
N = Without Positioning Pin
P = With Positioning Pin

SERIES IC191 (OPEN TOP - TH) - 0.50MM PITCH THIN SMALL OUTLINE PACKAGE (TSOP TYPE I)

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +170°C –40°C to +150°C (type -004*)
Mating Cycles:	10,000 insertions min.
Contact Force:	20g to 80g per pin

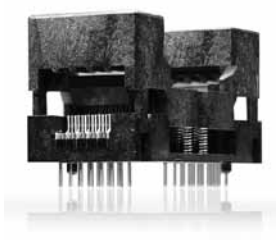
MATERIALS AND FINISH

Housing: Polyetherimide (PEI), glass-filled
Contacts: Beryllium Copper (BeCu)
Plating: Gold over Nickel

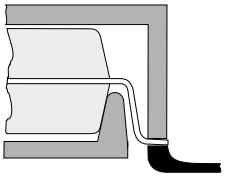
PART NUMBER

IC191 - 032 2 - 001 - *

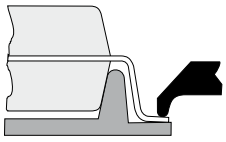
- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
  N = Without Positioning Pin
  Unmarked = With Positioning Pin



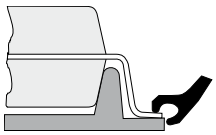
CONTACT STYLES



SERIES IC51

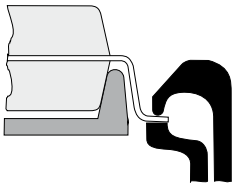


SERIES IC189 / IC191

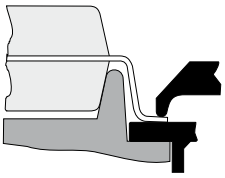


SERIES IC235

SPECIALITIES



SERIES IC (KELVIN)



SERIES IC (TWO POINT CONTACT)

*SOP variations e.g. TSSOP...

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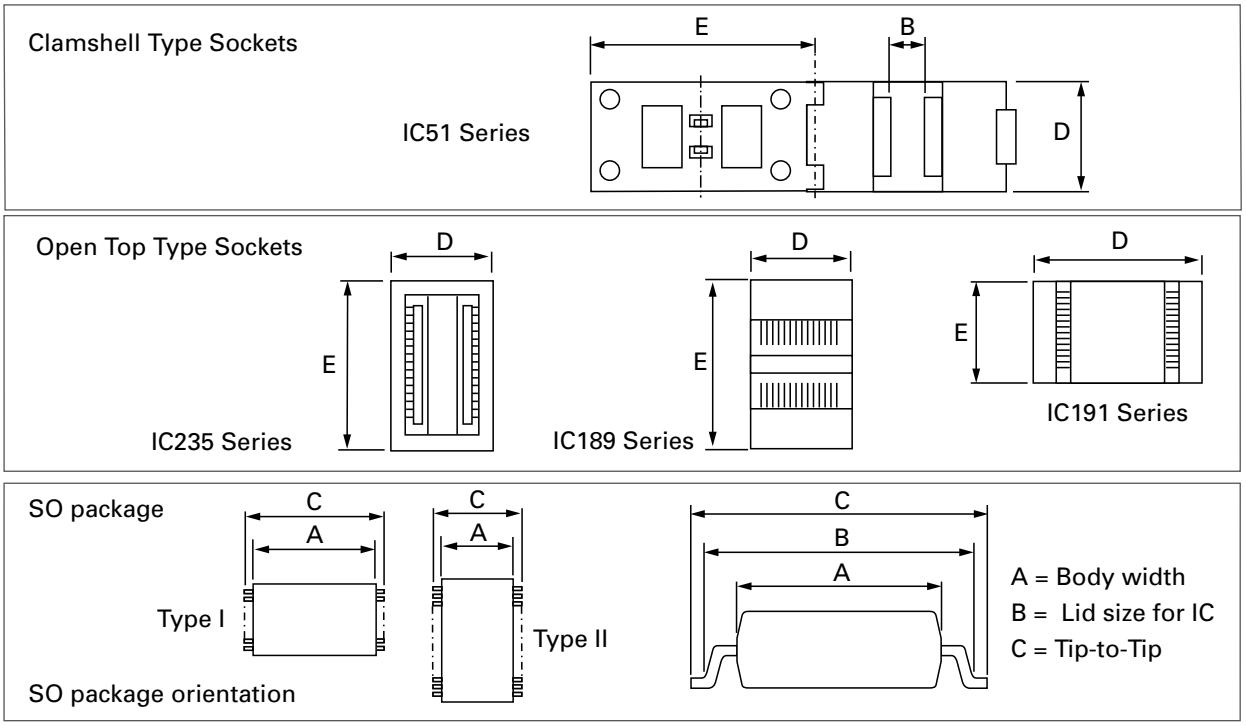


C L = Clamshell, OT = Open Top, S = Seperator, FB = Floating Base

0.40MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0142-2074	14	4.40	5.70	6.40	16.0 x 34.0	SOP	CL/FB
IC51-0202-2072	20	4.40	5.70	6.40	16.0 x 34.0	SOP	CL/FB
IC51-0242-2071	24	4.40	5.70	6.40	16.0 x 34.0	SOP	CL/FB
IC189-0482-111*-2	48	-	12.40	4.00	34.0 x 16.0	TSOP I	OT
IC51-0482-2069	48	4.40	5.70	6.40	20.0 x 34.0	SOP	CL/FB
IC189-0522-124 *	52	-	8.69	10.49	30.5 x 18.0	TSOP I	OT
IC51-0562-2067	56	4.40	5.70	6.40	20.0 x 34.0	SOP	CL/FB
IC51-0802-2077	80	6.10	7.45	8.10	34.0 x 34.0	SOP	CL/FB

0.50MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0242-1006-1	24	14.30	15.20	16.00	15.0 x 40.0	TSOP I	CL/FB
IC51-0302-2037	30	4.40	5.70	6.40	18.0 x 38.0	SOP	CL/FB
IC191-0322-001 *-*	32	18.40	-	20.00	40.0 x 16.0	TSOP I	OT
IC51-0322-1031-1	32	12.00	13.30	14.00	16.0 x 33.5	TSOP I	CL/FB
IC51-0322-1207-1	32	18.40	19.30	20.00	18.0 x 44.0	TSOP I	CL/FB
IC51-0322-883-1	32	14.00	14.50	16.00	16.0 x 39.0	TSOP I	CL/FB
IC51-0382-2036	38	4.40	5.70	6.40	25.0 x 38.0	SOP	CL/FB
IC189-0402-068 *	40	18.40	-	20.00	40.0 x 16.0	TSOP I	OT
IC191-0402-002 *-*	40	18.40	-	20.00	18.0 x 40.0	TSOP I	OT
IC51-0402-1174-1	40	18.40	19.30	20.00	18.0 x 44.0	TSOP I	CL/FB
IC51-0402-1557	40	12.00	13.40	14.00	20.0 x 44.0	TSOP I	CL/FB
IC189-0482-066 *	48	16.40	-	18.00	36.0 x 20.0	TSOP I	OT
IC189-0482-077 *	48	18.40	-	20.00	40.0 x 18.0	TSOP I	OT
IC189-0482-094 *	48	6.10	-	8.10	28.1 x 18.2	SOP	OT
IC191-0482-004 *-*	48	18.40	-	20.00	40.0 x 20.0	TSOP I	OT
IC51-0482-1099	48	16.40	17.60	18.00	20.0 x 44.0	TSOP I	CL/FB
IC51-0482-1513	48	6.10	7.20	8.10	22.0 x 38.0	SOP	CL/FB
IC51-0482-2018	48	18.40	19.15	20.00	20.0 x 44.0	TSOP I	CL/FB
IC53-0502-912	50	4.40	-	6.40	24.3 x 34.0	SOP	NO LID
IC189-0562-067 *	56	18.40	-	20.00	40.0 x 20.0	TSOP I	OT
IC191-0562-003 *	56	18.40	-	20.00	21.5 x 40.0	TSOP I	OT
IC51-0562-1514	56	6.10	7.20	8.10	29.0 x 38.0	SOP	CL/FB
IC53-0642-911	64	6.10	-	8.10	30.0 x 34.0	SOP	NO LID

0.55 / 0.6 / 0.635MM PITCH

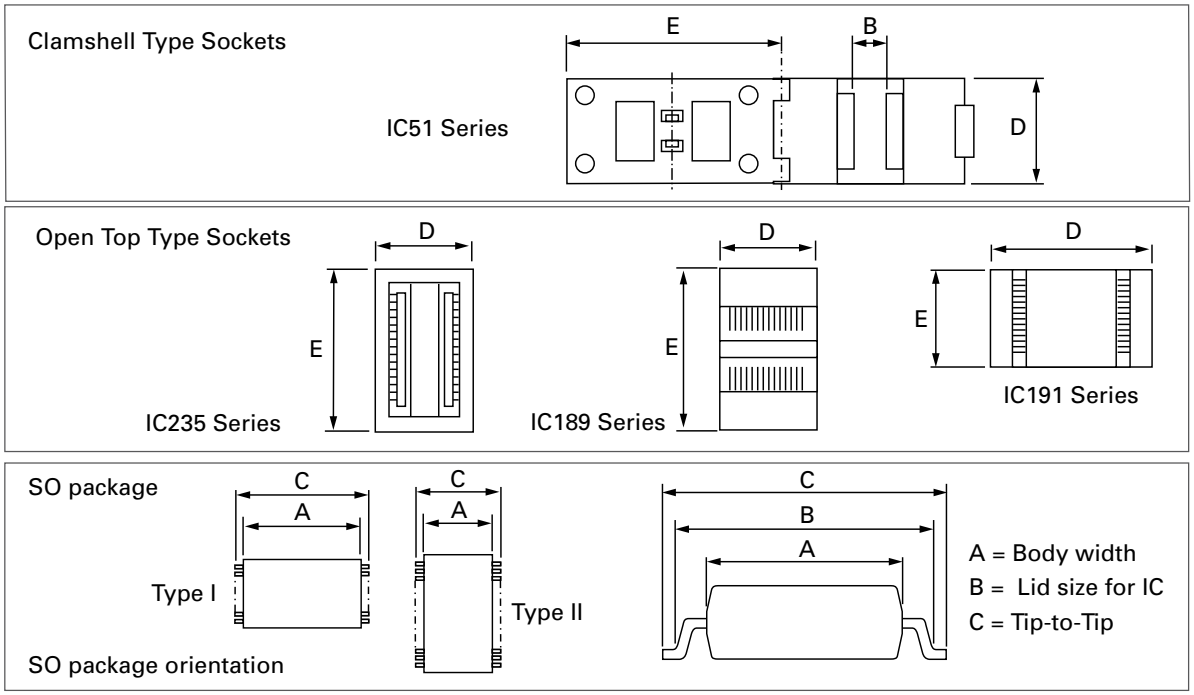
Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0282-673-1	28	11.80	12.60	13.40	15.0 x 37.0	SOP	CL/FB
IC51-0322-910	32	14.00	14.60	15.20	17.5 x 39.0	SOP	CL/FB
IC51-1387 KS-15186	48	7.60	9.40	10.30	21.0 x 35.0	SOP	CL/S
IC51-0562-1387	56	7.60	9.40	10.30	21.0 x 35.0	SOP	CL/S

0.65MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-778 A104194-001	8	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/S
IC51-0162-778	16	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/S
IC51-0162-911	16	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/FB
IC51-0242-1341	16	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/S
IC51-755 KS-7514	16	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/S
IC189-0202-038 *	20	6.10	-	8.10	24.0 x 22.5	SOP	OT
IC51-0202-779	20	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/S
IC51-0202-912	20	4.40	5.60	6.40	16.0 x 32.0	SOP	CL/FB
IC51-755 KS-7631	20	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/S
IC189-0242-081P	24	6.10	-	7.70	13.6 x 21.5	SOP	OT
IC51-0242-761	24	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/S
IC51-0242-913	24	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/FB
IC51-755 KS-13330	28	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/S
IC51-0302-755	30	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/S
IC189-0302-121	30	6.10	-	8.10	22.0 x 24.0	SOP	OT
IC51-0302-914	30	5.60	6.70	7.60	16.0 x 32.0	SOP	CL/FB
IC189-0382-037 *	38	6.10	-	8.10	24.0 x 22.5	SOP	OT
IC51-0402-1347	40	5.50	6.70	7.80	16.0 x 32.0	SOP	CL/S
IC51-0402-1396	40	6.30	7.20	8.20	16.0 x 32.0	SOP	CL/S
IC189-0482-047N	48	8.00	-	10.00	24.0 x 22.5	SOP	OT
IC51-0482-1163	48	7.60	9.60	10.16	21.0 x 36.0	SOP	CL/S

0.80MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0122-1836	12	4.40	5.90	6.40	14.0 x 32.4	SOP	CL/S
IC51-0162-748	16	4.40	5.70	6.40	20.0 x 31.5	SOP	CL/S
IC51-0242-308	24	5.40	6.20	7.20	32.0 x 38.5	SOP	CL/FB
IC51-0242-577	24	7.80	9.30	10.00	22.0 x 32.5	SOP	CL/S
IC51-0362-309	36	8.40	11.00	12.10	32.0 x 38.5	SOP	FB
IC189-0422-025*-*	42	8.40	-	11.93	25.0 x 25.4	SOP	OT
IC51-0422-393	42	8.40	11.00	12.10	32.0 x 38.0	SOP	FB
IC51-0482-1009-2	48	13.70	15.10	16.00	28.0 x 42.5	SOP	FB
IC51-0502-1708	50	10.16	11.00	11.80	26.0 x 36.5	SOP	CL/S
IC189-0542-088 *	54	10.16	-	11.76	24.9 x 29.8	SOP	OT
IC189-0542-093 *	54	10.16	-	11.76	24.9 x 29.8	SOP	OT
IC51-0562-2144	56	13.30	15.15	16.00	22.0 x 48.5	SOP	CL/S
IC189-0622-084*-*	62	16.00	-	18.00	31.46 x 34.60	SOP	OT
IC189-0642-007 *-*	64	12.00	-	14.25	27.35 x 34.10	SOP	OT
IC189-0642-069 *-*	64	10.70	-	14.10	27.05 x 33.80	SOP	OT
IC189-0702-074 *	70	12.64	-	15.90	29.3 x 37.0	SOP	OT
IC51-0702-1965	70	12.80	14.90	15.90	36.0 x 42.0	SOP	CL/S
IC51-0442-1709	44 (50)	10.20	11.00	11.80	26.0 x 36.5	SOP	CL/S



1.00MM PITCH

C L = Clamshell, OT = Open Top, S = Seperator, FB = Floating Base

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0242-310-1	24	4.5	5.2	6.0	18.0 x 28.5	SOP	CL/S
IC51-0322-948	32	8.2	10.5	11.8	20.0 x 32.0	SOP	CL/S
IC51-0342-741	34	7.8	7.9	9.4	22.0 x 35.0	SOP	CL/S

1.25MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-0142-951	14	4.4	5.2	5.9	24.0 x 27.5	SOP	CL/S

1.27MM PITCH

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC235-0082-236-*	8	7.00	-	8.60	16.8 x 12.0	SOP	OT
IC51-0082-1024	8	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-0082-763	8	4.10	5.4	6.00	14.0 x 30.0	SOP	CL/S
IC51-1035 KS-10460	8	4.00	5.40	6.00	22.0 x 27.2	SOP	CL/S
IC51-0142-1013	14	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-1035 KS-15187	14	4.00	5.40	6.00	22.0 x 27.2	SOP	CL/S
IC51-347 KS-7704	14	7.70	9.50	10.30	16.0 x 31.5	SOP	CL/S
IC189-0162-003 *-*	16	5.30	-	7.80	20.9 x 15.8	SOP	OT
IC189-0162-019 *-*	16	5.60	-	7.70	20.8 x 16.0	SOP	OT
IC51-0162-1025	16	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-0162-1035	16	4.00	5.40	6.00	22.0 x 27.2	SOP	CL/S
IC51-0162-1042	16	4.00	5.40	6.00	22.0 x 27.2	SOP	CL/S
IC51-0162-150	16	4.50	4.90	6.40	26.0 x 35.0	SOP	CL/S
IC51-0162-271-1	16	5.50	5.22	8.00	13.0 x 28.5	SOP	CL/S
IC51-0162-271-2	16	5.00	5.22	8.00	13.0 x 28.5	SOP	CL/S
IC51-0162-271-3	16	4.50	5.22	8.00	13.0 x 28.5	SOP	CL/S
IC51-0162-272-1	16	5.50	5.72	8.00	13.0 x 28.5	SOP	CL/S
IC51-0162-273-1	16	5.50	6.22	8.00	13.0 x 28.5	SOP	CL/S
IC51-0162-302	16	5.35	7.20	7.80	12.0 x 30.5	SOP	CL/S
IC51-0162-658	16	4.40	5.70	7.00	26.0 x 31.5	SOP	CL/S
IC51-0162-902-2	16	5.30	7.20	8.20	12.0 x 28.5	SOP	CL/S

1.27MM PITCH (CONT'D)

Part Number	Pin Count	IC Body A	IC Socket and Lid Size B (max.)	IC Tip-to-Tip C	Socket Dimensions D x E	Package Type	Note
IC51-347 KS-6768	18	7.70	9.50	10.30	18.0 x 31.5	SOP	CL/S
IC189-0202-017	20	5.60	-	7.70	24.0 x 22.5	SOP	OT
IC51-0202-1026	20	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-0202-164	20	5.30	6.70	8.50	32.0 x 36.5	SOP	CL/S
IC51-0202-347	20	7.70	9.53	10.30	16.0 x 31.5	SOP	CL/S
IC51-0202-714	20	7.60	9.30	10.30	18.0 x 32.0	SOP	CL/FB
IC51-0202-932-1	20	5.30	6.50	7.20	15.5 x 26.0	SOP	CL/S
IC51-334 KS-13574	20	7.50	9.40	10.30	18.0 x 32.0	SOP	CL/S
IC51-0222-803	22	5.50	6.00	6.60	16.5 x 29.0	SOP	CL/S
IC189-0242-040 *	24	7.15	-	10.30	24.0 x 22.5	SOP	OT
IC51-0202-1026	20	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-0202-164	20	5.30	6.70	8.50	32.0 x 36.5	SOP	CL/S
IC51-0202-347	20	7.70	9.53	10.30	16.0 x 31.5	SOP	CL/S
IC51-0202-714	20	7.60	9.30	10.30	18.0 x 32.0	SOP	CL/FB
IC51-0242-303-1	24	5.30	7.30	8.00	18.0 x 28.5	SOP	CL/S
IC51-0242-367-1	24	9.40	10.43	11.20	18.0 x 32.5	SOP	CL/S
IC51-0242-793	24	5.50	7.10	8.00	18.5 x 29.0	SOP	CL/S
IC51-0242-980	24	5.20	7.20	7.90	18.5 x 32.5	SOP	CL/FB
IC51-0262-1339	26	7.60	8.40	9.20	23.0 x 35.5	SOP	CL/FB
IC51-0282-334-*.KS-6411	24	7.50	9.40	10.30	22.0 x 32.5	SOP	CL/S
IC189-0282-042 *	28	7.15	-	10.30	24.0 x 22.5	SOP	OT
IC51-0282-165	28	7.40	8.40	9.40	40.0 x 50.0	SOP	CL/S
IC51-0282-334-1	28	7.50	9.40	10.30	22.0 x 32.5	SOP	CL/S
IC51-0282-474	28	8.45	11.10	12.00	22.0 x 32.5	SOP	CL/S
IC51-0282-474-2	28	8.45	10.70	12.00	22.0 x 32.5	SOP	CL/S
IC51-0282-986	28	7.60	9.60	10.30	23.0 x 35.5	SOP	CL/FB
IC51-0302-371-1	30	7.80	9.60	10.30	24.0 x 32.5	SOP	CL/S
IC51-0302-904	30	7.80	9.20	10.30	24.0 x 32.5	SOP	CL/S
IC189-0322-004 *-*	32	11.40	-	14.10	27.2 x 26.5	SOP	OT
IC189-0322-005 *-*	32	11.00	-	14.00	27.2 x 27.5	SOP	OT
IC51-0322-304-2	32	8.40	11.00	12.00	24.0 x 32.5	SOP	CL/S
IC51-0322-667	32	11.60	13.10	14.00	26.0 x 33.0	SOP	CL/S
IC51-0322-667-2	32	11.60	13.10	14.00	26.0 x 33.0	SOP	CL/S
IC51-0322-937	32	8.80	10.90	12.00	26.0 x 31.5	SOP	CL/S
IC51-0322-950	32	11.30	13.00	15.00	28.0 x 42.5	SOP	CL/FB
IC51-0402-1197	40	10.90	12.90	13.70	20.0 x 52.0	SOP	CL/S
IC51-0402-991	40	11.60	13.00	14.00	30.0 x 34.5	SOP	CL/S
IC189-0442-065 *	44	13.20	-	16.00	29.11 x 34.10	SOP	OT
IC51-0442-1208	44	12.80	14.70	15.60	22.0 x 55.0	SOP	CL/S
IC51-0442-1315	44	13.00	15.00	15.80	33.0 x 40.5	SOP	CL/FB
IC51-0442-1536	44	13.40	14.70	15.60	22.0 x 55.0	SOP	CL/S

SERIES IC51 (CLAMSHELL - TH) - 0.40MM TO 1.27MM QFP, PQFP, TQFP AND MQUAD®

*QFP variations e.g. BQFP...

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	for 1 minute (socket depended)
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C (for type PEI/PSF)
	–55°C to +170°C (for type PES)
	–55°C to +170°C (for type PEI)
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polysulphone (PSF), glass-filled
	Polyethersulphone (PES), glass-filled
	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC51 - 064 4 - 807

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number

As specifications for this product differ by pitch and material-mix, please contact Yamaichi for detailed information.

SERIES IC357 AND IC402 (OPEN TOP - TH) - 0.40MM TO 0.8MM

QUAD FLAT PACKAGE (QFP) WITH 2-POINT CONTACT TYPE

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC, pitch 0.4 to 0.8
Dielectric Withstanding Voltage:	100V AC for 1 minute, pitch 0.5 to 0.8
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.
Contact Force:	20g to 45g per pin

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES) glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC357 - 100 4 - 002 - *

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
  N = Without Positioning Pin
  P = With Positioning Pin

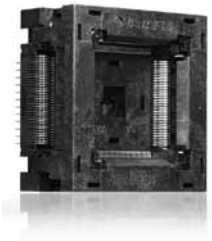
SERIES IC234 (OPEN TOP - TH) - 0.4MM TO 0.8MM QUAD FLAT PACKAGE (QFP) WITH SHOULDER CONTACT TYPE

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC pitch 0.4, 0.5
	1,000MΩ min. at 500V DC pitch 0.65, 0.8
Dielectric Withstanding Voltage:	100V AC for 1 minute pitch 0.4, 0.5
	500V AC for 1 minute pitch 0.65
	700V AC for 1 minute pitch 0.8
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	20g to 80g per pin
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES) glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



PART NUMBER

IC234 - 120 4 - 017 - *

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
  N = Without Positioning Pin
  P = With Positioning Pin
  K = Protection Key**

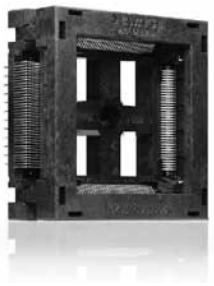
** Protection Key: Prevents IC from releasing during transportation

SERIES IC200 / IC201 / IC216 / IC217 / IC218 / IC248 (OPEN TOP - TH) - 0.40MM TO 0.80MM QUAD FLAT PACKAGES (QFP)

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC or 1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100/500/700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +170°C and –40°C to +150°C
Contact Force:	20g to 80g per pin
Mating Cycles:	10,000 insertions min.

The information above is typical for this Series
for individual specifications please contact Yamaichi



Materials and Finish

Housing:	Polyetherimide (PEI), glass-filled Polyphenylenesulfide (PPS), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC200 - 128 4 - 001 * - *

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
  N = Without Positioning Pin
  P = With Positioning Pin
- Protection Key**
  K = With Protection Key
  Unmarked = Without Protectin Key

** Protection Key: Prevents IC from releasing during transportation

SERIES IC500 (OPEN TOP - TH) - 0.50MM TO 0.80MM QUAD FLAT PACKAGE (QFP) WITH 2-POINT CONTACT TYPE

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC pitch 0.5 1,000MΩ min. at 500V DC pitch 0.65, 0.8
Dielectric Withstanding Voltage:	100V AC for 1 minute pitch 0.5 500V AC for 1 minute pitch 0.65 700V AC for 1 minute pitch 0.8
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	20g to 80g per pin
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled Polyethersulphone (PES) glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

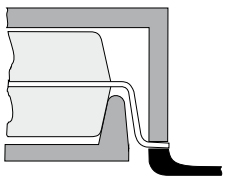
PART NUMBER

IC500 - 064 4 - 008 - *

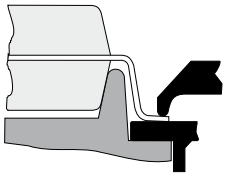
- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number
- Positioning Pin:
  N = Without Positioning Pin
  P = With Positioning Pin
  K = Protection Key**

** Protection Key: Prevents IC from releasing during transportation

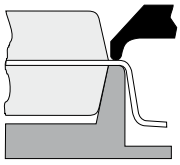
CONTACT STYLES



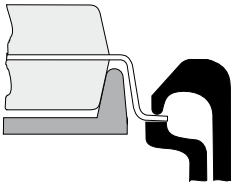
SERIES IC51



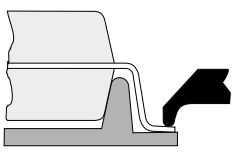
SERIES IC357 / IC402



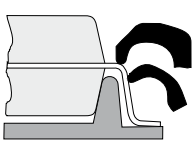
SERIES IC234



SERIES IC (KELVIN)

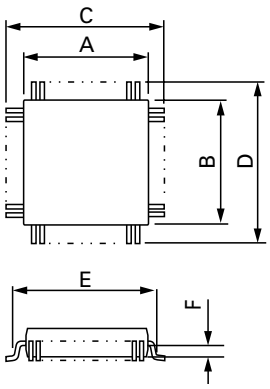


SERIES IC2**

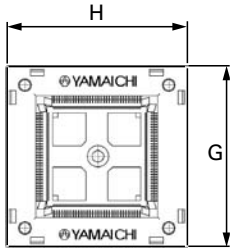


SERIES IC500

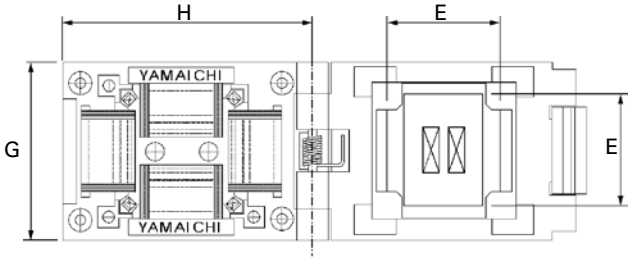
Outline IC Package Dimensions



Outline Open Top Socket Dimensions



Outline Clamshell Socket Dimensions



0.40MM PITCH

C L = Clamshell, OT = Open Top

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-0644-1972	64	7.0 x 7.0	9.0 x 9.0	8.25	-	35.0 x 32.0	CL
IC234-0804-055	80	10.0 x 10.0	12.0 x 12.0	-	0.7375	30.0 x 30.0	OT
IC234-1004-045	100	12.0 x 12.0	14.0 x 14.0	-	0.56	35.0 x 32.0	OT
IC51-1004-1919-*	100	12.0 x 12.0	14.0 x 14.0	13.30	-	36.0 x 42.5	CL
IC234-1204-022 *	120	14.0 x 14.0	16.0 x 16.0	-	0.762	34.0 x 34.0	OT
IC51-1204-1596	120	14.0 x 14.0	16.0 x 16.0	15.35	-	36.0 x 42.5	CL
IC51-1204-1812	120	14.0 x 14.0	16.0 x 16.0	-	-	36.0 x 42.5	CL
IC234-1284-043 *	128	14.0 x 14.0	16.0 x 16.0	-	0.56	34.0 x 34.0	OT
IC357-1284-056	128	14.0 x 14.0	16.0 x 16.0	-	0.65	34.0 x 34.0	OT
IC357-1284-076	128	14.0 x 14.0	16.0 x 16.0	-	0.45	34.0 x 34.0	OT
IC51-1284-1702	128	14.0 x 14.0	16.0 x 16.0	15.40	-	36.0 x 42.5	CL
IC51-1284-1702-2	128	14.0 x 14.0	16.0 x 16.0	15.40	-	36.0 x 42.5	CL
IC51-1284-1788	128	14.0 x 14.0	16.0 x 16.0	15.30	0.70	39.0 x 42.5	CL
IC234-1444-053 *	144	16,0 x 16,0	18.0 x 18.0	-	0.54	36.0 x 36.0	OT
QFP11T144-001	144	16.0 x 16.0	18.0 x 18.0	17.20	.	39.0 x 42.5	CL
IC234-1564-038P-2	156	14.0 x 14.0	16.0 x 16.0	.	0.76	38.0 x 44.0	OT
IC234-1764-059 *	176	20,0 x 20,0	22.0 x 22.0	.	0.67	40.0 x 40.0	OT
IC51-1764-1995	176	14.0 x 20.0	22.0 x 22.0	21.30	-	46.0 x 50.0	CL
IC51-1764-1995-6	176	20.0 x 20.0	22.0 x 22.0	21.20	-	46.0 x 50.0	CL
IC234-2164-050 *	216	20.0 x 20.0	26.0 x 26.0	-	0.67	44.0 x 44.0	OT
IC234-2164-066-*	216	20.0 x 20.0	26.0 x 26.0	-	0.67	44.0 x 44.0	OT
IC51-2164-1887	216	24.0 x 24.0	26.0 x 26.0	25.30	-	50.0 x 48.0	CL
IC51-2164-1887-10	216	24.0 x 24.0	26.0 x 26.0	25.30	-	50.0 x 48.0	CL
IC234-2564-020 *	256	24.0 x 24.0	30.0 x 30.0	-	0.67	48.0 x 48.0	OT
IC234-2564-078 *	256	24.0 x 24.0	30.0 x 30.0	-	0.67	48.0 x 48.0	OT
IC51-2564-1668	256	28.0 x 28.0	31.2 x 31.2	30.00	-	56.0 x 62.0	CL
IC51-2564-1668-10	256	28.0 x 28.0	30.0 x 30.0	29.40	-	56.0 x 62.0	CL
IC51-2564-1668-6	256	27.2 x 27.2	29.8 x 29.8	30.00	-	56.0 x 62.0	CL
IC51-2564-1668-8	256	28.0 x 28.0	30.6 x 30.6	30.00	-	56.0 x 62.0	CL

0.50MM PITCH

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-0324-805	32	5.0 x 5.0	7.0 x 7.0	6.20	-	28.0 x 31.0	CL
IC234-0484-034 *	48	7.0 x 7.0	9.0 x 9.0	-	0.47	26.6 x 26.6	OT
IC234-0484-039 *	48	7.0 x 7.0	9.0 x 9.0	-	0.74	26.6 x 26.6	OT
IC357-0484-078 *	48	7.0 x 7.0	9.0 x 9.0	-	0.45	22.0 x 22.0	OT
IC51-0484-806	48	7.0 x 7.0	9.0 x 9.0	8.20	-	29.0 x 32.0	CL
IC51-0484-806-2	48	7.0 x 7.0	9.0 x 9.0	8.30	-	29.0 x 32.0	CL
IC201-0644-003 *	64	10.0 x 10.0	12.0 x 12.0	-	0.70	30.0 x 36.0	OT
IC201-0644-040 *	64	10.0 x 10.0	12.0 x 12.0	-	0.67	28.7 x 28.7	OT
IC234-0644-027 *	64	10.0 x 10.0	12.0 x 12.0	-	0.66	29.6 x 29.6	OT
IC234-0644-122 *	64	10.0 x 10.0	12.0 x 12.0	-	0.66	29.6 x 29.6	OT

0.50MM PITCH (CONT'D)

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC357-0644-068	64	10.0 x 10.0	12.0 x 12.0	-	0.6375	26.2 x 26.2	OT
IC500-0644-008	64	10.0 x 10.0	12.0 x 12.0	-	0.67	29.6 x 29.6	OT
IC51-0644-807	64	10.0 x 10.0	12.0 x 12.0	11.30	-	32.0 x 35.0	CL
IC51-807 AC-15764	64	10.0 x 10.0	13.2 x 13.2	12.00	-	32.0 x 35.0	CL
IC201-0804-014 *-*	80	12.0 x 12.0	14.0 x 14.0	-	0.62	29.0 x 29.0	OT
IC234-0804-011 *	80	12.0 x 12.0	14.0 x 14.0	-	0.45	29.0 x 29.0	OT
IC234-0804-026 *	80	12.0 x 12.0	14.0 x 14.0	-	0.67	31.6 x 31.6	OT
IC357-0804-074	80	12.0 x 12.0	14.0 x 14.0	-	0.6375	29.0 x 29.0	OT
IC357-0804-096	80	12.0 x 12.0	14.0 x 14.0	-	0.6375	29.0 x 29.0	OT
IC51-0804-808	80	12.0 x 12.0	14.0 x 14.0	13.30	-	34.0 x 37.0	CL
IC51-0804-808-2	80	12.0 x 12.0	14.0 x 14.0	13.20	-	34.0 x 37.0	CL
IC51-0804-808-4	80	12.0 x 12.0	14.0 x 14.0	13.40	-	34.0 x 37.0	CL
IC201-1004-008 *-*	100	14.0 x 14.0	16.0 x 16.0	-	0.60	32.2 x 31.0	OT
IC201-1004-043 *	100	14.0 x 14.0	16.0 x 16.0	-	0.45	31.0 x 31.0	OT
IC234-1004-023 *	100	14.0 x 14.0	16.0 x 16.0	-	0.67	33.6 x 33.6	OT
IC357-1004-002	100	14.0 x 14.0	16.0 x 16.0	-	0.50	31.9 x 31.9	OT
IC357-1004-014	100	14.0 x 14.0	16.0 x 16.0	-	0.55	31.9 x 31.9	OT
IC357-1004-053	100	14.0 x 14.0	16.0 x 16.0	-	0.55	31.9 x 31.9	OT
IC402-1004-002*	100	14.0 x 20.0	16.0 x 22.0	-	0.70	29.8 x 23.8	OT
IC500-1004-004	100	14.0 x 14.0	16.0 x 16.0	-	0.68	33.6 x 33.6	OT
IC51-1004-809	100	14.0 x 14.0	16.0 x 16.0	15.30	-	39.0 x 39.0	CL
IC51-1004-809-14	100	14.0 x 14.0	16.0 x 16.0	15.30	-	39.0 x 39.0	CL
IC51-1004-809-2	100	14.0 x 14.0	16.0 x 16.0	15.30	-	39.0 x 39.0	CL
IC51-1004-809-6	100	14.0 x 14.0	16.0 x 16.0	15.30	-	39.0 x 39.0	CL
IC51-809 KS-13929	100	14.0 x 14.0	17.2 x 17.2	15.90	-	39.0 x 39.0	CL
IC234-1204-058 *	120	16.0 x 16.0	18.0 x 18.0	–	0.67	35.6 x 35.6	OT
IC51-1204-1652	120	15.93 x 15.93	17.35 x 17.35	17.60		40.0 x 43.0	CL
IC201-026 KS-13784	128	20.0 x 20.0	22.0 x 22.0	-	0.69	37.0 x 36.7	OT
IC248-1284-007 *-*	128	14.0 x 20.0	16.0 x 22.0	-	0.67	37.4 x 43.4	OT
IC357-1284-033*	128	14.0 x 20.0	22.0 x 22.0	-	1.10	31.0 x 37.0	OT
IC500-1284-007	128	14.0 x 20.0	16.0 x 22.0	-	0.625	33.6 x 39.6	OT
IC51-1284-1433	128	14.0 x 20.0	16.0 x 22.0	15.2x21.2	-	46.0 x 43.0	CL
IC51-1284-1433-10	128	14.0 x 20.0	17.2 x 23.2	16.4x22.4	-	46.0 x 43.0	CL
IC51-1284-1433-19	128	14.0 x 20.0	17.9 x 23.9	16.4x22.4	-	46.0 x 43.0	CL
IC201-1444-026 *-2	144	20.0 x 20.0	22.0 x 22.0	-	0.69	37.0 x 37.0	OT
IC201-1444-034 *	144	20.0 x 20.0	22.0 x 22.0	-	0.65	37.0 x 37.0	OT
IC234-1444-007 *	144	20.0 x 20.0	22.0 x 22.0	-	-		OT
IC234-1444-016 *	144	20.0 x 20.0	22.0 x 22.0	-	0.8370	37.0 x 37.0	OT
IC402-1444-003*	144	20.0 x 20.0	22.0 x 22.0	21.30	0.80	30.0 x 30.0	OT
IC500-1444-002P-2	144	20.0 x 20.0	22.0 x 22.0		0.68	37.0 x 37.0	OT
IC51-1444-1354	144	20.0 x 20.0	22.0 x 22.0	21.30	1.00	43.0 x 47.0	CL
IC51-1444-1354-7	144	20.0 x 20.0	22.0 x 22.0	21.30	0.50	43.0 x 47.0	CL
IC51-1604-1350	160	24.0 x 24.0	26.0 x 26.0	25.30	-	46.0 x 50.0	CL
IC201-1764-033	176	24.0 x 24.0	26.0 x 26.0	-	0.67	40.0 x 46.0	OT
IC234-1764-002 *	176	24.0 x 24.0	26.0 x 26.0	-	1.00	46.0 x 46.0	OT
IC234-1764-005 *	176	24.0 x 24.0	26.0 x 26.0	-	1.00	46.0 x 46.0	OT
IC234-1764-121 *	176	24.0 x 24.0	26.0 x 26.0	-	1.00	40.0 x 46.0	OT
IC357-1764-061	176	24.0 x 24.0	26.0 x 24.0	-	0.615	41.0 x 41.0	OT
IC357-1764-081	176	24.0 x 24.0	26.0 x 24.0	-	0.6375	36.0 x 36.0	OT
IC357-1764-087	176	24.0 x 24.0	26.0 x 24.0	-	0.735	41.0 x 41.0	OT
IC357-1764-094	176	24.0 x 24.0	26.0 x 24.0	-	0.735	41.0 x 41.0	OT
IC51-1764-1505	176	24.0 x 24.0	26.0 x 26.0	25.30	0.90	46.0 x 50.0	CL
IC51-1764-1505-10	176	24.0 x 24.0	26.0 x 26.0	25.30	0.50	46.0 x 50.0	CL
IC51-1764-1505-5	176	24.0 x 24.0	26.0 x 26.0	25.30	0.50	46.0 x 50.0	CL
IC200-2084-009 *-*	208	28.0 x 28.0	31.2 x 31.2	-	1.40	51.2 x 52.2	OT
IC200-2084-010 *-*	208	28.0 x 28.0	30.6 x 30.6	-	1.40	50.6 x 50.6	OT
IC201-2084-001 *-*	208	28.0 x 28.0	30.0 x 30.0	-	1.50	45.0 x 45.0	OT
IC201-2084-029 *	208	28.0 x 28.0	30.6 x 30.6	-	1.67	45.6 x 45.6	OT
IC201-2084-096	208	28.0 x 28.0	30.0 x 30.0	-	0.55	45.0 x 45.0	OT

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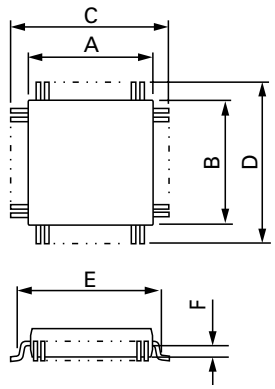
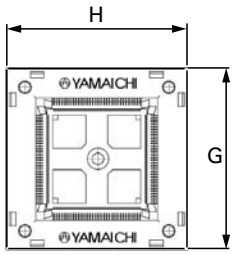
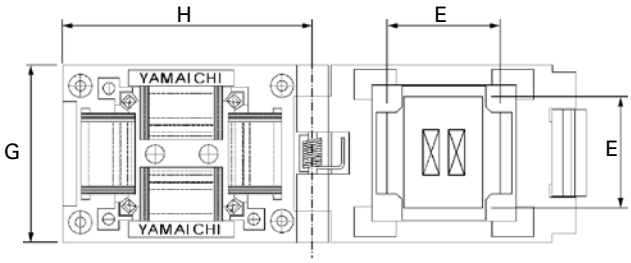
Outline IC Package Dimensions



Outline Open Top Socket Dimensions



Outline Clamshell Socket Dimensions



0.50MM PITCH (CONT'D)

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC357-2084-019P-2	208	28.0 x 28.0	30.6 x 30.6	-	-	45.6 x 45.6	OT
IC51-2084-1052-*	208	28.0 x 28.0	-	-	-	52.0 x 58.0	CL
IC51-2084-1052-1	208	28.0 x 28.0	30.0 x 30.0	29.30	-	52.0 x 58.0	CL
IC51-2084-1052-13	208	28.0 x 28.0	30.6 x 30.6	29.70	-	52.0 x 58.0	CL
IC51-2084-1052-35	208	28.0 x 28.0	31.2 x 31.2	29.95	-	52.0 x 58.0	CL
IC51-2084-1052-36	208	28.0 x 28.0	30.0 x 30.0	29.30	-	52.0 x 58.0	CL
IC51-2084-1052-9	208	28.0 x 28.0	30.6 x 30.6	29.70	-	52.0 x 58.0	CL
IC51-2084-1052-55	208	28.0 x 28.0	30.6 x 30.6	29.95	-	52.0 x 58.0	CL
IC51-2084-1509	208	27.7 x 27.7	31.2 x 31.2	29.80	-	52.0 x 58.0	CL
IC51-2084-1566	208	28.0 x 28.0	31.2 x 31.2	30.30	-	52.0 x 58.0	CL
IC217-2404-007 *	240	32.0 x 32.0	34.6 x 34.6	-	1.75	56.1 x 56.1	OT
IC234-2404-030 *	240	32.0 x 32.0	34.6 x 34.6	-	2.06	51.6 x 51.6	OT
IC51-2404-1655-2	240	32.0 x 32.0	34.6 x 34.6	33.80	-	56.0 x 62.0	CL
IC201-2564-002 *-*-2	256	28.0 x 40.0	30.6 x 40.6	-	1.50	45.6 x 57.6	OT
IC51-2724-1727	272	35.9 x 35.9	37.4 x 37.4	37.60	-	58.0 x 72.0	CL
IC201-3044-004	304	40.0 x 40.0	42.6 x 42.6	-	1.50	57.6 x 57.6	OT
IC51-3044-1471-2	304	39.95 x 39.95	42.6 x 42.6	41.90	-	66.0 x 72.0	CL
IC51-3044-1471-5	304	39.64 x 39.64	42.6 x 42.6	41.90	-	66.0 x 72.0	CL

0.635MM PITCH

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-1004-827	100	22.86 x 22x86	22.35 x 22.35	-	-	47.5 x 34.0	OT
IC211-1324-002 *-*	132	24.10 x 24.10	28.0 x 28.0	-	-	47.4 x 47.4	OT
IC51-1324-828	132	27.94 x 27.94	27.43 x 27.43	-	-	53.5 x 40.0	OT
IC51-1964-1952	196	34.29 x 34.29	58.0 x 58.0	-	-	70.0 x 83.0	OT

0.65MM PITCH

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-0484-652	48	6.0 x 9.0	7.4 x 8.8	7.00	-	34.0 x 34.5	CL
QFP11T052-004 A102221*	52	10.0 x 10.0	13.2 x 13.2	13.30	-	34.0 x 37.0	CL
IC234-0564-084 *	56	10.0 x 10.0	12.8 x 12.8	-	1.50	29.3 x 29.3	OT
IC51-0564-680	56	10.0 x 10.0	13.2 x 13.2	11.80	-	34.0 x 35.5	CL
IC357-0644-077	64	12.0 x 12.0	14.0 x 14.0	-	0.6375	29.0 x 29.0	OT
IC51-0644-1586	64	12.0 x 12.0	15.3 x 15.3	13.90	-	36.0 x 39.0	CL
IC51-0644-1602	64	12.0 x 12.0	14.0 x 14.0	13.10	-	20.0 x 42.0	CL
IC51-0684-734	68	10.0 x 14.0	13.2 x 17.2	11.80 x 15.80	-	37.0 x 41.0	CL
IC201-0804-005 *-*	80	14.0 x 20.0	17.9 x 23.9	-	1.22	32.9 x 38.9	OT
IC201-0804-012 *-*	80	14.0 x 14.0	17.2 x 17.2	-	0.92	29.2 x 32.2	OT

0.65MM PITCH (CONT'D)

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC234-0804-019 *	80	14.0 x 14.0	16.8 x 16.8	-	1.35	32.2 x 32.2	OT
IC357-0804-003	80	14.0 x 14.0	17.2 x 17.2	-	0.50	31.9 x 31.9	OT
IC500-0804-005	80	14.0 x 14.0	16.0 x 16.0	-	1.07	32.0 x 32.2	OT
IC51-0804-711	80	14.0 x 14.0	17.2 x 17.2	15.80	-	37.0 x 41.0	CL
IC51-0804-795	80	14.0 x 14.0	16.0 x 16.0	15.30	-	37.0 x 41.0	CL
IC51-0804-956-2	80	14.0 x 14.0	17.2 x 17.2	16.40	-	34.0 x 42.5	CL
IC51-795 KS-13930	80	14.0 x 14.0	17.2 x 17.2	15.90	-	37.0 x 41.0	CL
QFP11T080-008	80	14.0 x 14.0	16.0 x 16.0	15.30	-	39.0 x 39,5	CL
IC201-1004-016 *-*	100	14.0 x 20.0	17.9 x 23.9	-	1.28	32.9 x 38.9	OT
IC201-1004-028 *	100	14.0 x 20.0	17.2 x 23.2	-	1.20	32.2 x 38.2	OT
IC201-1004-050 *	100	14.0 x 20.0	16.0 x 22.0	-	0.75	31.0 x 37.0	OT
IC234-1004-006 *	100	14.0 x 20.0	16.0 x 22.0	-	0.875	31.0 x 37.0	OT
IC234-1004-008 *	100	14.0 x 20.0	18.15 x 24.15	-	1.33	32.2 x 38.2	OT
IC234-1004-009 *	100	14.0 x 20.0	18.15 x 24.15	-	1.33	32.2 x 38.2	OT
IC234-1004-013 *	100	14.0 x 20.0	17.2 x 23.2	-	1.35	32.2 x 38.2	OT
IC234-1004-014 *	100	14.0 x 20.0	16.0 x 22.0	-	0.67	32.2 x 38.2	OT
IC234-1004-015 *	100	14.0 x 20.0	16.75 x 22.75	-	0.67	32.2 x 38.2	OT
IC234-1004-028 *	100	14.0 x 20.0	18.4 x 24.4	-	1.33	32.2 x 38.2	OT
IC234-1004-033 *	100	14.0 x 20.0	17.9 x 23.9	-	1.33	32.2 x 38.2	OT
IC51-1004-814-1	100	14.0 x 20.0	17.9 x 23.9	17.0 x 23.0	-	34.0 x 42.5	CL
IC51-1004-814-2	100	14.0 x 20.0	17.2 x 23.2	16.4 x 22.4	-	34.0 x 42.5	CL
IC51-1004-814-6	100	14.0 x 20.0	17.2 x 23.2	15.8 x 21.8	-	34.0 x 42.5	CL
IC51-1004-814-7	100	14.0 x 20.0	17.2 x 23.2	16.4 x 22.4	-	34.0 x 42.5	CL
IC51-814 KS-12033	100	14.0 x 20.0	17.2 x 23.2	16.4 x 22.4	-	34.0 x 42.5	CL
IC234-1124-093 *	112	24.0 x 24.0	23.2 x 23.2	-	1.30	38.2 x 38.2	OT
IC500-1124-001	112	20.0 x 20.0	22.0 x 22.0	-	0.68	38.2 x 38.2	OT
IC51-1124-1036-2	112	20.0 x 20.0	23.2 x 23.2	22.30	-	34.0 x 42.5	CL
IC51-1124-1036-YED	112	20.0 x 20.0	22.0 x 22.0	21.00	-	34.0 x 42.5	CL
IC201-006 AC-04462	144	28.0 x 28.0	31.2 x 31.2	-	1.65	46.2 x 46.2	OT
IC51-1444-1014	144	28.0 x 28.0	31.2 x 31.2	30.40	-	44.0 x 57.0	CL
IC51-1444-1014-3	144	28.0 x 28.0	31.2 x 31.2	30.40	-	44.0 x 57.0	CL
IC201-1604-006 *-*	160	28.0 x 28.0	31.2 x 31.2	-	1.65	46.2 x 46.2	OT
IC234-1604-018 *	160	27.9 x 27.9	32.0 x 32.0	-	1.48	47.6 x 47.6	OT
IC234-1604-032 *	160	28.0 x 28.0	30.6 x 30.6	-	1.66	47.6 x 47.6	OT
IC51-1604-845-1	160	28.0 x 28.0	31.6 x 31.6	30.60	-	44.0 x 57.0	CL
IC51-1604-845-2	160	28.0 x 28.0	31.6 x 31.6	30.60	-	44.0 x 57.0	CL
IC51-1604-845-4	160	28.0 x 28.0	31.2 x 31.2	30.20	-	44.0 x 57.0	CL
IC51-1604-845-8	160	28.0 x 28.0	31.2 x 31.2	30.20	-	44.0 x 57.0	CL
IC51-1604-926	160	29.0 x 29.0	30.2 x 31.4	30.40	-	44.0 x 57.0	CL

0.80MM PITCH

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC234-0324-044 *	32	7.0 x 7.0	9.0 x 9.0	-	0.67	26.6 x 26.6	OT
IC51-0324-1498	32	7.0 x 7.0	9.0 x 9.0	8.4	-	30.0 x 35.5	CL
IC51-0324-354	32	7.4 x 7.4	9.8 x 9.8	8.4	-	30.0 x 37.5	CL
IC234-0444-037 *	44	10.0 x 10.0	12.0 x 12.0	-	0.45	29.6 x 29.6	OT
IC234-0444-054 *	44	9.95 x 9.95	12.8 x 12.8	-	1.35	29.6 x 29.5	OT
IC248-0444-001 *	44	10.0 x 10.0	13.2 x 13.2	-	0.80	27.0 x 27.0	OT
IC51-0444-1195-3	44	10.0 x 10.0	12.6 x 12.6	11.5	-	40.0 x 40.0	CL
IC51-0444-467	44	10.0 x 10.0	13.9 x 13.9	11.5	-	40.0 x 40.0	CL
QFP11T044-001	44	10.0 x 10.0	12.0 x 12.0	11.3	-	32.0 x 35.0	CL
IC51-0444-798	44	10.0 x 10.0	13.9 x 13.9	12.9	-	40.0 x 40.0	CL
IC51-0444-825	44	10.0 x 10.0	12.6 x 12.6	11.8	-	40.0 x 40.0	CL
IC51-467.AC-15687	44	10.0 x 10.0	12.0 x 12.0	11.6	-	37.5 x 37.5	CL
IC51-467.KS-11787	44	10.0 x 10.0	12.0 x 12.0	11.6	-	37.5 x 37.5	CL
IC51-467.KS-11247	44	10.0 x 10.0	13.2 x 13.2	12.1	-	40.0 x 40.0	CL
IC51-081-KS-14028	48	12.0 x 12.0	15.3 x 15.3	14.0	-	36.0 x 39.0	CL

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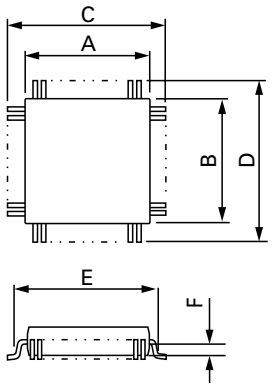
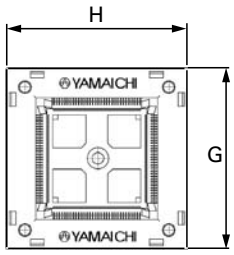
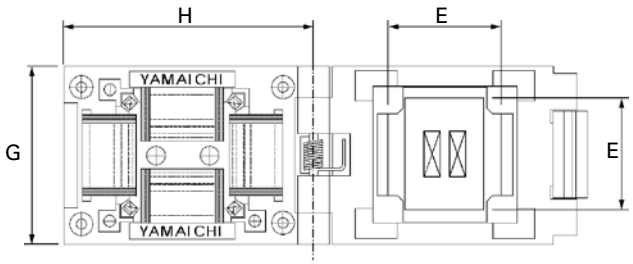
Outline IC Package Dimensions



Outline Open Top Socket Dimensions



Outline Clamshell Socket Dimensions



0.80MM PITCH (CONT'D)

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-0564-924	56	10.0 x 14.0	13.2 x 1 7.2	11.8 x 15.8	-	37.0 x 41.0	CL
IC51-0604-361	60	16.0 x 16.0	18.3 x 18.3	16.5	-	37.0 x 44.0	CL
IC51-0604-468	60	14.0 x 14.0	17.2 x 17.2	15.8	-	38.0 x 43.0	CL
IC234-0644-024 *	64	14.0 x 14.0	16.8 x 16.8	-	1.40	32.2 x 32.2	OT
IC51-0644-1240-2	64	14.0 x 14.0	16.5 x 16.5	15.0	-	42.5 x 34.0	CL
IC51-0644-692-*	64	14.0 x 14.0	-	-	-	22.0 x 26.0	CL
IC51-0644-824-1	64	14.0 x 14.0	17.2 x 17.2	15.8	-	30.0 x 42.5	CL
IC51-0644-824-2	64	14.0 x 14.0	17.9 x 17.9	16.7	-	30.0 x4 2.5	CL
IC51-0644-824-3	64	14.0 x 14.0	16.2 x 16.2	15.4	-	30.0 x4 2.5	CL
IC51-0644-824-5	64	14.0 x 14.0	16.0 x 16.0	15.2	-	30.0 x 42.5	CL
IC218-0724-001 *-*	72	13.2 x 18.0	18.8 x 23.6	-	0.90	31.8 x 36.6	OT
IC51-0724-698	72	16.0 x 20.0	18.2 x 23.1	16.6 x 21.5	-	36.0 x 44.5	CL
IC201-0804-032 *	80	14.0 x 20.0	17.2 x 23.2	-	-	38.2 x 38.2	OT
IC218-0804-002 *-*	80	14.0 x 20.0	19.2 x 25.2		0.95	31.0 x 38.2	OT
IC218-0804-007 *	80	14.0 x 14.0	16.0 x 16.0	-	-	32.2 x 29.2	OT
IC234-0804-001 *	80	14.0 x 20.0	19.1 x 25.1	-	1.60	32.2 x 32.2	OT
IC51-0804-819-1	80	14.0 x 20.0	17.9 x 23.9	16.9 x 22.9	-	34.0 x 42.5	CL
IC51-0804-819-2	80	14.0 x 20.0	17.6 x 23.6	16.3 x 22.3	-	34.0 x 42.5	CL
IC51-0804-819-6	80	14.0 x 20.0	16.8 x 22.8	15.6 x 21.6	-	34.0 x 42.5	CL
IC51-0804-819-8	80	14.0 x 20.0	17.2 x 23.8	16.9 x 22.9	-	24.0 x 42.5	CL
IC51-819.KS-12720	80	14.0 x 20.0	17.2 x 23.2	16.0 x 22.0		34.0 x 42.5	CL
IC234-1204-017 *	120	28.0 x 28.0	31.2 x 31.2	-	1.70	46.2 x 46.2	OT
IC234-1204-065 *	120	28.0 x 28.0	32.8 x 32.8	-	1.63	48.4 x 48.4	OT
IC51-1204-1497	120	28.0 x 28.0	29.7 x 29.7	30.5	-	60.0 x 58.0	CL
IC51-1204-1646	120	28.0 x 28.0	31.2 x 31.2	30.8	-	57.0 x 30.6	CL
IC200-1284-001 *-*	128	28.0 x 28.0	32.0 x 32.0	-	1.50	52.0 x 52.0	OT
IC51-1284-844-1	128	28.0 x 28.0	31.2 x 31.2	30.6	-	44.0 x 57.0	CL
IC234-017 AC-11315	128	28.0 x 28.0	31.2 x 31.2	-	1.70	34.0 x 34.0	OT
IC51-1284-617	128	29.0 x 29.0	31.2 x 31.2	30.60	-	44.0 x 57.0	CL
IC51-1284-976-*	128	28.0 x 28.0	31.2 x 31.2	30.6	-	44.0 x 57.0	CL

1.00MM PITCH

Part Number	Pin Count	IC Body A x B	IC Tip-to-Tip C X D	Parallel Clamp E	1/2 IC Height F	Socket Dim. G x H	Type
IC51-0444-615	44	14.0 x 14.0	17.2 x 17.2	15.80		34.0 x 42.5	CL
IC51-0444-621	44	14.0 x 14.0	17.9 x 17.9	17.00		34.0 x 42.5	CL
IC51-621 KS-8966	44	14.0 x 14.0	17.9 x 17.9	17.00		34.0 x 42.5	CL
IC51-0604-497-2	60	16.0 x 20.0	17.9 x 23.9	17.0 x 23.0		34.0 x 42.5	CL
IC201-0644-019 *-*	64	14.0 x 20.0	17.9 x 23.9	-	1.22	32.9 x 38.9	OT
IC51-0644-472	64	14.0 x 20.0	19.6 x 23.6	16.2 x 22.2		34.0 x 42.5	CL
IC51-0644-820-1	64	14.0 x 20.0	18.7 x 24.7	17.0 x 23.0		32.9 x 38.9	CL
IC51-0644-820-2	64	14.0 x 20.0	17.6 x 23.6	16.3 x 22.3		34.0 x 42.5	CL
IC51-0644-820-3	64	14.0 x 20.0	18.0 x 24.0	16.9 x 22.9		34.0 x 42.5	CL
IC51-0644-820-4	64	14.0 x 20.0	17.2 x 23.2	15.8 x 21.8		34.0 x 42.5	CL
IC51-820-2 KS-9376	64	14.0 x 20.0	17.2 x 23.2	17.0 x 23.0		34.0 x 42.5	CL

SPECIFICATIONS

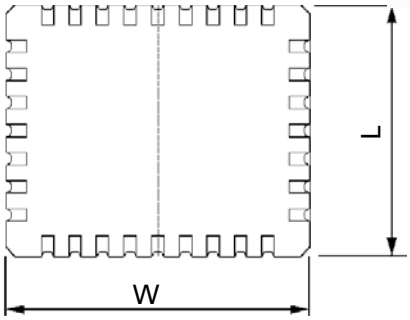
Insulation Resistance:	10,000MΩ min. at 100V DC
Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Resistance:	1A max.
Operating Temp.Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.

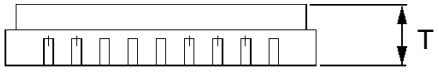
PART NUMBER

IC53 - 044 4 - 306

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number

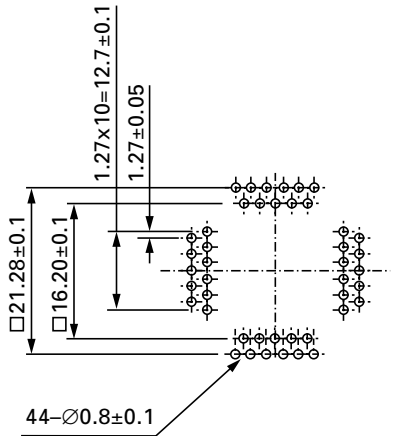
Futher LCC versions are also available. Please contact Yamaichi for more information



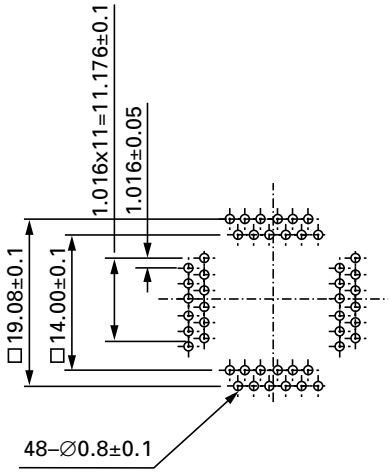


RECOMMENDED PCB LAYOUTS

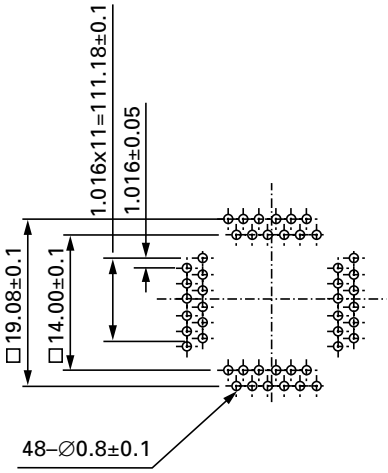
44 pins IC53-0444-306



44 pins IC53-0484-100



44 pins IC51-0684-498
IC-498 AC.17408



1.016MM PITCH (40MIL)

Part Number	Pin Count	IC Dimensions			Contact Position	Socket Material
		W	L	T		
IC53-0484-100	48	14.03 ~ 14.52	14.03 ~ 14.52	1.52 ~ 2.12	13.2 x 13.2	PSF

1.27MM PITCH

Part Number	Pin Count	IC Dimensions			Contact Position	Socket Material
		W	L	T		
IC53-0444-306	44	16.31 ~ 16.71	16.31 ~ 16.71	2.50 ~ 3.20	15.4 ~ 15.4	PES
IC51-0684-498	68	23.88 ~ 24.38	23.88 ~ 24.38	1.27 ~ 1.77	23.0 ~ 23.0	PES
IC51-498 AC-17402	68	23.88 ~ 24.38	23.88 ~ 24.38	2.27 ~ 2.80	23.0 ~ 23.0	PES

SERIES NP437 / NP481 / IC511 / IC539 (OPEN TOP AND CLAMSHELL - CMT) - 0.40MM PITCH BGA / CSP / LGA

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	58.8mN (6gf) per pin approx.
Actuation Force:	29.6N (3kg)

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Compression mount 0.4 to 0.6mm fan-out type
- Depopulation versions available

PART NUMBER DETAILS

Please Contact Yamaichi

SERIES IC398 / IC409 / NP504 / (OPEN TOP AND CLAMSHELL - CMT) - 0.50MM PITCH BGA / CSP / LGA

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	58.8mN (6gf) per pin approx.
Actuation Force:	29.6N (3kg)

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Compressed Mount Technology (CMT)
- Depopulation versions available

PART NUMBER DETAILS

Please Contact Yamaichi

SERIES NP383 (OPEN TOP - TH) - 0.50MM PITCH BGA / CSP

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	10gf per pin approx.
Operating Force:	2.2kg ±0.5

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- 2-point Tweezer Style contact system

PART NUMBER

NP383 - *** - 09 - *

- Series No.
- No. of Contact Pins
- Design Number
- Positioning Pin Identification:
  N = Without Positioning
  P = With Postioning Pin

SERIES IC280 (CLAMSHELL - TH) - 0.65MM TO 1.00MM PITCH BGA / CSP / LGA

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute for 1.00mmpitch 500V AC for 1 minute for 0.80mm pitch 100V AC for 1 minute for 0.75mm pitch
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–40°C to +150°C
Contact Force:	15g to 35g per pin within contact travel distance between 0.2 to 0.5mm
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC280 - 696 - 05 - (.AC...)

- Series No.
- No. of Contact Pins
- Design Number
- For Pin Depopulation and Custom Designed Sockets

FEATURES

- V-shape contact structure to lower the damage of coplanarity of solder balls
- Available in 3 pitch sizes and various depopulation versions, please contact Yamaichi for further available pin counts or custom sockets

SERIES NP291 (OPEN TOP - CMT) - 0.75MM PITCH BGA / CSP

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Contact Force:	15g per pin approx.
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Contacting structure to nip the sides of solder balls to lower damages of coplanarity of solder balls

PART NUMBER

NP291 - 048 - 05 - 3 - (G4-BF) - *

- Series No.
- No. of Contact Pins
- Design Number
- G = Contact Plating (Gold)
4 = Contact Style (180° TH)
- Contact Area - Au (0.3µm min. over Ni)
Terminal Area - Au (0.5µm min. over Ni)
- Positioning Pin Identification::
No Mark = Without Positioning Pin "A" and " B"
With Mark = For Various Postioning Pin Options
(Please Contact Yamaichi)

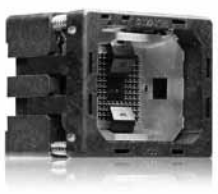
SERIES NP351 (OPEN TOP - TH) - 0.80MM PTCH BGA / CSP / LGA

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +150°C
Contact Force:	15g per pin approx.
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



FEATURES

- Self contacting structure without upper pressing force (ZIF)
- 2-point Tweezer Style contact system

PART NUMBER

NP351 - 120 - 14 - (H) - * - (*)

- Series No.
- No. of Contact Pins
- Design Number
- H = Also for Handler Use
- Positioning Pin Options

		Pos. pin "A"	Pos. Pin "B"
1	=	With	With
2	=	With	Without
3	=	Without	With
4	=	Without	Without

- Contact Terminal Length and Form

cont'd next page

SERIES NP352 / NP483 / NP486 (OPEN TOP - CMT) - 1.00MM PITCH BGA / CSP

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Contact Force:	15g per pin approx.
Mating Cycles:	10,000 insertions

PART NUMBER

NP352 - 560 - 09 - * - *

- Series No.
- No. of Contact Pins
- Design Number
- Mark for Positioning Pin Options (Contact Yamaichi)
- Contact Terminal Lenght and Form

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Secure package alignment due to self contacting structure without upper pressing force(ZIF)
- Contacting structure to nip the sides of solder balls to lower damages of coplanarity of solder balls

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SERIES NP276 (OPEN TOP - TH) - 1.27MM PITCH BGA / CSP

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 100V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Contact Force:	15g per pin approx.
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Open top type sockets for BGA packages
- Secure package alignment due to self contacting structure without upper pressing force (ZIF)
- Contacting structure to nip the sides of solder balls to lower damages of coplanarity of solder balls

PART NUMBER

NP276 - 1105 22 - * - (*)

- Series No.
- No. of Contact Pins (.AC are depopulated base sockets
- Design No.
- *Positioning Pin Options

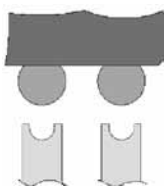
	Pos. Pin 'A'	Pos. Pin 'B'
1 =	With	With
2 =	With	Without
3 =	Without	With
4 =	Without	Without

- Contact Terminal Length and Form

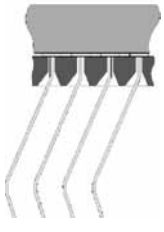
* for position pin A or B please contact Yamaichi

CONTACTING TYPES FOR ALL SERIES

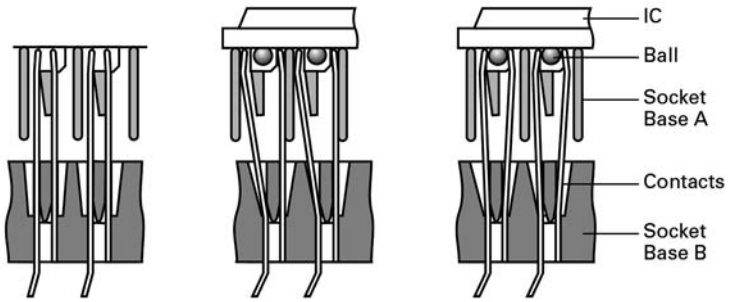
Since the solder balls are touched by two contacts on each side, the solder ball damage can be minimized; additional features are low actuation force and compact socket size



U-Shape Style (BGA)

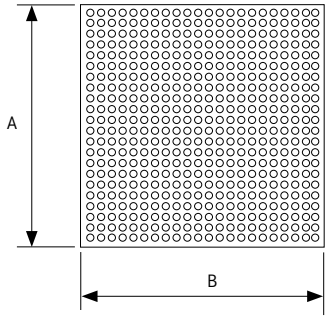


Bow Style (LGA)

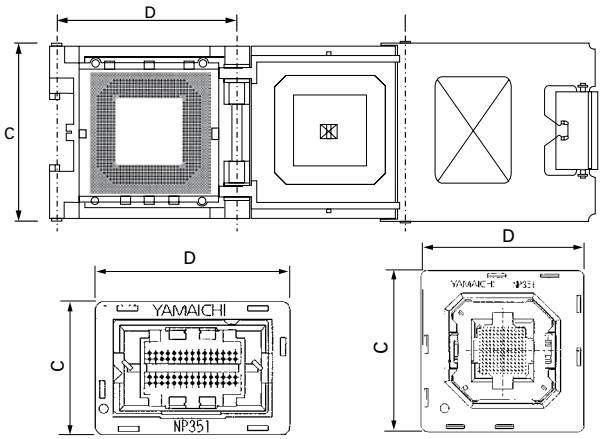


Yamaichi‘s 2-point Tweezer Style Contact

TYPICAL IC PACKAGE SIZE



OUTLINE SOCKET DIMENSIONS



0.40MM PITCH (BASE SOCKETS)

Part Number	Pin Count	Grid Size	Package Size A x B	Socket Size C x D	Lid Type
IC511-484	484 (max.)	up to 22 x 22	up to 11.0 x 11.0	26.0 x 37.0	CL
NP437-001	484 (max.)	up to 22 x 22	up to 10.0 x 10.0	25.0 x 38.0	OT
NP481-729	729 (max.)	up to 27 x 27	up to 11.0 x 11.0	38.0 x 40.0	OT
IC511-784	784 (max.)	up to 28 x 28	up to 12.0 x 12.0	33.0 x 40.0	CL
IC539-1225	1024 (max.)	up to 32 x 32	up to 14.0 x 14.0	49.0 x 56.5	CL
NP481-1225	1024 (max.)	up to 32 x 32	up to 14.0 x 14.0	45.0 x 45.0	OT

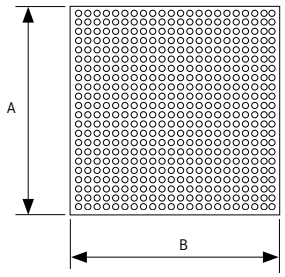
0.40MM PITCH

Part Number	Pin Count	Grid Size	Package Size A x B	Socket Size C x D	Lid Type
NP437-048-024	48	8 x 8	4.0 x 4.0	25.0 x 38.0	OT
NP481-064-012	64	8 x 8	4.0 x 4.0	38.0 x 40.0	OT
NP437-065-041	65	9 x 9	4.0 x 4.0	25.0 x 38.0	OT
NP437-112-026	112	11 x 11	5.0 x 5.0	25.0 x 38.0	OT
NP437-124-031	124	12 x 12	5.0 x 5.0	25.0 x 38.0	OT
NP481-168-040	168	13 x 13	6.0 x 6.0	38.0 x 40.0	OT
NP437-196-017	196	14 x 14	6.0 x 6.0	25.0 x 38.0	OT
NP437-256-050	256	16 x 16	7.0 x 7.0	25.0 x 38.0	OT
NP437-260-038	260	18 x 18	8.0 x 8.0	25.0 x 38.0	OT
NP437-296-021	296	20 x 20	9.0 x 9.0	25.0 x 38.0	OT
NP481-308-039	308	18 x 18	8.0 x 8.0	38.0 x 40.0	OT
NP481-424-019	424	24 x 24	10.0 x 10.0	38.0 x 40.0	OT
NP481-454-033	454	23 x 23	10.0 x 10.0	38.0 x 40.0	OT
NP481-477-036	477	26 x 26	11.0 x 11.0	38.0 x 40.0	OT
NP481-415-037	415	25 x 25	11.0 x 11.0	38.0 x 40.0	OT
IC539-516-003	516	29 x 29	12.0 x 12.0	49.0 x 56.5	CL
IC511-515-006	515	28 x 28	12.0 x 12.0	33.0 x 40.0	CL
NP481-560-018	560	27 x 27	12.0 x 12.0	38.0 x 40.0	OT
IC539-683-007	683	33 x 33	14.0 x 14.0	49.0 x 56.5	CL

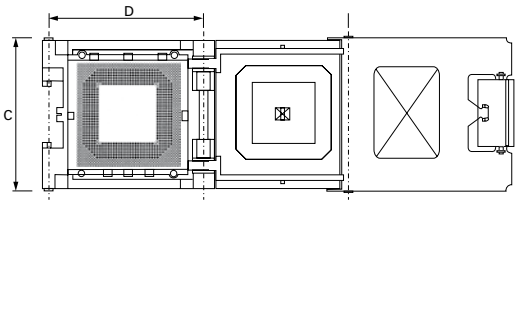
0.50MM PITCH

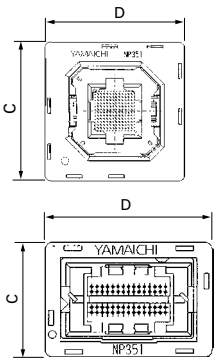
Part Number	Pin Count	Grid Size	Package Size A x B	Socket Size C x D	Lid Type
IC398-0049-278	49	7 x 7	4.0 x 4.0	25.0 x 38.0	OT
IC398-0064-279	64	8 x 8	5.0 x 5.0	25.0 x 38.0	OT
IC398-0081-253	81	9 x 9	5.0 x 5.0	25.0 x 38.0	OT
IC398-0084-222	84	12 x 12	6.0 x 6.0	25.0 x 32.0	OT
IC398-0084-037	84	10 x 10	6.0 x 6.0	25.0 x 38.0	OT
IC409-084-052	84	10 x 10	6.0 x 6.0	26.0 x 37.0	CL
NP383-100-247	100	10 x10	6.0 x 6.0	19.5 x 26.0	OT
IC409-120-043	120	11 x 11	6.0 x 6.0	26.0 x 37.0	CL
IC398-0121-228	121	11 x 11	6.0 x 6.0	25.0 x 38.0	OT
IC398-0132-144	132	14 x 14	8.0 x 8.0	25.0 x 38.0	OT
IC398-0144-100	144	12 x 12	7.0 x 7.0	25.0 x 38.0	OT

TYPICAL IC PACKAGE SIZE



OUTLINE SOCKET DIMENSIONS





0.50MM PITCH (CONT'D)

Part Number	Pin Count	Grid Size	Package Size A x B	Socket Size C x D	Lid Type
IC398-0144-258	144	12 x 12	7.0 x 7.0	25.0 x 32.0	OT
IC398-0144-223	144	14 x 14	8.0 x 8.0	25.0 x 32.0	OT
IC398-0148-276	148	13 x 13	7.0 x 7.0	25.0 x 38.0	OT
NP383-153-242	153	14 x14	12.0 x 16.0	28.0 x 32.0	OT
NP383-168-255	168	23 x 23	12.0 x 12.0	22.0 x 26.0	OT
IC398-0169-269	169	13 x 13	7.0 x 7.0	25.0 x 32.0	OT
NP383-18010-*	180	10 x 18	11.0 x 12.5	19.5 x 26.0	OT
IC398-0189-231	189	15 x 15	8.0 x 8.0	25.0 x 38.0	OT
IC398-0191-043	191	16 x 16	9.0 x 9.0	25.0 x 38.0	OT
NP383-200-260	200	27 x 27	14.0 x 14.0	33.0 x 33.0	OT
IC409-216-058	216	16 x 16	8.0 x 8.0	26.0 x 37.0	CL
IC398-0233-126	233	17 x 17	9.0 x 9.0	25.0 x 38.0	OT
IC398-0241-198	241	17 x 17	10.0 x 10.0	25.0 x 32.0	OT
IC398-0260-192	260	18 x 18	10.0 x 10.0	25.0 x 32.0	OT
NP383-26006-*-*	260	18 x 18	10.0 x 10.0	36.0 x 36.0	OT
IC398-0268-275	268	18 x 18	10.0 x 10.0	25.0 x 38.0	OT
NP383-28804-*	288	18 x 18	10.0 x 10.0	36.0 x 36.0	OT
IC398-0293-088	293	19 x 19	10.0 x 10.0	25.0 x 38.0	OT
IC398-0293-120	293	21 x 21	12.0 x 12.0	25.0 x 38.0	OT
IC409-293-039	293	19 x 19	12.0 x 12.0	26.0 x 37.0	CL
IC398-0297-065	297	21 x 21	11.0 x 11.0	25.0 x 38.0	OT
IC398-0289-106	289	21 x 21	13.0 x 13.0	27.0 x 41.0	OT
IC398-0289-221	289	23 x 23	12.0 x 12.0	36.0 x 40.0	OT
IC398-0343-105	343	23 x 23	12.0 x 12.0	45.0 x 45.0	OT
IC398-0353-098	353	26 x 26	14.0 x 14.0	45.0 x 45.0	OT
NP383-361-144	361	19 x 19	10.0 x 10.0	28.0 x 28.0	OT
IC409-401-073	401	23 x 23	12.0 x 12.0	33.0 x 47.0	CL
IC398-0405-211	405	22 x 22	12.0 x 12.0	27.0 x 41.0	OT
IC398-0420-182	420	25 x 25	13.0 x 13.0	45.0 x 45.0	OT
IC398-0468-218	468	28 x 28	15.0 x 15.0	45.0 x 45.0	OT
NP383-484-195	484	22 x 22	12.0 x 12.0	33.0 x 33.0	OT
NP383-624-114	624	32 x 32	17.0 x 17.0	41.0 x 41.0	OT
NP383-84107-*	841	29 x 29	15.0 x 15.0	33.0 x 33.0	OT

0.65MM PITCH

Part Number	Pin Count	Grid Size	Package Size A x B	Socket Dimensions C x D	Lid Type
NP291-04805-3*.AC-16001	36	8 x 6	8.0 x 6.0	64.0 x 64.0	OT
NP291-04808-2-G4-BF-P	48	6 x 8	7.58 x 9.81	28.3 x 27.3	OT
NP291-04812-2-G4-BF-P	48	6 x 8	6.50 x 7.91	28.3 x 27.3	OT

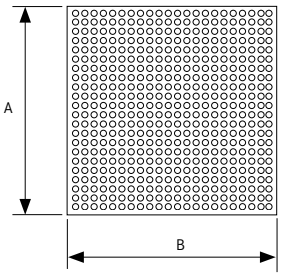
0.75MM PITCH

Part Number	Pin Count	Grid Size	Package Size A x B	Socket Dimensions C x D	Lid Type
NP291-04842-2	48	6 x 8	7.0 x 7.0	20.0 x 20.0	OT
NP291-04843	48	6 x 8	6.0 x 8.0	20.0 x 20.0	OT
NP291-04843-2	48	6 x 8	6.0 x 8.0	20.0 x 20.0	OT
NP291-04843-3	48	6 x 8	6 .0x 8.0	20.0 x 20.0	OT
NP291-04846	48	6 x 8	6.5 x 6.5	20.0 x 26.0	OT
NP291-04848-2	48	6 x 8	8 .0 x 10.0	20.0 x 20.0	OT
NP291-04848-3	48	6 x 8	8.0 x 10.0	20.0 x 20.0	OT
NP291-04852-P	48	6 x 8	12.0 x 9.0	26.0 x 20.0	OT
NP291-04852-P-2	48	6 x 8	12.0 x 9.0	26.0 x 20.0	OT
NP291-04855	48	6 x 8	6.0 x 10.0	20.0 x 20.0	OT
NP291-04879-2	48	6 x 8	6.0 x 10	20.0 x 20.0	OT
NP291-05647-P	56	8 x 7	7.0 x 12	33.9 x 24.4	OT
NP291-05670-P-1	56	7 x 8	10.0 x 6,5	26.0 x 20.0	OT
NP291-05688-1	56	7 x 8	9.0 x 7.70	26.0 x 20.0	OT
NP291-07210-2.AC-08338	72	8 x 9	7.67 x 16.37	28.4 x 33.9	OT
NP291-07210-2-G4-BF-P	72	8 x 9	7.67 x 16.37	28.4 x 33.9	OT
NP291-16803-1.AC-08229	168	14 x 14	12.0 x 12.0	33.0 x 33.0	OT
NP291-192-092-1	192	14 x 14	12.0 x 12.0	33.0 x 33.0	OT
IC280-225	225	15 x 15	13 x 13	28.4 x 31.3.0	OT
NP291-28807-1	288	22 x 22	18.0 x 18.0	40.0 x 40.0	OT
IC280-324	324	18 x 18	16 x 16	31.6 x 34.6	OT

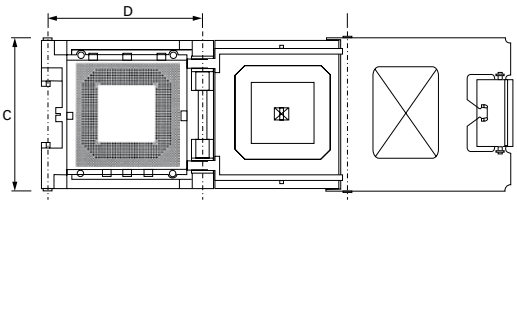
0.80MM PITCH

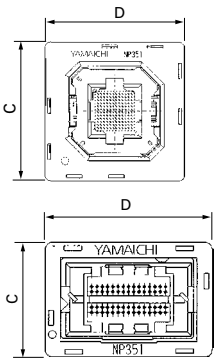
Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP351-048-105-*	48	8 x 12	10.95 x 11.95	36 x 36	OT
NP351-048-146-*	48	6 x 8	10 x 11	33 x 33	OT
NP351-048-147-*	48	7 x 8	7 x 11	33 x 33	OT
NP351-048-155-"	48	8 x 8	7.95 x 8.95	36 x 36	OT
NP351-048-165	48	9 x 8	5.95 x 8.95	18 x 22	OT
NP351-048-166-*	48	10 x 8	7 x 7	17.6 x 25.4	OT
NP351-048-216	48	11 x 8	7 x 11	18 x 22	OT
NP351-048-270	48	12 x 8	10 x 11	18 x 22	OT
NP351-048-284	48	13 x 8	6.40 x 7.80	18 x 22	OT
NP351-048-292	48	14 x 8	8 x 10	18 x 22	OT
NP351-056-100	56	8 x 8	9 x 12	18 x 22	OT
NP351-056-104-*	56	10 x 12	7.95 x 11.60	33 x 33	OT
NP351-056-158-*	56	8 x 8	7 x 11	33 x 33	OT
NP351-056-172-1	56	8 x 8	11 x 12	33 x 33	OT
NP351-056-176-1	56	8 x 8	11 x 12	33 x 33	OT
NP351-056-178-1	56	10 x 12	8.0 x 11.6	17.6 x 25.4	OT
NP351-056-219	56	8 x 8	7.0 x 11.0	18 x 22	OT
NP351-056-294	56	8 x 8	8.95	18 x 22	OT
NP351-05673-*	56	8 x 10	8.95	33 x 33	OT
NP351-06094	60	6 x 15	7.83 x14.76	17.6 x 25.4	OT
NP351-09663 AC-17413	61	10 x 10	9 x 9	36 x 36	OT
NP351-064-148	64	8 x 8	8 x 8	40 x 40	OT
NP351-064-287-*	64	8 x 8	7 x 7	32 x 32	OT
NP351-06444-*	64	8 x 8	8 x 8	36 x 36	OT
NP351-09663 A101115-001	64	10 x 10	9 x 9	36 x 36	OT
NP351-05672-* AC-28445	66	8 x 12	8 x 11	33 x 33	OT
NP351-069-129	69	10 x 10	8 x 11	17.6 x 25.4	OT
NP351-072-174-*	72	8 x 12	8 x 12	17.6 x 25.4	OT
NP351-07296	72	8 x 12	8 x 11	17.6 x 25.4	OT
NP351-05672-* AC-27559	73	10 x 12	8 x 11	33 x 33	OT
NP351-05672-* AC-21998	79	10 x 12	7.95 x 10.95	33 x 33	OT
NP351-080-128	80	9 x 9	8 x 8	18 x 22	OT
NP351-081-169	81	9 x 8	8 x 8	18 x 22	OT
NP351-084-187-1	84	9 x 10	10.95 x 11.95	36 x 36	OT
NP351-09663-*	96	10 x 10	9 x 9	36 x 36	OT
NP351-104 A101033-001	96	8 x 12	7.95 x 11.60	36 x 36	OT

TYPICAL IC PACKAGE SIZE



OUTLINE SOCKET DIMENSIONS





0.80MM PITCH (CONT'D)

Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP351-099-360	99	10 x 10	9 x 12	18 x 22	OT
NP351-206 A100882-00*	100	11 x 11	10 x 10	36 x 36	OT
NP351-09663 A100331-001	100	10 x 10	9 x 9	36 x 36	OT
NP351-10889-*-*	108	12 x 12	11 x 11	36 x 36	OT
NP351-11215-1	112	11 x 11	10 x 10	36 x 36	OT
NP351-11230-*	112	11 x 11	10 x 10	33 x 33	OT
NP351-113-277-*-*	113	11 x 11	10 x 10	36 x 36	OT
NP351-116-* AC-20619	121	11 x 11	10 x 10	36 x 36	OT
NP351-121-206-*	121	11 x 11	10 x 10	36 x 36	OT
NP351-12845-*	128	12 x 12	11 x 11	36 x 36	OT
NP351-128-200-1	128	12 x 12	11 x 11	20 x 24	OT
NP351-144-217-*	144	12 x 12	12 x 12	36 x 36	OT
NP351-14422-*	144	13 x 13	12 x 12	36 x 36	OT
NP351-14429-*	144	13 x 13	12 x 12	33 x 33	OT
NP351-15760-3-1	157	16 x 16	14 x14	40 x 40	OT
NP351-132-*-* AC-27365	160	14 x 14	12 x 12	38 x 38	OT
NP351-132-*-* AC-28179	160	14 x 14	12 x 12	40 x 40	OT
NP351-16092-3-1 AC-17761	161	14 x 14	13 x13	40 x 40	OT
IC280-169-127	169	13 x 13	12 x 12	28.40 x 31.35	CL
NP351-17635-*	176	15 x 15	13 x13	38 x 38	OT
NP351-20881 AC-14017	176	17 x 17	15 x 15	38 x 38	OT
NP351-177-115-*	177	14 x 14	13 x13	38 x 38	OT
NP351-18464-*-1 AC-20591	179	14 x 14	12 x 12	40 x 40	OT
NP351-180-139-*	180	14 x 14	12 x 12	40 x 40	OT
NP351-18134-* AC-23537	180	14 x 14	13 x13	40 x 40	OT
NP351-18134-*	181	14 x 14	13 x13	40 x 40	OT
NP351-184132-*-*	184	14 x 14	12 x 12	40 x 40	OT
NP351-18464-1-1	184	14 x 14	12 x 12	40 x 40	OT
NP351-19219-*	192	16 x 16	14 x 14	38 x 38	OT
NP351-19602-1	196	14 x 14	12 x 12	33 x 33	OT
IC280-196-126	196	14 x 14	12 x 12	28.40 x 31.35	CS
NP351-20881-1-1	208	17 x 17	15 x 15	40 x 40	OT
NP351-20890-*-*	208	17 x 17	15 x 15	40 x 40	OT
NP351-20897-*	208	17 x 17	15 x 15	40 x 40	OT
NP351-20897-* AC-23539	208	17 x 17	15 x 15	40 x 40	OT
NP351-20897-1 AC-24732	208	17 x 17	15 x 15	40 x 40	OT
NP351-212-207-3-1	212	15 x 15	13 x13	40 x 40	OT
NP351-21653-3	216	21 x 21	18 x 18	47 x 47	OT
NP351-22405-1	224	18 x 18	16 x 16	38 x 38	OT
NP351-224-134-1-1	224	18 x 18	16 x 16	40 x 40	OT
NP351-135 A101118-001	225	15 x 15	13 x13	38 x 38	OT
NP351-240-195-1	240	17 x 17	15 x 15	40 x 40	OT
NP351-19219 A100363-001	256	16 x 16	14 x 14	38 x 38	OT
IC280-256-211	256	16 x 16	13 x 13	38.80 x 45.25	DL
NP351-264-140-1	264	17 x 17	15 x 15	40 x 40	OT
NP351-26457-*	264	25 x 25	21 x 21	47 x 47	OT
NP351-281-234-1	281	17 x 17	15 x 15	40 x 40	OT
NP351-344 A101016-001	288	19 x 19	16 x 16	39 x 39	OT
NP351-289-191-1	289	17 x 17	15 x 15	40 x 40	OT

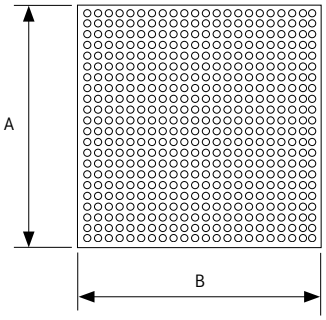
0.80MM PITCH (CONT'D)

Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP351-289-191	292	20 x 20	17 x 17	40 x 40	OT
NP351-30487-*-*	304	22 x 22	19 x 19	47 x 47	OT
NP351-34031-*	340	22 x 22	20 x 20	47 x 47	OT
NP351-35243-*	352	26 x 26	23 x 23	47 x 47	OT
NP351-400-594-1	400	20 x 20	17 x 17	47 x 47	OT
NP351-532-83-1	532	26 x 26	23 x 23	47 x 47	OT
NP351-532-523	532	25 x 25	23 x 23	40 x 40	OT
NP351-548-352	548	26 x 26	23 x 23	47 x 47	OT
NP351-625-635	625	25 x 25	21 x 21	40 x 40	OT
NP351-676-659	676	26 x 26	23 x 23	40 x 40	OT
IC280-72919	729	13 x 13	23 x 23	46.8 x 47.6	DL

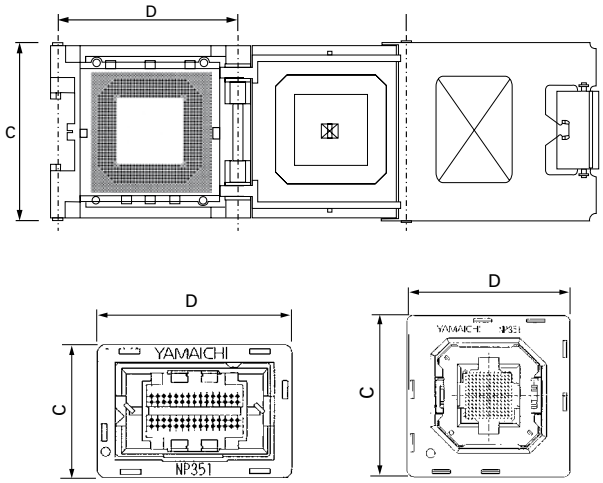
1.00MM PITCH

Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP352-04811	48	6 x 8	10 x 14	24.4 x 28.0	OT
NP352-04813	48	6 x 8	11 x 14	24.4 x 28.0	OT
NP352-100-220	52	8 x 11	12 x 18	26,0 x 22,4	OT
NP352-165-109-1	165	11 x 15	13 x 15	23,6 x 29,9	OT
NP352-165-137	165	11 x 15	15 x 17	23,6 x 29,9	OT
NP352-196-125	196	14 x 14	15 x 15	31,4 x 34,0	OT
NP352-208-200	208	16 x 16	17 x 17	39.0 x 39.0	OT
NP352-256-81-*	256	16 x 16	17 x 17	39.0 x 39.0	OT
NP486-268-045	268	20 x 20	21 x 21	47.0 x 47.0	OT
NP486-288-010	288	22 x 22	23 x 23	47.0 x 47.0	OT
NP486-320-028	320	20 x 20	21 x 21	47.0 x 47.0	OT
NP352-324-116	324	18 x 18	19 x 19	47.0 x 47.0	OT
NP352-98 AC-30689	324	22 x 22	23 x 23	62.0 x 62.0	OT
NP352-34534	345	21 x 21	23 x 23	62.0 x 62.0	OT
NP352-103 AC-29401	352	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-98 A106677-001	379	22 x 22	23 x 23	62.0 x 62.0	OT
NP352-103 AC-29397	388	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-98 A102213-002	388	22 x 22	23 x 23	62.0 x 62.0	OT
NP486-388-030	388	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-40025	400	29 x 29	31 x 31	62.0 x 62.0	OT
NP352-400-40	400	25 x 25	27 x 27	62.0 x 62.0	OT
NP483-416-062	416	30 x 30	31 x 31	47.0 x 47.0	OT
NP486-416-035	416	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-432-44	432	25 x 25	27 x 27	62.0 x 62.0	OT
NP352-436-68	436	33 x 33	35 x 35	62.0 x 62.0	OT
NP352-456-66	456	26 x 26	27 x 27	62.0 x 62.0	OT
NP352-48031	480	29 x 29	31 x 31	62.0 x 62.0	OT
NP352-484-87-*-*	484	26 x 26	31 x 31	47.0 x 47.0	OT
NP352-484-98	484	22 x 22	23 x 23	62.0 x 62.0	OT
NP486-484-021	484	22 x 22	23 x 23	47.0 x 47.0	OT
NP486-484-040	484	26 x 26	27 x 27	47.0 x 47.0	OT
NP486-516-020	515	26 x 26	27 x 27	47.0 x 47.0	OT
NP486-520-032	520	26 x 26	27 x 27	47.0 x 47.0	OT
NP486-544-027	544	26 x 26	27 x 27	47.0 x 47.0	OT
NP483-561-042	561	27 x 27	29 x 29	47.0 x 47.0	OT
NP352-568-195	568	30 x 30	31 x 31	50,0 x 50,0	OT
NP352-115523 AC-20603	580	34 x 34	35 x 35	62.0 x 62.0	OT
NP486-596-026	596	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-64819	648	33 x 33	35 x 35	62.0 x 62.0	OT
NP483-648-039	648	33 x 33	35 x 35	47.0 x 47.0	OT
NP352-659-209	659	30 x 30	31 x 31	50,0 x 50,0	OT
NP352-78832.AC-19367	660	38 x 38	40 x 40	62.0 x 62.0	OT
IC280-69605.AC-08327	671	34 x 34	35 x 35	56.20 x 54.90	DL
NP352-676-103	676	26 x 26	27 x 27	47.0 x 47.0	OT
NP352-115523.AC-22615	680	34 x 34	35 x 35	62.0 x 62.0	OT
NP352-152124 AC-19435	680	39 x 39	40 x 40	62.0 x 62.0	OT
IC280-69605	696	38 x 38	40 x 40	56.20 x 54.90	DL
IC280-720-106	720	38 x 38	40 x 40	56.20 x 54.90	DL
NP352-724-95	724	34 x 34	35 x 35	62.0 x 62.0	OT

TYPICAL IC PACKAGE SIZE



OUTLINE SOCKET DIMENSIONS



1.00MM PITCH (CONT'D)

Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
IC280-72918	729	27 x 27	28 x 28	46.80 x 47.60	DL
NP352-736-172	736	34 x 34	35 x 35	62.0 x 62.0	OT
NP352-87-1-1.AC-28845	764	30 x 30	31 x 31	47.0 x 47.0	OT
NP483-780-045-*	780	28 x 28	29 x 29	62.0 x 62.0	OT
NP352-78832	788	38 x 38	40 x 40	62.0 x 62.0	OT
NP352-152124.AC-25245	792	39 x 39	40 x 40	62.0 x 62.0	OT
NP352-829-133	829	39 x 39	40 x 40	62.0 x 62.0	OT
NP483-844-061	844	34 x 34	35 x 35	62.0 x 62.0	OT
IC280-868-108	868	38 x 38	40 x 40	54.90 x 50.90	DL
NP352-888-58	888	43 x 43	45 x 45	74.0 x 74.0	OT
NP483-899-022	899	30 x 30	32 x 32	62.0 x 62.0	OT
NP352-87 A101832-002	900	30 x 30	31 x 31	50,0 x 50,0	OT
NP483-900-025	900	30 x 30	31 x 31	62.0 x 62.0	OT
NP483-933-057-*	933	33 x 33	35 x 35	62.0 x 62.0	OT
NP352-115523 A101400-001	980	32 x 32	33 x 33	62.0 x 62.0	OT
NP352-1008-39	1008	43 x 43	45 x 45	74.0 x 74.0	OT
NP352-106426-*	1064	43 x 43	45 x 45	74.0 x 74.0	OT
NP352-115523	1155	34 x 34	35 x 35	62.0 x 62.0	OT
NP352-76814 AC-20629	1280	38 x 38	40 x 40	62.0 x 62.0	OT
NP352-1296-52	1296	36 x 36	37.5 x 37.5	74.0 x 74.0	OT
NP352-53 A101407-001	1397	39 x 39	40 x 40	62.0 x 62.0	OT
NP483-1444-034-1	1444	38 x 38	40 x 40	62.0 x 62.0	OT
NP483-1497-015	1497	39 x 39	40 x 40	62.0 x 62.0	OT
NP352-1521-53	1521	39 x 39	40 x 40	62.0 x 62.0	OT
NP483-1521-001	1521	39 x 39	40 x 40	62.0 x 62.0	OT
NP352-1600-54-*	1600	40 x 40	46 x 46	74.0 x 74.0	OT
NP483-1760-008-2	1760	42 x 42	42,5 x 42,5	74.0 x 74.0	OT
NP352-1849-35	1849	43 x 43	45 x 45	74.0 x 74.0	OT
NP483-1924-058	1924	44 x 44	45 x 45	74.0 x 74.0	OT
NP483-1936-060	1936	44 x 44	45 x 45	74.0 x 74.0	OT
NP483-2116-014-1	2116	46 x 46	47.5 x 47.5	74.0 x 74.0	OT
NP483-2209-003	2209	47 x 47	50 x 50	74.0 x 74.0	OT

1.27MM PITCH

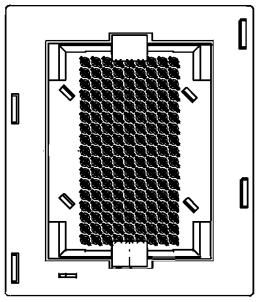
Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP276-11904*	119	7 x 17	14 x 22	27.0 x 33.2	OT
NP276-11935-**-*	119	7 x 17	14 x 22	27.0 x 33.2	OT
NP276-15316.AC-12849	119	7 x 17	14 x 22	28.4 x 33.2	OT
NP276-25626.A106711-001	121	11 x 11	15 x 15	49.4 x 49.4	OT
NP276-15334	153	9 x 17	14 x 22	28.4 x 33.2	OT
NP276-37206 AC-02144	204	17 x 17	23 x 23	49.4 x 49.4	OT
NP276-37206 AC-08329	217	17 x 17	23 x 23	49.4 x 49.4	OT
NP276-23342-1-1	233	17 x 17	23 x 23	49.4 x 49.4	OT
NP276-37206 AC-21744	233	17 x 17	23 x 23	49.4 x 49.4	OT
NP276-37206.A103582-***	233	17 x 17	23 x 23	49.4 x 49.4	OT
NP276-25626 AC-15763	256	16 x 16	23 x 23	49.4 x 49.4	OT

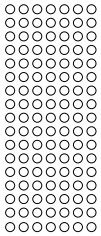
1.27MM PITCH (CONT'D)

Part Number	Pin Count	Grid Size	Package Size A X B	Socket Dimensions C x D	Lid Type
NP276-25626-1	256	16 x 16	21 x 21	49.4 x 49.4	OT
NP276-37206.AC-02310	256	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-37206.AC-03145	256	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-37206.AC-03327	256	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-37206.AC-03134	272	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-87318 AC-23775	273	20 x 20	27 x 27	68.0 x 68.0	OT
NP276-37206.A104323-001	277	20 x 20	27 x 27	49.4 x 49.4	DL
NP276-37206.A101288-001	316	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-40009-*.AC-06524	320	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-37206.AC-05610	328	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-52928.AC-12427-*	329	23 x 23	31 x 31	58.4 x 58.4	OT
NP276-37206 AC-09785	336	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-40037-*.AC-18666	345	20 x 20	31 x 31	58.4 x 58.4	OT
NP276-37206.A100350-001	352	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-59608.AC-03146	352	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-03328	352	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-04944	352	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-03149	356	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-40009.A104318-001	364	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-37206-*	372	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-52928.AC-12426	385	23 x 23	31 x 31	58.4 x 58.4	OT
NP276-59608.AC-02913	388	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-03137	388	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-07411	388	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-40009-*	400	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-40009-A4	400	20 x 20	27 x 27	49.4 x 49.4	OT
NP276-59608 AC-11092	416	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608-*.AC-09801	420	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-05955	420	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608-1 .AC-09801	420	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-87318.AC-05618	432	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-87318.AC-05630	432	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-87318.AC-11938	432	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-59608.AC-04460	456	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-75319.AC-14013	480	29 x 29	37.5 x 37.5	68.0 x 68.0	OT
NP276-59608.AC-03035	484	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608-2.AC-23795	484	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-07102	492	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-59608.AC-08313	492	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-75319-*.AC-10439	493	29 x 29	37.5 x 37,5	68.0 x 68.0	OT
NP276-52928-B1	529	23 x 23	31 x 31	58.4 x 58.4	OT
NP276-54036-*	540	32 x 32	42.5 x 42.5	74.0 x 74.0	OT
NP276-96924.AC-08324	560	33 x 33	42.5 x 42.5	74.0 x 74.0	OT
NP276-76820.AC-06128	576	30 x 30	40 x 40	68.0 x 68.0	OT
NP276-76820.AC-08955	576	30 x 30	40 x 40	68.0 x 68.0	OT
NP276-59608-B2	596	26 x 26	35 x 35	58.4 x 58.4	OT
NP276-110522-AC-09796	600	35 x 35	45 x 45	74.0 x 74.0	OT
NP276-87318.AC-12416	600	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-62525-A2	625	25 x 25	35 x 35	58.4 x 58.4	OT
NP276-62525-B3	625	25 x 25	35 x 35	58.4 x 58.4	OT
NP276-75319.AC-20616	633	29 x 29	37.5 x 37,5	68.0 x 68.0	OT
NP276-110522.AC-15751	650	35 x 35	37.5 x 37.5	74.0 x 74.0	OT
NP276-110522.AC-17392	652	35 x 35	45 x 45	74.0 x 74.0	OT
NP276-110522.AC-17393	652	35 x 35	45 x 45	74.0 x 74.0	OT
NP276-110522.AC-18327	652	35 x 35	45 x 45	74.0 x 74.0	OT
NP276-87318.AC-14002	672	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-67639-P	676	26 x 26	35 x 35	68.0 x 68.0	OT
NP276-87318-*	873	31 x 31	40 x 40	58.4 x 58.4	OT
NP276-96924-1	969	33 x 33	42,5 x 42,5	74.0 x 74.0	OT
NP276-110522-*	1105	35 x 35	45 x 45	74.0 x 74.0	OT

BASE SOCKETS 27.0 X 38.0

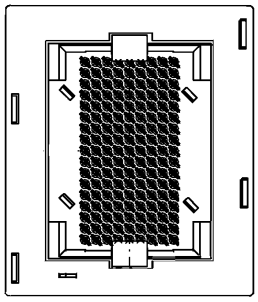
NP276-11904*	Max. Grid Size	7 x 17
	Max. Body Size	14 x 22
	Max. Pin Count	119

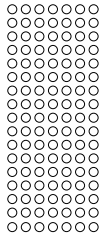




BASE SOCKETS 26.0 X 32.0

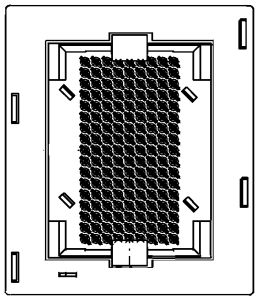
NP276-11904-3	Max. Grid Size	7 x 17
	Max. Body Size	14 x 22
	Max. Pin Count	119

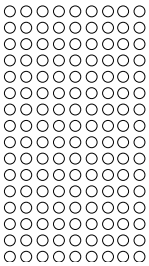




BASE SOCKET 28.0 X 33.2

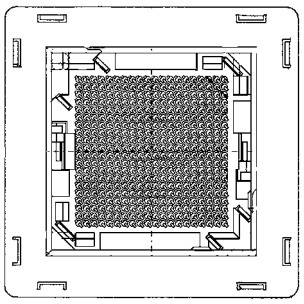
NP276-11904*	Max. Grid Size	9 x 17
	Max. Body Size	14 x 22
	Max. Pin Count	119

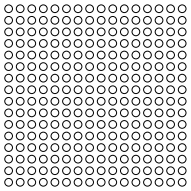




BASE SOCKET 49.4 X 49.4

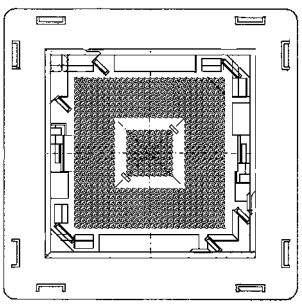
NP276-25626-*	Max. Grid Size	16 x 16
	Max. Body Size	21 x 21
	Max. Pin Count	256

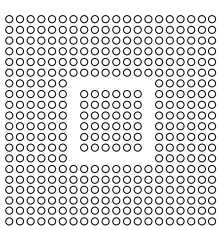




BASE SOCKET 49.4 X 49.4

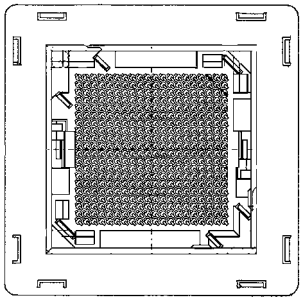
NP276-37206-*	Max. Grid Size	20 x 20
	Max. Body Size	27 x 27
	Max. Pin Count	372

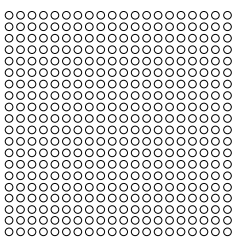




BASE SOCKET 49.4 X 49.4

NP276-40009-*	Max. Grid Size	20 x 20
	Max. Body Size	27 x 27
	Max. Pin Count	400





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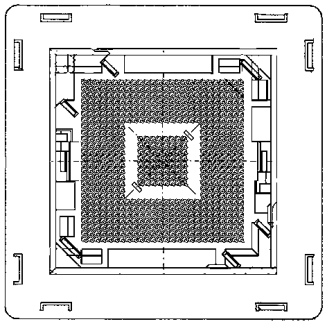
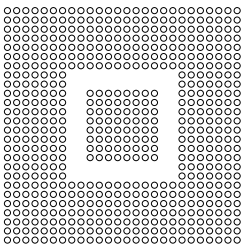
BASE SOCKET 58.40 X 58.40

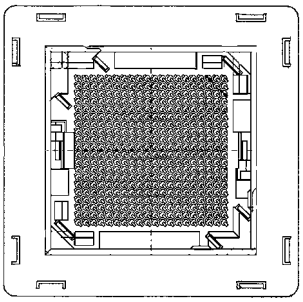
NP276-59608-*		
	Max. Grid Size	26 x 26
	Max. Body Size	35 x 35
	Max. Pin Count	596

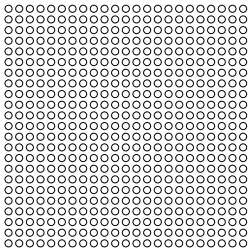




BASE SOCKET 58.4 X 58.4

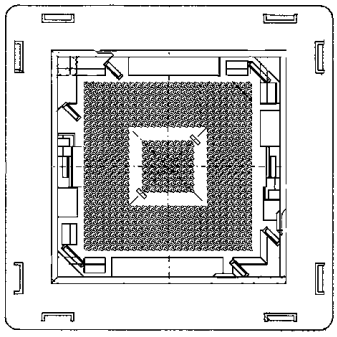
NP276-62525-B*		
	Max. Grid Size	25 x 25
	Max. Body Size	35 x 35
	Max. Pin Count	625

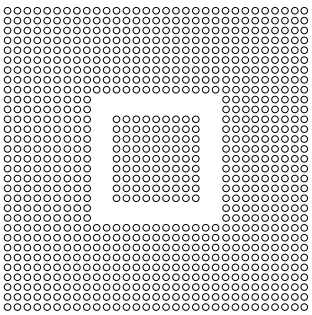




BASE SOCKET 68.0 X 68.0

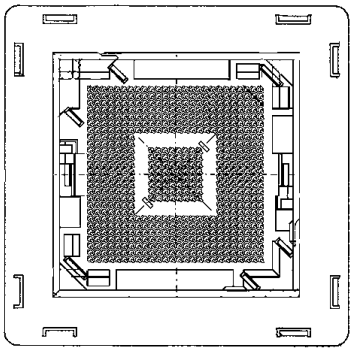
NP276-87318-*		
	Max. Grid Size	31 x 31
	Max. Body Size	42 x 42
	Max. Pin Count	873

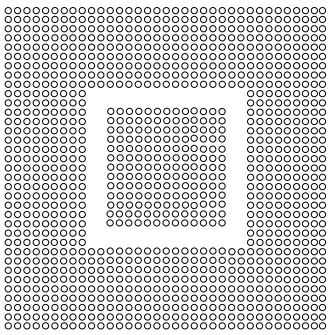




BASE SOCKET 74.0 X 74.0

NP276-110522-*		
	Max. Grid Size	35 x 35
	Max. Body Size	45 x 45
	Max. Pin Count	1105





SERIES NP506, NP404, NP473, NP445, NP364 / IC549, IC550 / QFN11T

SPECIFICATIONS

Insulation Resistance:	10,000MΩ min. at 100V DC
Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	100mΩ or less
Operating Temp.Range:	–40°C to +150°C

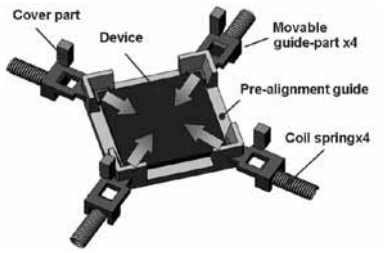
MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

SERIES NP506 (OPEN TOP - TH)

SPECIFICATIONS / MATERIAL AND FINISH
(see above)

FEATURES
- Active alignment for IC package positioning



SERIES NP404 (OPEN TOP - TH)

SPECIFICATIONS / MATERIAL AND FINISH
(see above)

FEATURES
- Buckling Beam contacts

SERIES NP473 AND NP364 (OPEN TOP - TH)

SPECIFICATIONS / MATERIAL AND FINISH
(see above)

FEATURES
- 0.50 and I.00 mm pitch
- Buckling Beam contacts
- Low actuation force

SERIES NP445 (OPEN TOP - TH)

SPECIFICATIONS / MATERIAL AND FINISH
(see above)

FEATURES
- Centre Contact available for exposed pads

SERIES IC549 AND IC550 (CLAMSHELL - TH)

SPECIFICATIONS / MATERIAL AND FINISH
(see above)

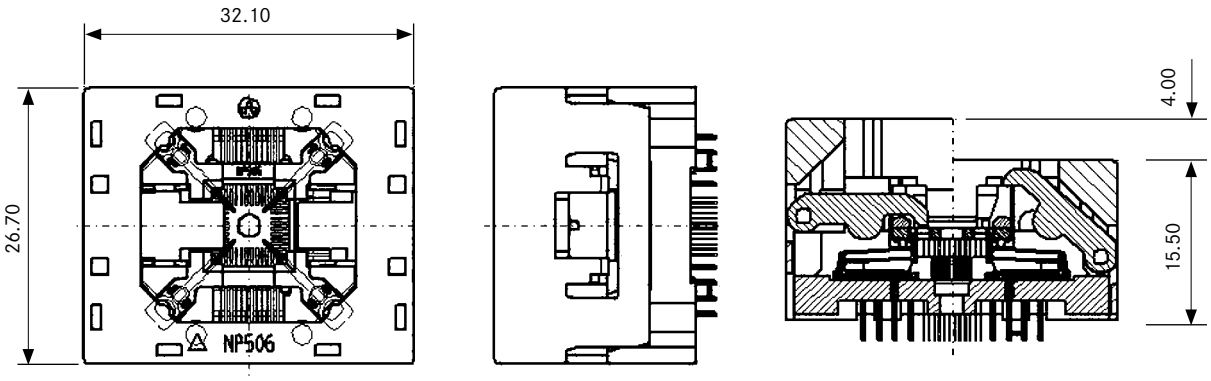
FEATURES
- Centre Contact available for exposed pads, heat sink and floating base non sticking option
- Accommodates 0.5 ~1.2mm thick package

SERIES QFN11T (CLAMSHELL - TH)

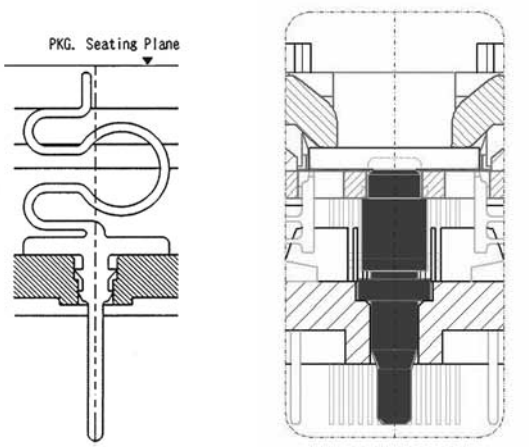
SPECIFICATIONS / MATERIAL AND FINISH
(see above)

FEATURES
- Centre Contact available for exposed pads
- Probe Pins
- Heat sink

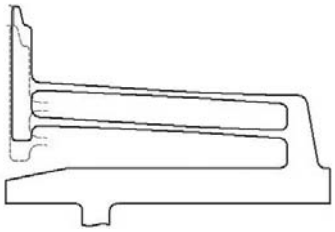
TYPICAL (NP506) OPEN TOP SOCKET DIMENSIONS



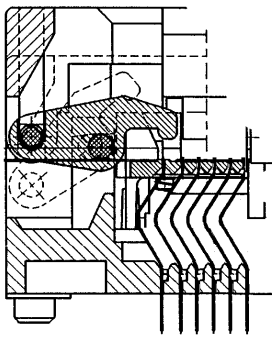
CONTACT TYPES



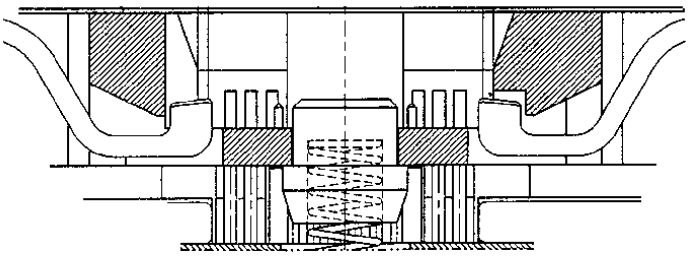
Centre Spring Types



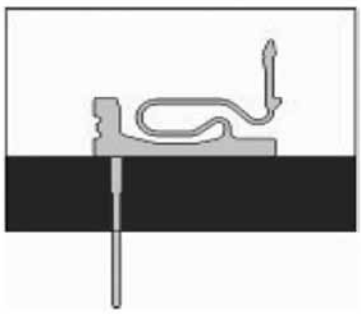
Low Wiping Type



Buckling Beam Type

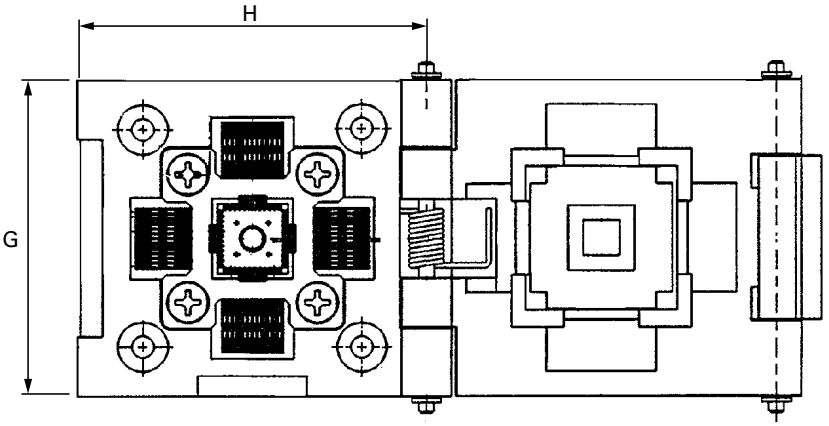


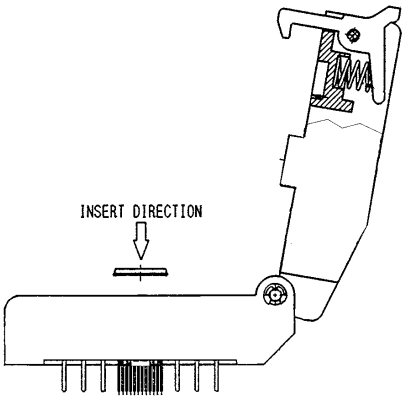
Standard Contact Type



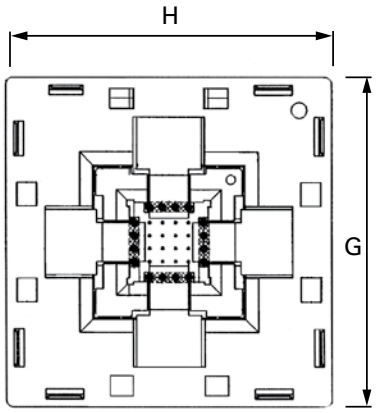
Low Wiping Type

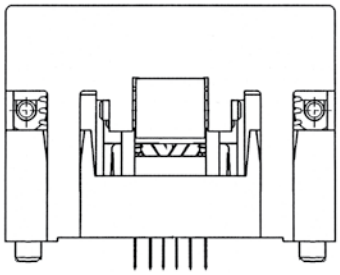
TYPICAL CLAMSHELL SOCKET DIMENSIONS





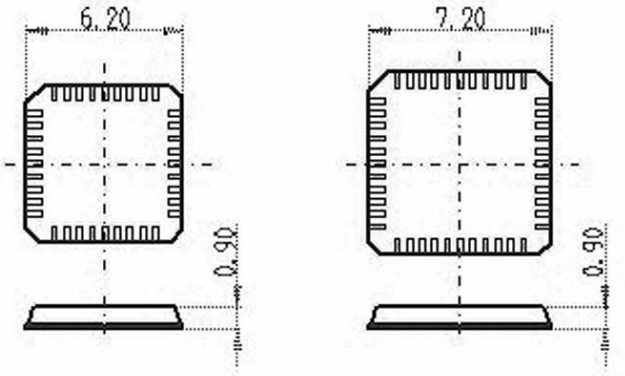
TYPICAL (NP404) OPEN TOP SOCKET



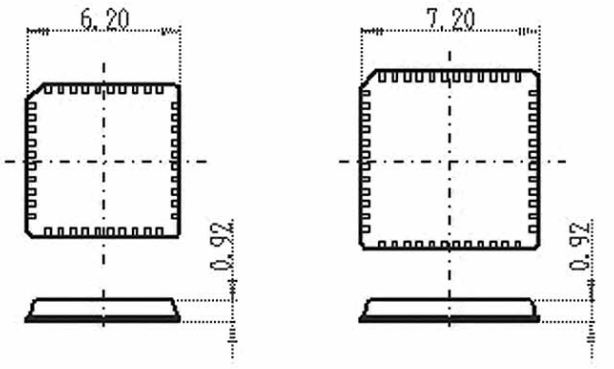


PACKAGE OUTLINE

Odd

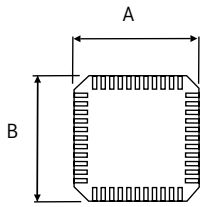


Even

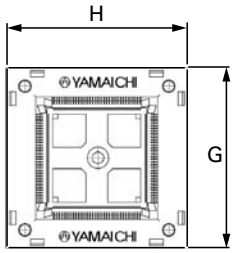


SOCKET DIMENSIONS

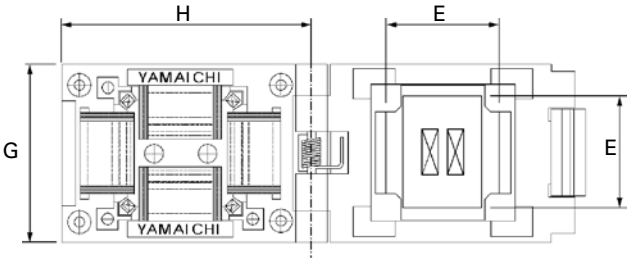
Outline IC Body Dimensions



Outline Open Top Socket Dimensions



Outline Clamshell Socket Dimensions



0.40MM PITCH

Part Number	Pin Count	IC Body Dim. A x B	IC Body Dim. C (Ht.)	Center pin	Socket Dim. G X H	Pins (each side)	Package Type
IC549-0204-005	20	3 x 3	0.5 -1.2	No	24.5 x 22.0	5 x 5	LID
IC549-0204-005-G	20	3 x 3	0.5 -1.2	1	24.5 x 22.0	5 x 5	LID
IC549-0284-003	28	4 x 4	0.5 -1.2	No	24.5 x 22.0	6 x 6	LID
IC549-0284-003-G	28	4 x 4	0.5 -1.2	1	24.5 x 22.0	6 x 6	LID
NP506-028-046-SCG	28	4 x 4	0.75	1	25.0 x 25.0	7 x 7	OT
IC549-0324-006	32	4 x 4	0.5 -1.2	No	24.5 x 22.0	8 x 8	LID
IC549-0324-006-G	32	4 x 4	0.5 -1.2	1	24.5 x 22.0	8 x 8	LID
NP506-032-039-SCG	32	4 x 4	0.85	1	25.0 x 25.0	8 x 8	OT
NP506-036-049-SCG	36	5 x 5	0.85	1	25.0 x 25.0	9 x 9	OT
IC549-0404-004	40	5 x 5	0.5 -1.2	No	24.5 x 22.0	10 x10	LID
IC549-0404-004-G	40	5 x 5	0.5 -1.2	1	24.5 x 22.0	10 x 10	LID
NP506-040-007-SG	40	5 x 5	0.90	1	32.1 x 26.7	10 x 10	OT
NP506-040-026-SG	40	5 x 5	0.90	1	32.1 x 26.7	10 x 10	OT
NP506-040-048-SCG	40	5 x 5	0.75	1	25.0 x 25.0	10 x 10	OT
NP506-044-050-SCG	44	6 x 6	0.75	1	25.0 x 25.0	11 x 11	OT
IC549-0484-010	48	6 x 6	0.5 -1.2	No	245 x 22.0	12 x 12	LID
IC549-0484-010-G	48	6 x 6	0.5 -1.2	1	24.5 x 22.0	12 x 12	LID
NP506-048-002-SG	48	6 x 6	0.90	1	32.1 x 26.7	12 x 12	OT
NP506-048-025-SG	48	6 x 6	0.90	1	32.1 x 26.7	12 x 12	OT
NP506-048-044-SCG	48	7 x 7	0.75	1	25.0 x 25.0	12 x 12	OT
NP506-052-052-SCG	52	7 x 7	0.75	1	25.0 x 25.0	13 x 13	OT
NP506-056-006-SG	56	7 x 7	0.90	1	32.1 x 26.7	14 x 14	OT
NP506-056-009-SG	56	7 x 7	0.85	1	32.1 x 26.7	14 x 14	OT
NP506-056-051-SCG	56	7 x 7	0.75	1	25.0 x 25.0	17 x 17	OT
IC549-0644-008	64	8 x 8	0.5 -1.2	No	24.5 x 22.0	16 x 16	LID
IC549-0644-008-G	64	8 x 8	0.5 -1.2	1	24.5 x 22.0	16 x 16	LID
NP506-064-038-S	64	8 x 8	0.75	No	36.0 x 31.0	16 x 16	OT
NP506-064-038-SG	64	8 x 8	0.75	1	36.0 x 31.0	16 x 16	OT
QFN11T064-005	64	8 x 8	0.80	2+1	35.0 x 32.0	16 x 16	LID
NP506-068-011-SCG	68	8 x 8	0.75	1	25.0 x 25.0	17 x 17	OT
NP506-068-020-S	68	8 x 8	0.90	No	36.0 x 31.0	17 x 17	OT
NP506-068-020-SG	68	8 x 8	0.90	1	36.0 x 31.0	17 x 17	OT
QFN11T068-002	68	8 x 8	0.90	2+1	35.0 x 32.0	16 x 16	LID
QFN11T068-002 A108429-001	68	8 x8	0.90	No	35.0 x 32.0	16 x 16	LID
QFN11T076-001	76	9 x 9	0.90	2+1	35.0 x 32.0	19 x 19	LID
QFN11T080-001	80	9 x 9	0.75	2+1	35.0 x 32.0	20 x 20	LID
QFN11T084-002	84	10 x 10	0.90	2	35.0 x 32.0	21 x 21	LID
NP506-088-014	88	10 x 10	0.85	1	36.0 x 31.0	22 x 22	OT
NP506-088-017-SCG	88	10 x 10	0.85	1	36.0 x 31.0	22 x 22	OT
QFN11T088-001	88	10 x 10	0.90	2+1	35.0 x 32.0	22 x 22	LID
IC549-1084-004	108	12 x 12	0.5 -1.2	No	24.5 x 22.0	27 x 27	LID
IC549-1084-007-G	108	12 x 12	0.5 -1.2	1	24.5 x 22.0	27 x 27	LID

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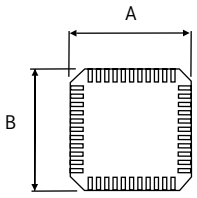
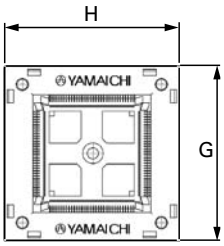
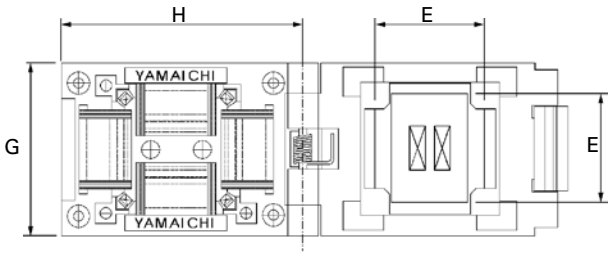
Outline IC Body Dimensions



Outline Open Top Socket Dimensions



Outline Clamshell Socket Dimensions



0.50MM PITCH

Part Number	Pin Count	IC Body Dim. A x B	IC Body Dim. C (Ht.)	Center pin	Socket Dim. G X H	Pins (each side)	Package Type
IC550-0124-003	12	3 x 3	0.5 - 1.2	No	24.5 x 22	3 x 3	LID
IC550-0124-003-G	12	3 x 3	0.5 - 1.2	1	24.5 x 22	3 x 3	LID
IC550-0164-005	16	4 x 4	0.5 - 1.2	No	24.5 x 22	4 x 4	LID
IC550-0164-005-G	16	4 x 4	0.5 - 1.2	1	24.5 x 22	4 x 4	LID
IC550-0364-016	16	6 x 6	0.5 - 1.2	NO	24.5 x 22	4 x 4	LID
IC550-0364-016-G	16	6 x 6	0.5 - 1.2	1	24.5 x 22	4 x 4	LID
NP404-016-019-1	16	4 x 5	0.75	4	32 x 32	4 x 4	OT
NP404-01613-1	16	3 x 3	0.90	No	32 x 32	4 x 4	OT
NP404-01613-1 A108715-001	16	3 x 3	0.90	4	32 x 32	4 x 4	OT
IC550-0204-008	20	3 x 3	0.5 - 1.2	No	24.5 x 22	5 x 5	LID
IC550-0204-008-G	20	3 x 3	0.5 - 1.2	1	24.5 x 22	5 x 5	LID
IC550-0204-009	20	4 x 4	0.5 - 1.2	No	24.5 x 22	5 x 5	LID
IC550-0204-009-G	20	4 x 4	0.5 - 1.2	1	24.5 x 22	5 x 5	LID
NP473-020-004-1	20	4 x 4	0.5 - 1.2	No	25 x 25	5 x 5	OT
NP506-020-035-CG	20	4 x 4	0.75	1	25 x 25	5 x 5	OT
IC550-0244-015	24	4 x 4	0.5 - 1.2	No	24.5 x 22	6 x 6	LID
NP404-02412-1	24	4 x 4	0.75	No	32 x 32	6 x 6	OT
NP404-02412-1 A107658-001	24	4 x 4	0.75	4	32 x 32	6 x 6	OT
NP506-024-032-C	24	4 x 4	0.75	No	25 x 25	6 x 6	OT
NP506-024-032-CG	24	4 x 4	0.75	1	25 x 25	6 x 6	OT
QFN11T024-002	24	3.5 x 4.5	0.95	No	32 x 29	4 x 8	LID
QFN11T024-002 A105533-001	24	3.5 x 4.5	0.95	No	32 x 29	4 x 8	NO LID
QFN11T024-006	24	3.5 x 4.5	0.90	No	32 x 29	2 x 10	LID
IC550-0284-011	28	5 x 5	0.5 - 1.2	NO	24.5 x 22	7 x 7	LID
IC550-0284-011-G	28	5 x 5	0.5 - 1.2	1	24.5 x 22	7 x 7	LID
NP404-028-021-1	28	4 x 5	1.00	4	32 x 32	6 x 8	OT
NP506-028-028-CG	28	5 x 5	0.90	1	25 x 25	7 x 7	OT
IC550-0324-007	32	5 x 5	0.5 - 1.2	No	24.5 x 22	8 x 8	LID
IC550-0324-007-G	32	5 x 5	0.5 - 1.2	1	24.5 x 22	8 x 8	LID
NP445-032-003	32	5 x 5	0.85	2	32.8 x 32.8	8 x 8	OT
NP473-032-006-1	32	5.1 x 6.2	0.90	No	32 x 32	7 x 9	OT
NP506-032-005-G	32	5 x 5	0.86	1	32.1 x 26.7	8 x 8	OT
NP506-032-013-G	32	5 x 5	0.31 - 0.6	1	32.1 x 26.7	8 x 8	OT
NP506-032-031-C	32	5 x 5	0.75	No	25 x 25	8 x 8	OT
NP506-032-031-CG	32	5 x 5	0.75	1	25 x 25	8 x 8	OT
QFN11T032-003	32	5 x 5	0.85	1	32 x 29	8 x 8	LID
QFN11T032-003 A105525-001	32	5 x 5	0.85	1	32 x 29	8 x 8	NO LID
NP473-036-007-1	36	6 x 6	0.85	No	25 x 25	9 x 9	OT
NP506-036-034-C	36	6 x 6	0.85	No	25 x 25	9 x 9	OT
QFN11T036-004	36	6 x 6	0.65	1	35 x 32	9 x 9	LID
IC550-0404-012	40	6 x 6	0.5 - 1.2	No	24.5 x 22	10 x 10	LID
NP404-040-020-1	40	6 x 6	0.90	No	32 x 32	10 x 10	OT
NP404-04016-1	40	6 x 6	0.5 - 1.2	16	32 x 32	10 x 10	OT
NP506-040-030-C	40	6 x 6	0.75	No	25 x 25	10 x 10	OT
NP506-040-030-CG	40	6 x 6	0.75	1	25 x 25	10 x 10	OT
QFN11T040-005	40	5.5 x 6.5	0.85	No	35 x 32	8 x 12	LID

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0.50MM PITCH (CONT'D)

Part Number	Pin Count	IC Body Dim. A x B	IC Body Dim. C (Ht.)	Center pin	Socket Dim. G X H	Pins (each side)	Package Type
QFN11T040-006	40	6 x 6	0.88	1	34.5 x 29	10 x 10	LID
QFN11T040-006-N	40	6 x 6	0.88	No	34.5 x 29	10 x 10	LID
QFN11T040-009	40	6 x 6	0.88	1	32 x 29	10 x 10	LID
NP473-044-001-1	44	7 x 7	0.5 - 1.2	No	25 x 25	11 x 11	OT
NP506-044-036-C	44	7 x 7	0.75	No	25 x 25	11 x 11	OT
NP506-044-036-CG	44	7 x 7	0.75	1	25 x 25	11 x 11	OT
QFN11T044-004	44	7 x 7	0.80	1	32 x 29	11 x 11	LID
IC550-0484-004-G	48	7 x 7	0.5 - 1.2	1	24.5 x 22	12 x 12	LID
NP445-048-001	48	7 x 7	0.85	6	32.8 x 32.8	12 x 12	OT
NP445-048-004	48	7 x 7	0.50	6	32.8 x 32.8	12 x 12	OT
NP506-048-001	48	7.2 x 7.2	0.92	No	32.1 x 26.7	12 x 12	OT
NP445-048-004	48	7 x 7	0.50	6	32.8 x 32.8	12 x 12	OT
NP506-048-001	48	7.2 x 7.2	0.92	No	32.1 x 26.7	12 x 12	OT
NP506-048-008-G	48	7 x 7	0.90	1	32.1 x 26.7	12 x 12	OT
NP506-048-012-G	48	7 x 7	0.75	1	32.1 x 26.7	12 x 12	OT
NP506-048-015-G	48	7 x 7	0.90	1	32.1 x 26.7	12 x 12	OT
NP506-048-017-C	48	7 x 7	0.75	No	32.1 x 26.7	12 x 12	OT
NP506-048-017-CG	48	7 x 7	0.75	1	32.1 x 26.7	12 x 12	OT
QFN11T048-008	48	7 x 7	0.85	No	35 x 32	12 x 12	LID
QFN11T048-008 A101121-001	48	7 x 7	1.00	4	35 x 32	12 x 12	LID
QFN11T048-008 A105899-001	48	7 x 7	1.00	No	35 x 32	12 x 12	NO LID
QFN11T048-009	48	7 x 7	0.66	No	35 x 32	12 x 12	LID
NP506-052-018-CG	52	8.2 x 8.2	0.90	1	25 x 25	13 x 13	OT
NP506-052-037-C	52	8 x 8	0.75	No	25 x 25	13 x 13	OT
NP506-052-037-CG	52	8 x 8	0.75	1	25 x 25	13 x 13	OT
QFN11T052-003	52	8 x 8	0.90	4	35 x 32	13 x 13	LID
QFN11T052-004	52	8 x 8	0.80	1	32 x 29	13 x 13	LID
IC550-0564-010	56	8 x 8	0.5 - 1.2	No	24.5 x 22	14 x 14	LID
IC550-0564-010-G	56	8 x 8	0.5 - 1.2	1	24.5 x 22	14 x 14	LID
NP404-05610-1	56	8 x 8	0.5 - 1.2	No	32 x 32	14 x 14	OT
NP404-05610-1 A104902-001	56	8 x 8	0.5 - 1.2	8	32 x 32	14 x 14	OT
NP445-056-005	56	8 x 8	0.85	6	32.8 x 32.8	14 x 14	OT
NP506-056-027-C	56	8 x 8	0.75	No	25 x 25	14 x 14	OT
NP506-056-027-CG	56	8 x 8	0.75	1	25 x 25	14 x 14	OT
QFN11T056-003	56	8 x 8	0.90	4	35 x 32	14 x 14	LID
QFN11T060-001	60	9 x 9	0.90	1	35 x 32	15 x 15	LID
IC550-0644-006	64	9 x 9	0.5 - 1.2	No	24.5 x 22	16 x 16	LID
IC550-0644-006-G	64	9 x 9	0.5 - 1.2	1	24.5 x 22	16 x 16	LID
NP445-064-002	64	9 x 9	0.85	6	32.8 x 32.8	16 x 16	OT
NP445-064-007	64	9 x 9	1.00	4	32.8 x 32.8	16 x 16	OT
QFN11T064-006	64	9 x 9	0.90	8+1	35 x 32	16 x 16	LID
QFN11T068-003	68	10 x 10	0.90	8+1	35 x 32	17 x 17	LID
NP404-07215-1	72	10 x 10	0.85	No	32 x 32	18 x 18	OT
NP404-07215-1 A107620-001	72	10 x 10	0.85	16	32 x 32	18 x 18	OT
QFN11T072-001	72	10 x 10	0.90	8+1	35 x 32	18 x 18	LID
IC550-0804-014	80	12 x 12	0.5 - 1.2	No	24.5 x 22	20 x 20	LID
IC550-0804-014-G	80	12 x 12	0.5 - 1.2	1	24.5 x 22	20 x 20	LID
IC550-0804-013-G	88	12 x 12	0.5 - 1.2	No	24.5 x 22	22 x 22	LID
IC550-0804-013-G	88	12 x 12	0.5 - 1.2	1	24.5 x 22	22 x 22	LID
QFN11T040-004	36/40	6 x 6	0.80	1	32 x 29	9 x 11	LID
QFN11T048-005	44/48	7 x 7	0.80	1	32 x 29	11 x 13	LID
QFN11T048-005 A105540-001	44/48	7 x 7	0.80	1	32 x 29	11 x 13	NO LID
QFN11T056-001	52/56	8 x 8	0.80	1	32 x 29	13 x 15	LID
QFN11T056-001 A105524-001	52/56	8 x 8	0.80	1	32 x 29	13 x 15	NO LID

1.00MM PITCH

Part Number	Pin Count	IC Body Dim. A x B	IC Body Dim. C (Ht.)	Center pin	Socket Dim. G X H	Pins (each side)	Package Type
NP364-01649	16	6 x 6	1.98	No	25 x 25	4 x 4	OT

YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

TEST CONTACTORS

CUSTOMISED ≥0.40MM PITCH, HINGED TYPE AND VOLUME TEST

SPECIFICATIONS

Contact Resistance:	≤75mΩ
Contact Force (typical):	15 to 25g
Operating Temp. Range:	–40°C to +125°C
High Temperature Range:	–55°C to +150°C
Mating Cycles:	500,000 insertions min.

MATERIALS AND FINISH

Housing:	PEEK / Anodized Aluminum
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Customised Test Contactor
- Open Top and Easy-Close cover
- Outstanding performance
- Higher temperature range available
- Electrical performance on request

PART NUMBER

YED274 - 120100 - *

- Series
- Pin Count
- Pitch Size

TYPICAL PIN TIP STYLES

Crown Cup Conical

Spherical Flat Reduced Crown

EXAMPLES

FEATURES

- ≥0.4mm pitch
- Open Top
- Removable insert
- Suitable for automated loading system

FEATURES

- ≥0.4mm pitch
- HF capable
- Designed for customers own requirements
- Very robust design
- Excellent electrical performance

CUSTOMISED ≥0.40MM PITCH, HINGED TYPE

SPECIFICATIONS

Contact Resistance:	≤75mΩ
Contact Force (typical):	15 to 25g
Operating Temp. Range:	–40°C to +125°C
High Temperature Range:	–55°C to +150°C
Mating Cycles:	50,000 insertions min.
Low Pin Count:	200 contacts max.

MATERIALS AND FINISH

Housing:	PEEK / Anodized Aluminium
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Customised Test Contactor
- Easy-close cover
- Outstanding performance
- Lab applications
- Higher temperature range available
- Electrical performance on request

PART NUMBER

YED254 - 130100 - *

- Series
- Pin Count
- Pitch Size

TYPICAL PIN TIP STYLES

Crown Cup Conical

Spherical Flat Reduced Crown

EXAMPLES

FEATURES

- ≥0.4mm pitch
- Centre pin on request
- Reliable contactor for lab applications
- Low pin count

FEATURES

- ≥0.4mm pitch
- Available for HAST/HTOL applications
- Customised manual type
- Excellent electrical performance

YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

TEST CONTACTORS (Y-RED MODULAR)

Y-RED is a unique contact unit design with top side access which enables the customer to exchange the insert without disassembly of the complete test setup.

Our designers implemented many useful features for simple operation with high reliability and high insertion/extraction cycles.

YRED®

RAPID

design and manufacturing guarantees that our customers are ready for test when the silicon arrives. The “time to customer” is just 3-4 weeks between inquiry and product delivery.

EFFICIENT

test hardware utilisation is the key for customer’s success. The easy attachable screw-on hand test cover combined with an overall poka-yoke design helps to minimize changeover times.

DURABLE

robust design and excellent electrical performance leaves nothing to be desired.

HIGH PERFORMANCE SPRING PROBE PINS

- Excellent reliability
- Low contact resistance <50mW
- Outstanding mating cycles 500k
- Ultra low pitch capability
- Crown and conical plunger styles
- Standard and High Temperature

HINGED TYPE AND VOLUME TEST

SPECIFICATIONS

Contact Resistance:	<50mΩ
Contact Force:	25g
Operating Temp. Range:	–40°C to +125°C
High Temperature Range:	–55°C to +150°C
Mating Cycles:	500,000 insertions min.

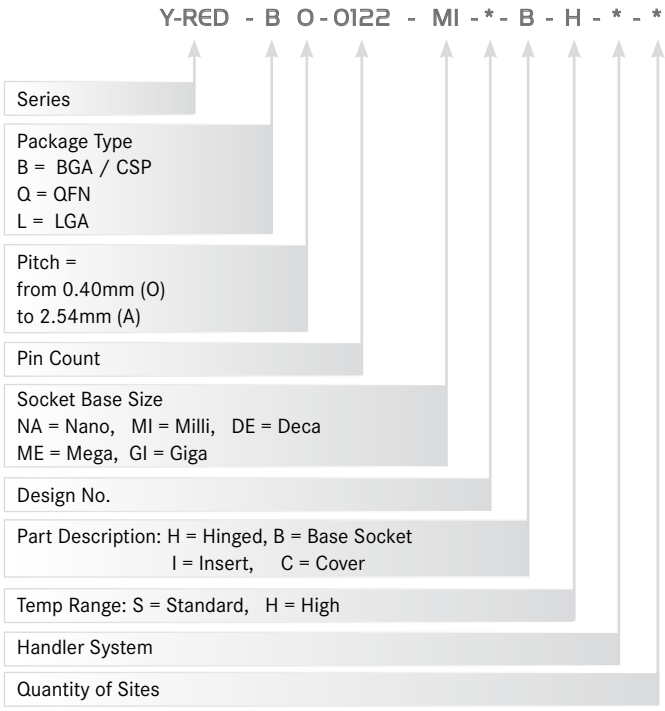
MATERIALS AND FINISH

Housing:	PEEK / Anodized Alumunium
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

- Test Contactor for
- BGA, CSP, QFN and LGA packages
- Outstanding performance
- For Lab and volume test aplications

PART NUMBER



PRODUCT RANGE

	NANO	MILLI	DECA	MEGA	GIGA
Package Dimensions	≤ 6 x 6mm	> 6 x 6mm / ≤ 12 x 12mm	> 12 x 12mm / ≤ 22 x 22mm	> 22 x 22mm / ≤ 35 x 35mm	> 35 x 35mm / ≤ 45 x 45mm
Cover Type	TWIST	TWIST	TWIST and HPC	High Pressure Cover (HPC)	High Pressure Cover (HPC)
Temperature Range	Standard Temperature = -40°C to +125°C / High Temperature = -55°C to +150°C				
Package Types	BGA / CSP / QFN / LGA				
Device (Pitch)	≥ 0.4mm				

YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

RECEPTACLES

APPLICATION

The receptacle is used as an additional adapter between the PCB and the Test and Burn-In socket, therefore making the socket removable

TERMINAL LENGTH

Minimum pin length 2.4mm

Maximum pin length 3.8mm
(if above 3.8mm, groove is required on the insulator)

MATERIAL

Insulator	- Various Selctions e.g. PEI, PEEK...
Inner Contact	- Gold plating (30µ")over Nickel plating (50µ")
Outer Sleeve	- Gold plating (10µ") over Nickel plating (100µ")

PITCH

1.27mm (50 MIL) is Standard Pitch (less is considered Fine Pitch)

OPERATING TEMP. RANGE

- 40°C to + 150°C

ORDERING CODE PROCEDURE

REFERENCE GUIDE FOR CODE NO: SOCKET SERIES CODE NO.. 51 - 1004-814 - A 2 B 1

SOCKET SERIES (examples)	CODE	CONTACT TYPES
NP276	276	S
IC51	51	A, B, C
IC234	234	A, B, C

These socket series also have many various and customised types available.

For more information please contact Yamaichi sales department

Pin Count / Socket Type.

Contact Type
(see codes next page)

Insulator Plate Thickness

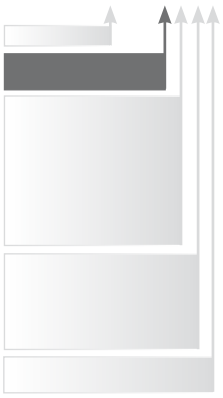
Code	Dinmensions	
1	3.17mm Standard	(no Groove possible)
2	4.45mm	Groove Optional
3	5.21mm	Groove Optional
4	5.84mm	Groove Optional
5	6.00mm	Groove Optional
6	6.50mm	Groove Optional
7	8.0mm	Groove Optional

Notched /No Notch
with Or Without Guide Post

Grooved / no Groove
with or without Guide Post
(see codes next page)

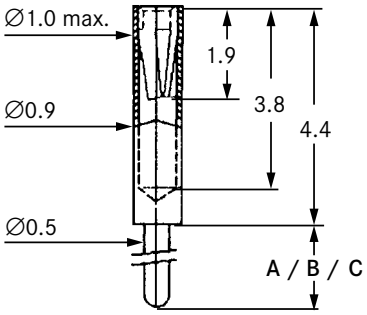
For special Requests
(eg Stand-off and Customer Specific)

ORDERING CODES FOR CONTACT TYPES



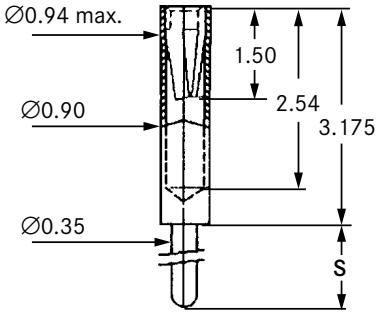
FINE PITCH SOLDER TAILS

Code	Tail Length
A	4.57mm
B	6.99mm
C	10.16mm



FINE PITCH SOLDER TAILS FOR BGA

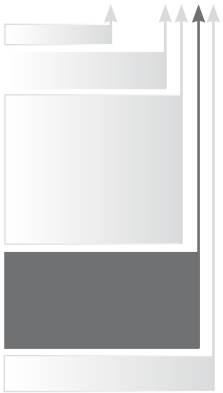
Code	Tail Length
S	6.35mm



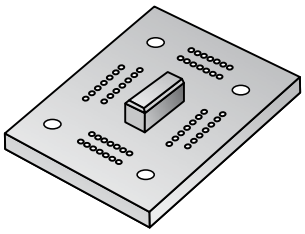
NOTCHES ON INSULATOR Notched receptacles may be used for sockets with handler applications

GROOVE Some sockets contact tails are too long to seat flush, therefore additional groove will be needed. Standard receptacle pins accept 3.8mm (0.150") max.

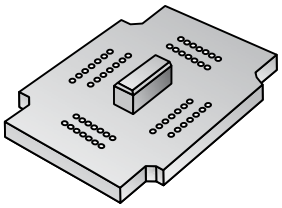
ORDERING CODES FOR NOTCHES AND GROOVES



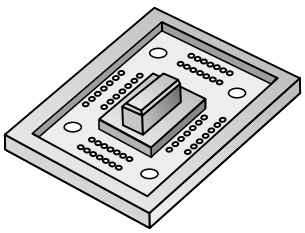
Code A
With Guide Post
w/o. Notch and w/o. Groove



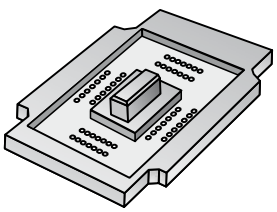
Code B
With Guide Post
w. Notch and w/o. Groove



Code C
With Guide Post
w/o. Notch and w. Groove

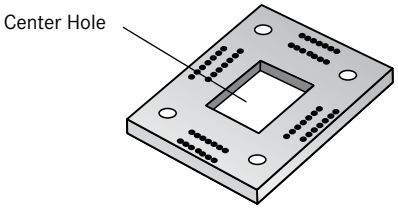


Code D
With Guide Post
w. Notch and w. Groove

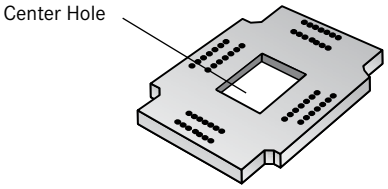


ORDERING CODES FOR NOTCHES AND GROOVES

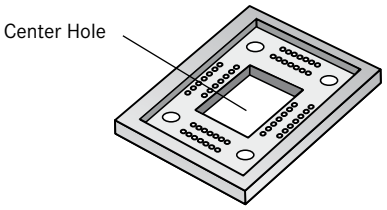
Code E
Without Guide Post
w/o. Notch and w/o. Groove



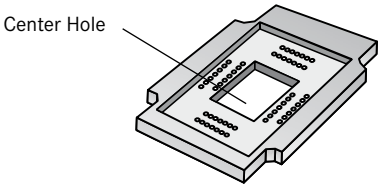
Code F
Without Guide Post
w. Notch and w/o. Groove



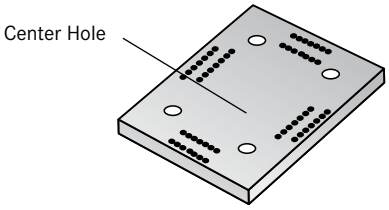
Code G
Without Guide Post
w/o. Notch and w. Groove



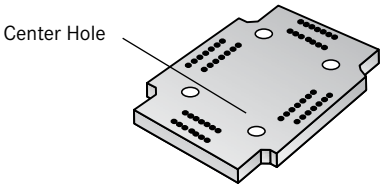
Code H
Without Guide Post
w. Notch and w. Groove



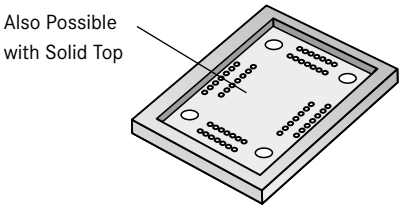
Code I
Solid Top without Guide Post
w/o. Notch and w/o. Groove



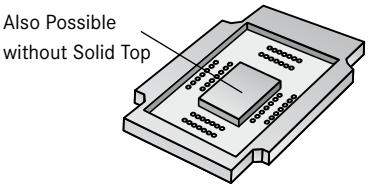
Code J
Solid Top without Guide Post
w. Notch and w/o. Groove



Code K
Solid Top without Guide Post
w/o. Notch and w. Groove

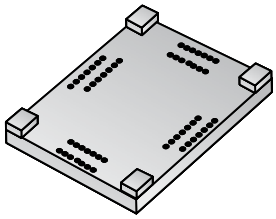


Code L
Solid Top without Guide Post
w. Notch and w. Groove

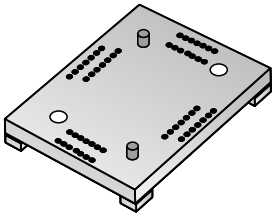


ORDERING CODES FOR SPECIAL REQUESTS

Code 1
With Stand-off Bottom Side

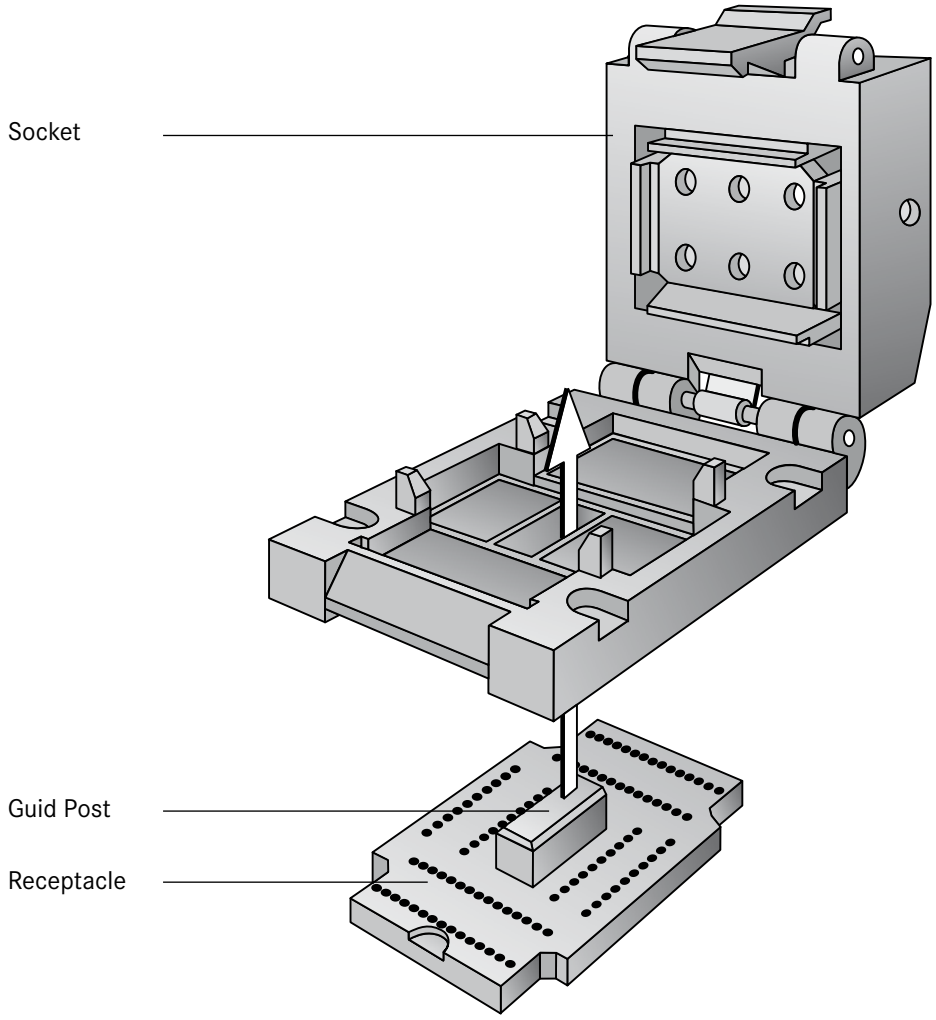


Code 2
With Stand-off or Customer's Specifications



DESIGN FEATURE	Receptacle Guid Post (Patented)
PURPOSE	Aligns the socket to the Receptacle
TECHNICAL ADVANTAGE	Prevents damage to the socket pins. Our system eliminates pin damage due to misalignment during socket insertion by using a Guide Post which goes through the socket before it contacts the socket pins

YAMAICHI'S PATENTED RECEPTACLE GUID POST



YAMAICHI ELECTRONICS

CONTACTING - SEMICONDUCTOR

SPRING PROBE PINS

YAMAICHI SPRING PROBE PINS
- AN EXELLENT CHOICE -

Task of the spring probe pin is to establish reliable contact to different IC packages such as QFP, BGA, QFN, LGA, and other semiconductor components with a pitch from ≥0.3 mm (ultra-low pitch) to 2.54 mm.

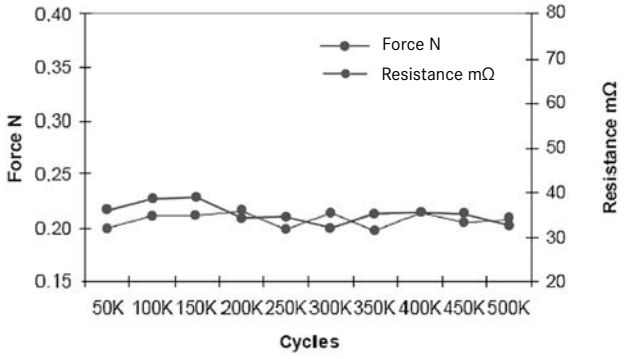
Besides semiconductor, wafer-level contacting and sensor testing, our spring probe pins can be used in areas such as medical/space, application testing, failure analysis, programming, burn-in (HAST/THB), PCB testing, and board-to-board connectors.

Contact reliability is the aim.
The concept of the spring contact combines guaranteed excellent mechanical and electrical characteristics:

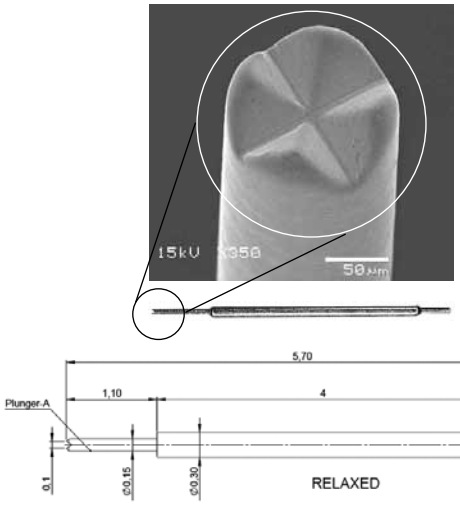
- Durable stable contact design with simultaneous lowest mechanical contact wear, i.e. no degradation of the contact force as well as minimised contact movement on the IC component or PCB contact pad.

- Low contact resistance (< 50mΩ), even with differing surfaces.

Typical Performance



Example: W-030/570-CTCO-P56



GENERAL SPECIFICATIONS

Mating Cycles:	>500,000
Contact resistance:	<50mΩ
Contact force:	~25g (typical)
Length:	from 1.00mm onwards
Diameter:	> 0.125mm
Operating temp. range:	40°C to +150°C

APPLICATIONS

- Semiconductor / Sensor Test
- Medical Application Test
- Space Application Test
- Failure Analysis
- Programming
- Burn-In / HAST / THB

FEATURES

- Exellent reliability
- Low contact resistance
- Outstanding matig cycles
- Ultra low pitch capability
- Broad variety of dimensions & plunger types

PART NUMBER (DETAILS)

W - 330 / 340 - CO CT P70

W = Double end (moving)
S = Single end (moving

Barrel Dia. (/100[mm])

Total Pin Length (/100[mm]) in relaxed postion

Other versions are available upon request.
Pin barrel ⌀ starts at ≥ 0.125mm

Design No.

B - Plunger (PCB)

A - Plunger (Device)

Plunger Types
CO = Conical

CT = Tapered Crown

CS = Staight Crown

BH = Headed Crown

R = Rounded

STOCK PRODUCTS (MOQ = 100 pins)

0.40MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-030/340-CTCO-P76	0.30	3.40	TAPERED CROWN	CONICAL	3.10	0.30	14.0g
W-030/570-CTCO-P56	0.30	5.70	TAPERED CROWN	CONICAL	5.05	0.65	20.0g
W-030/570-C0CO-P81	0.30	5.70	CONICAL	CONICAL	5.05	0.65	20.0g
W-030/340-CTCT-P58	0.30	3.40	TAPERED CROWN	TAPERED CROWN	3.10	0.30	20.0g
S-026/518-COCO-P18	0.26	5.18	CONICAL	CONICAL	4.80	0.38	20.0g

0.50MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-038/480-CTCO-P47	0.38	4.80	TAPERED CROWN	CONICAL	4.25	0.55	25.0g
W-035/762-CTCO-P35	0.35	7.62	CONICAL	CONICAL	7.00	0.62	20.0g
W-035/762-CTC0-P04	0.35	7.62	TAPERED CROWN	CONICAL	7.00	0.62	20.0g
W-035/686-COCO-P11	0.35	6.86	CONICAL	CONICAL	6.22	0.64	20.0g
W-035/762-CTC0-P14	0.35	7.62	TAPERED CROWN	CONICAL	7.00	0.62	20.0g
W-035/195-CTC0-P61	0.35	1.95	TAPERED CROWN	CONICAL	1.65	0.30	17.5g
W-035/195-C0C0-P73	0.35	1.95	TAPERED CROWN	CONICAL	1.65	0.30	17.5g

0.65MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-050/330-CTCO-P49	0.50	3.30	TAPERED CROWN	CONICAL	2.90	0.40	30.0g
W-050/330-CTCO-P49C	0.50	3.30	TAPERED CROWN	CONICAL	2.90	0.40	30.0g
W-050/330-CTCO-P46	0.50	3.30	TAPERED CROWN	CONICAL	2.95	0.35	26.0g

0.75MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-058/865-CTCO-P07	0.58	8.69	TAPERED CROWN	CONICAL	7.92	0.77	30.0g
W-058/696-CTCT-P01	0.58	6.96	TAPERED CROWN	TAPERED CROWN	6.20	0.76	42.0g
W-057/490-CSCO-P55	0.57	4.90	STRAIGHT CROWN	CONICAL	4.30	0.60	25.0g

1.00MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-076/863-BHCT-P69	0.76	8.83	HEADED CROWN	TAPERED CROWN	7.27	1.36	30.0g

1.27MM PITCH

Drawing Number	Barrel Dia. (mm)	Total Pin Length (relaxed)	A Plunger Shape	B Plunger Shape	Working Position (mm)	Stroke	Contact Force @ Working Pos.
W-102/863-BHR-P70	1.02	8.63	HEADED CROWN	ROUNDED	7.27	1.36	40.0g
W-102/863-BHCT-P68	1.02	8.63	HEADED CROWN	TAPERED CROWN	7.27	1.36	40.0g

YAMAICHI ELECTRONICS

CONTACTING - MODULES

QSEVEN - TEST ADAPTER

COMEXPRESS - TEST ADAPTER

CUSTOM - BEC TEST ADAPTER

SPECIFICATIONS

Operating Temp. : -30°C to +85°C

Pitch:	0.5mm
Mating Cycles:	100,000 (expected) (mechanical contact cycles at room temperature depending on customer environmental conditions)
Flex/Rigid:	Impedance Controlled Layerstack architecture according customer requirements and Qseven

PART NUMBER

YED900 - 230230 - N - Q7 - ***

- Series
- Pin Count
- Pitch
- Design No. (internal)

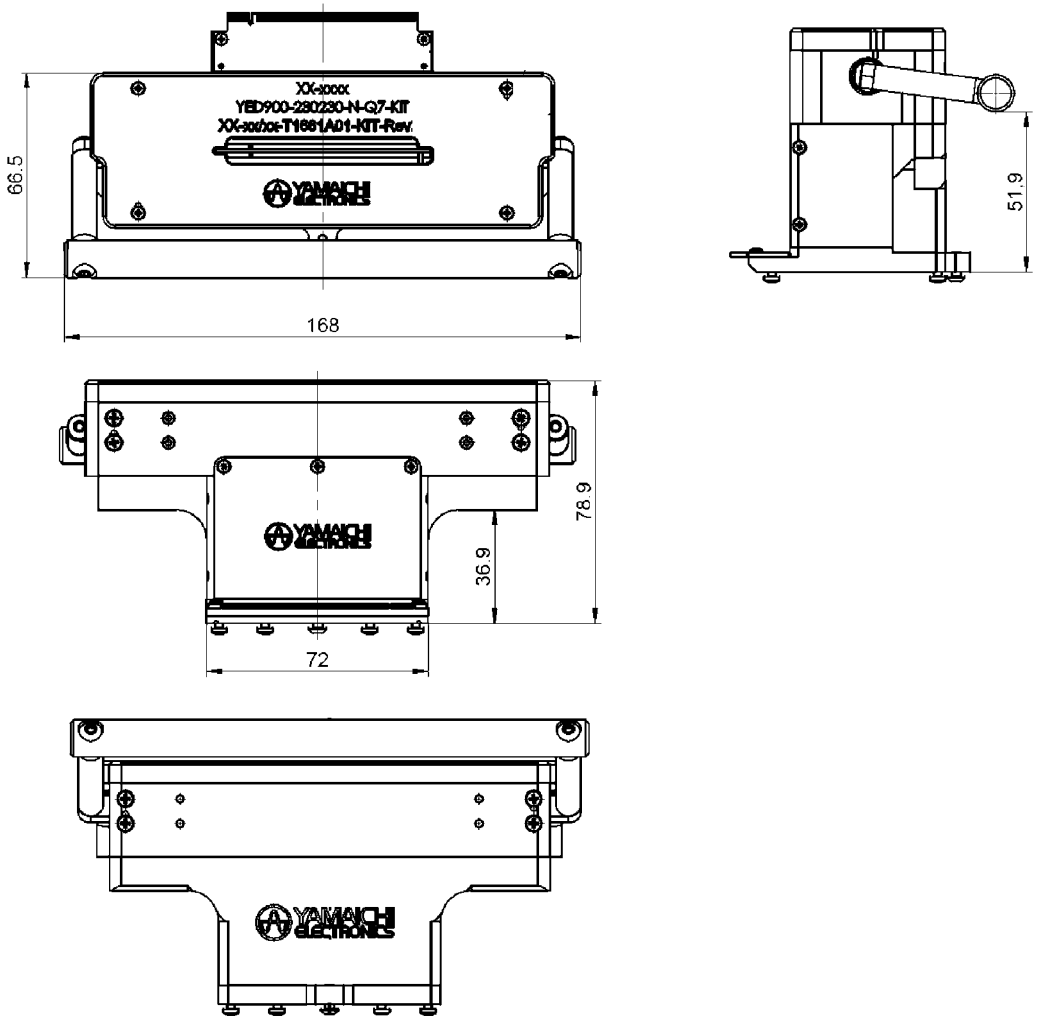
MATERIALS AND FINISH

Housing:	Peek / Anodized Aluminium
Contacts:	Beryllium Copper / Gold Plated over Nickel
Flex/Rigid:	Epoxy/Polymid, Multilayer
Contact Pad Surface:	Hard Gold

FEATURES

- Performance controlled system acc. to Qsenven
- Compatible to MXM Connector / Board Edge Connector 230 Pins (BEC)
- Flexible in module size
- In-line volume test
- Volume test ready

TYPICAL OUTSIDE DIMENSIONS



SPECIFICATIONS

Operating Temp. : -30°C to +85°C
Pitch: 0.5mm
Mating Cycles: 50,000 (expected)
(mechanical contact cycles at
room temperature depending on
customer environmental conditions)

PART NUMBER

YED900 - 440440 - N - CE - ***

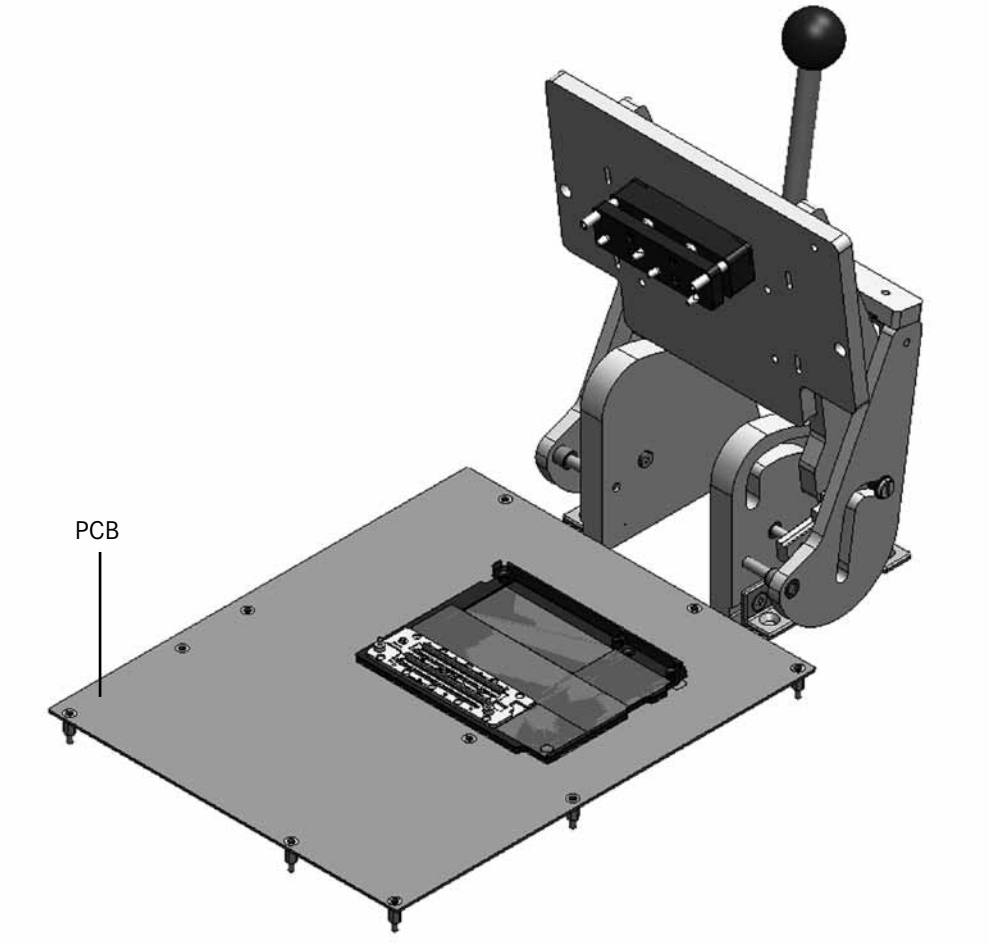
- Series
- Pin Count
- Pitch
- Design No. (internal)

MATERIALS AND FINISH

Housing: Peek / Anodized Aluminium
Contacts: Beryllium Copper / Gold Plated over Nickel
Contact Pad Surface: Hard Gold

FEATURES

- Reliable Probe Pin Technology
- Compatible to Standard ComExpress
- Flexible in module size
- In-line volume test
- Volume test ready
- Other Computer to Module Test Systems on request



SPECIFICATIONS

Operating Temp. : -30°C to +85°C
Pitch: 0.5mm
Mating Cycles: 100,000 (expected)
(mechanical contact cycles at
room temperature depending on
customer environmental conditions)
Flex/Rigid: Impedance Controlled
layerstack architecture
according customer requirements

PART NUMBER

YED274 - BEC-TESTADAPTER - ***

- Series
- Application:
  - Testadapter
  - Flash (Programming)
- Design No. (internal)

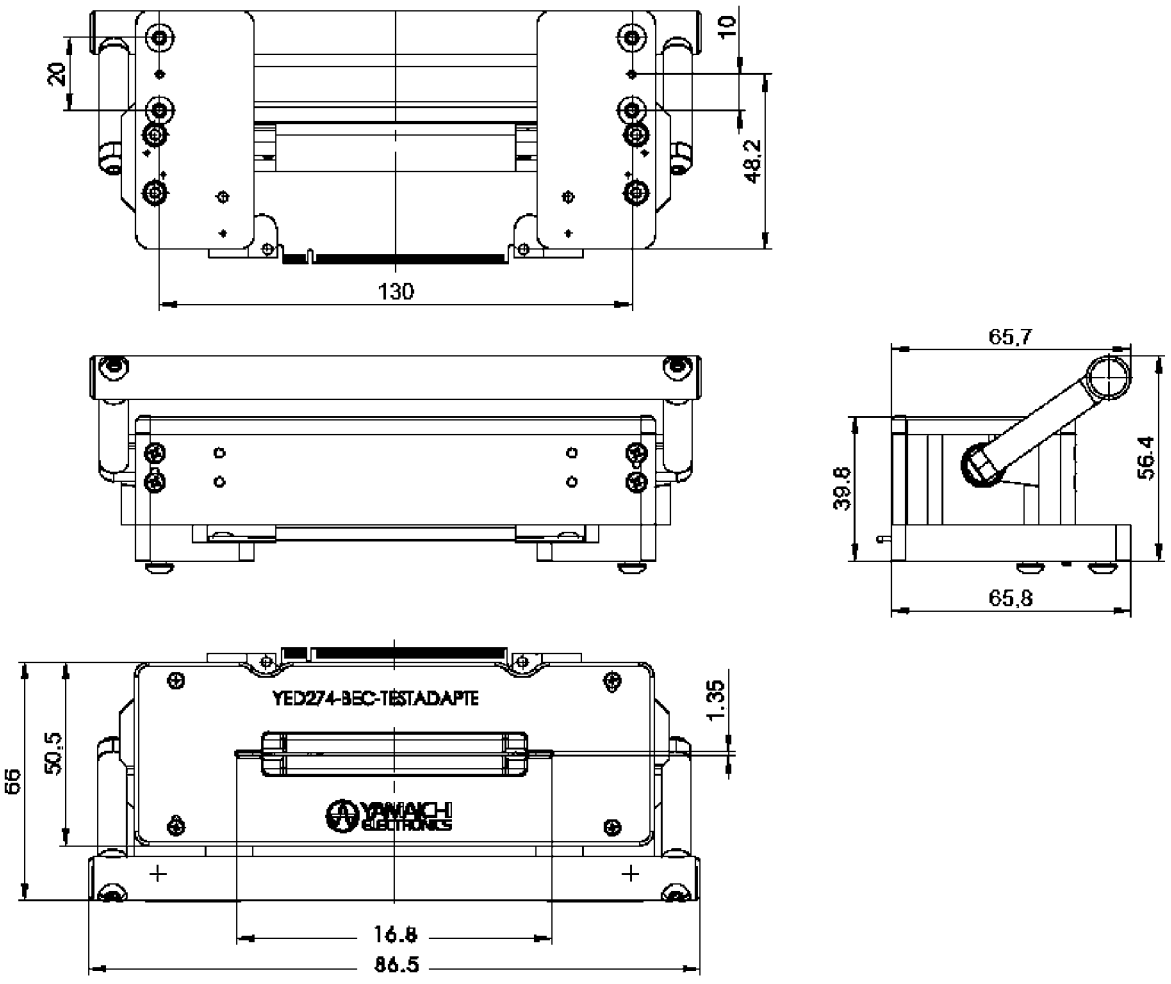
MATERIALS AND FINISH

Housing: Peek / Anodized Aluminium
Contacts: Beryllium Copper / Gold Plated over Nickel
Flex/Rigid: Epoxy/Polymid, Multilayer
Contact Pad Surface: Hard Gold

FEATURES

- Performance controlled system acc. to customized pinout
- Compatible to MXM Connector / Board Edge Connector 230 Pins (BEC)
- Flexible in module size
- In-line volume test
- Volume test ready

TYPICAL OUTSIDE DIMENSIONS



YAMAICHI ELECTRONICS

CONTACTING - MODULES

MEMORY MODULES

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

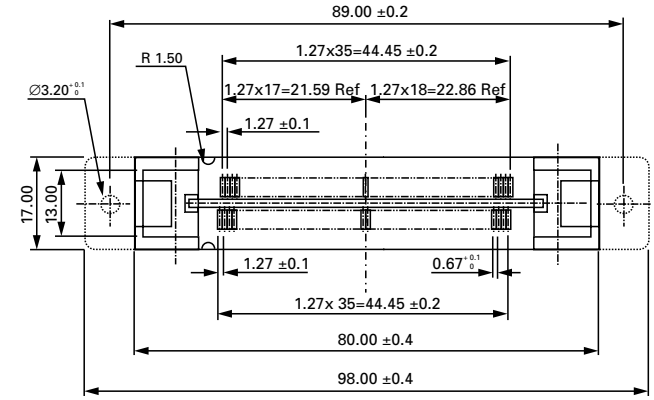
- 72 contact pins
- Card thickness 1.00mm

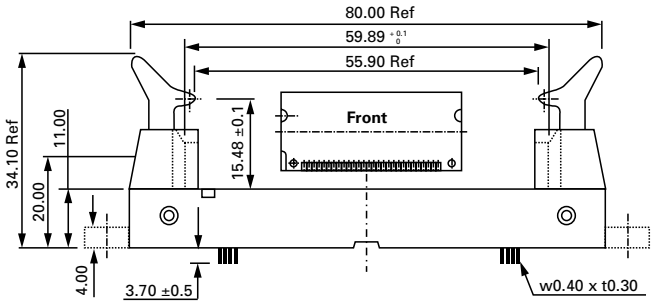
PART NUMBER

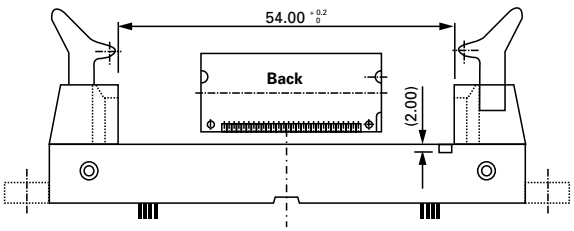
IC-554 - 1 - MF

- Series No.
- 1 = 72 Pins
- MF = Flanged
  Unmarked = Not Flanged

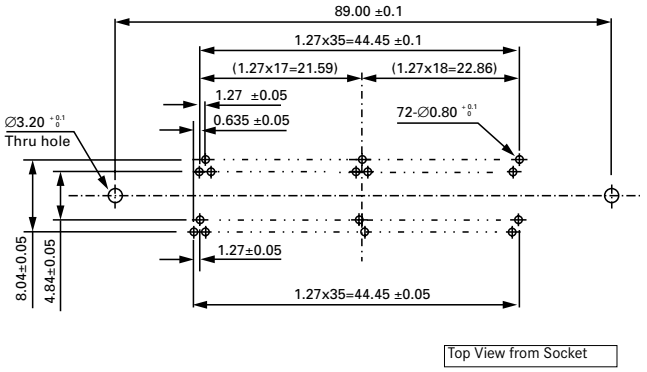
OUTLINE SOCKET DIMENSIONS



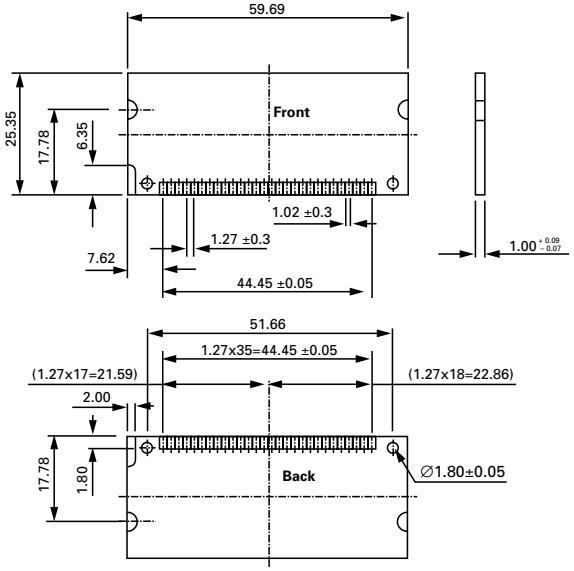




RECOMMENDED PCB LAYOUT



MATCHING MODULE DIMENSIONS



SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

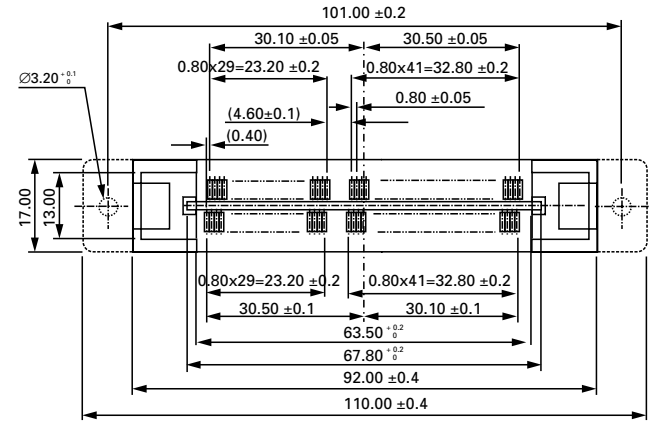
- 144 contact pins
- Card thickness 1.00mm
- 4 different positioning indicators

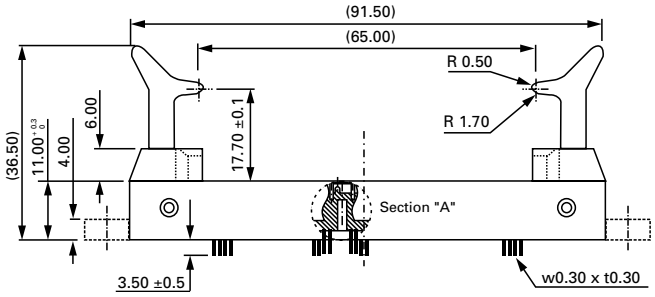
PART NUMBER

IC-497 - 1 - * MF

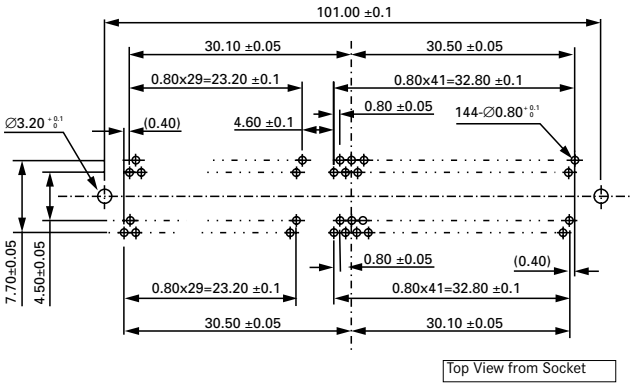
- Series No.
- Design No.
- Postioning Detail (see sec "A")
- MF = Flanged
  Unmarked = Not Flanged

OUTLINE SOCKET DIMENSIONS

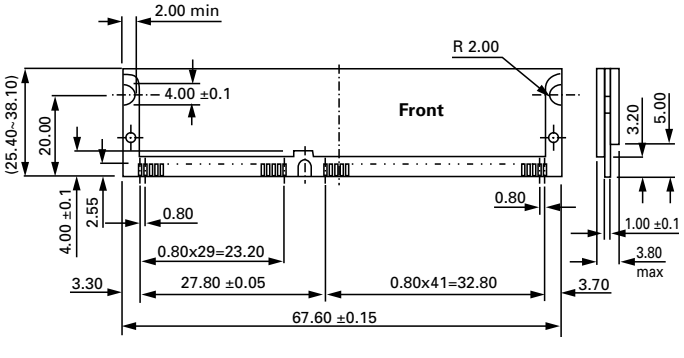


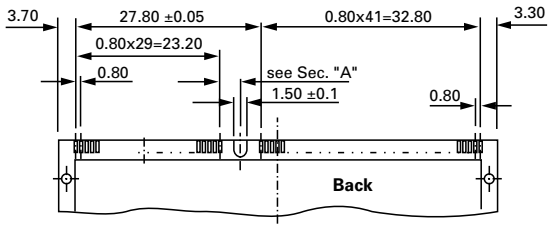


RECOMMENDED PCB LAYOUT

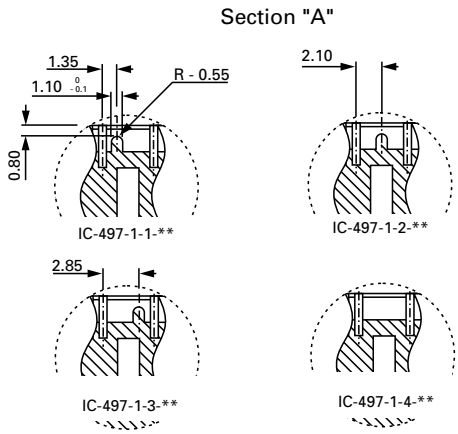


MATCHING MODULE DIMENSIONS





POSITIONING PINS



SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

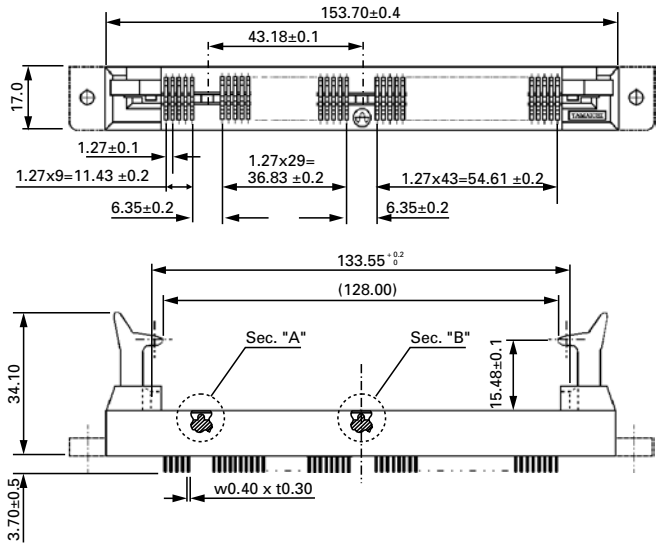
- 168 contact pins
- Card thickness 1.27mm
- 7 different positoning indicators
- Possible customer DIMM modules:
  Toshiba, NEC, OKI, Hitachi, Fujitsu, Siemens and Infineon

PART NUMBER

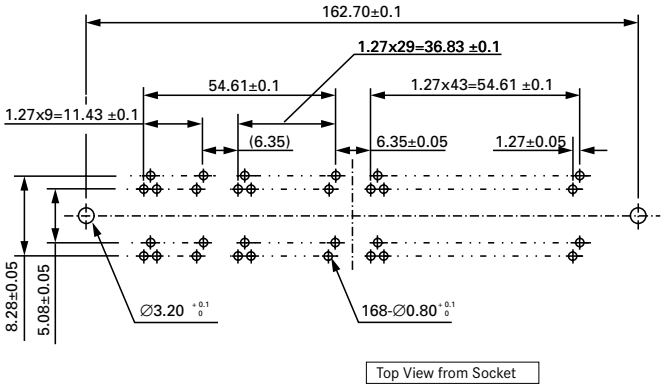
IC-438 - * - * - MF

- Series No.
- Possitioning Detail 1 (see Sec. "A")
- Possitioning Detail 2 (see Sec. "B")
- MF = Flanged
  Unmarked = Not Flanged

OUTLINE SOCKET DIMENSIONS

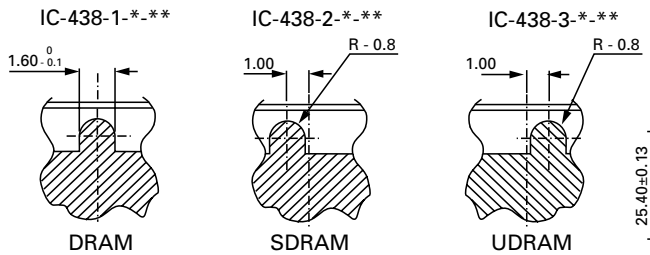


RECOMMENDED PCB LAYOUT

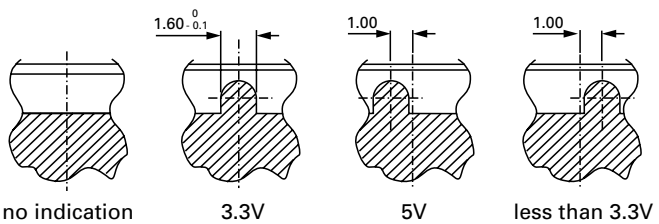


POSITIONING PIN DETAILS

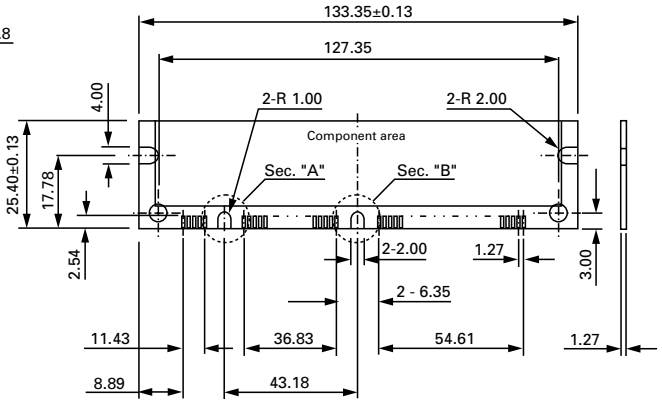
Section "A" (DRAM Key Indicators)



Section "B" (Voltage Key Indicators)



MATCHING MODULE DIMENSIONS



SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

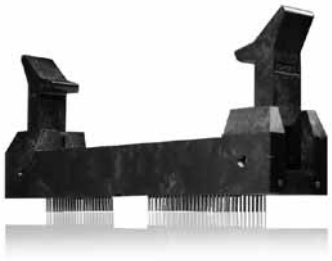
FEATURES

- 184 and 240 contact pins
- Card thickness 1.27mm with 1.00mm pitch

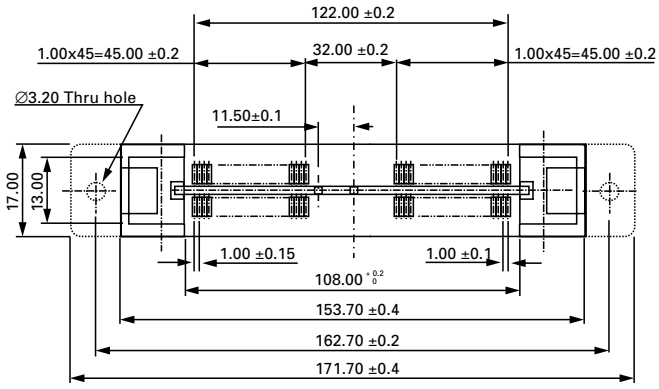
PART NUMBER

IC-595 - * - * - MF - *

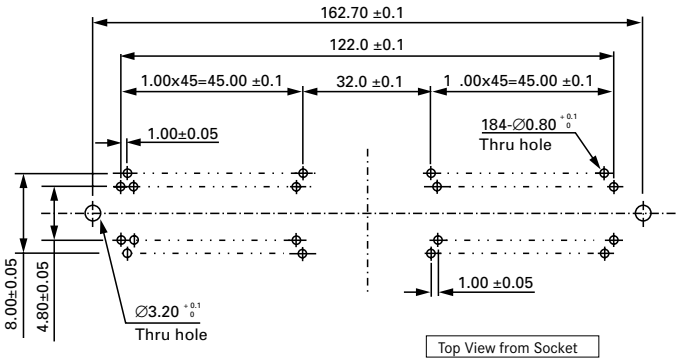
- Series No.
- 1= 184 Pins 2 = 240 Pins
- Design No.
- MF = Flanged
  Unmarked = Not Flanged
- Key Indicator (please contact Yamaichí)

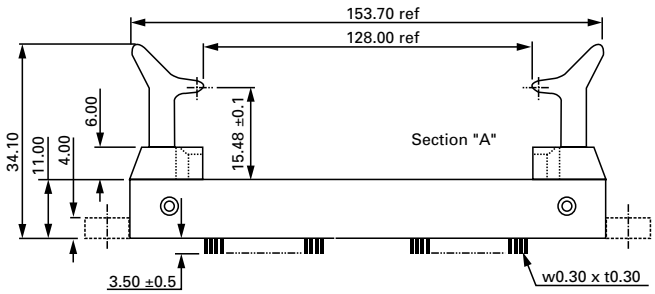


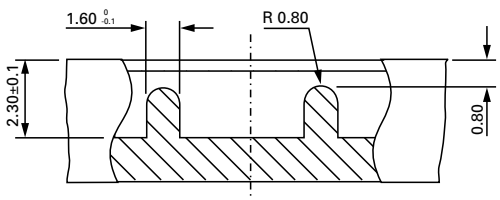
OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT (IC-595-1 ONLY)

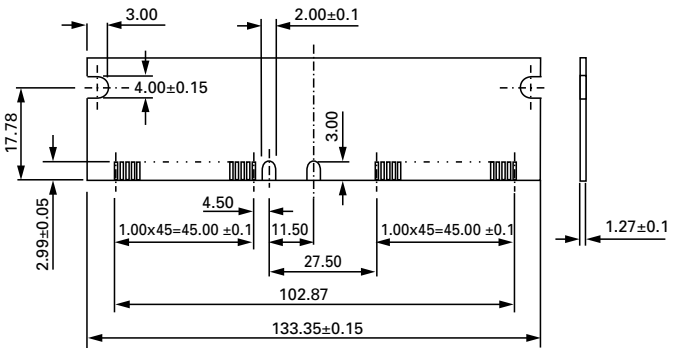






Section "A"
(IC-595-1 only)

MATCHING MODULE DIMENSIONS (IC-595-1 ONLY)



SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

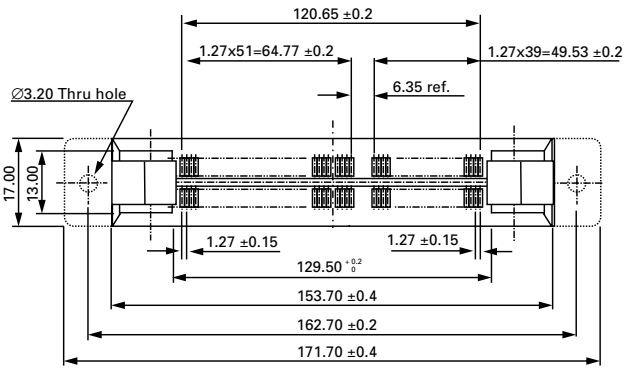
- 184 contact pins with 1.27mm pitch
- Card thickness 1.27mm

PART NUMBER

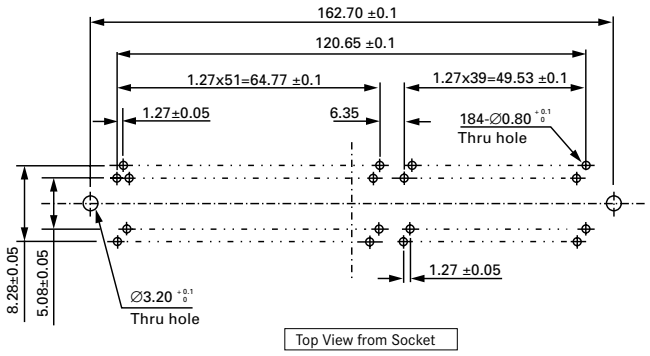
IC-589 - 1 - MF

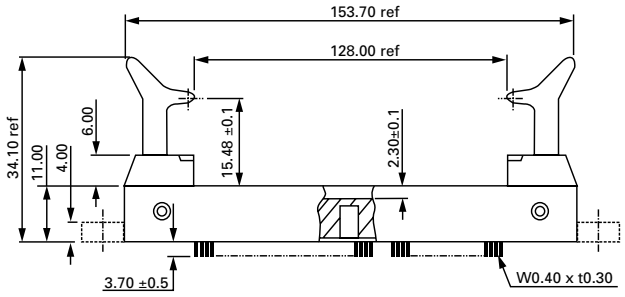
- Series No.
- Design No.
- MF = Flanged
  Unmarked = Not Flanged

OUTLINE SOCKET DIMENSIONS

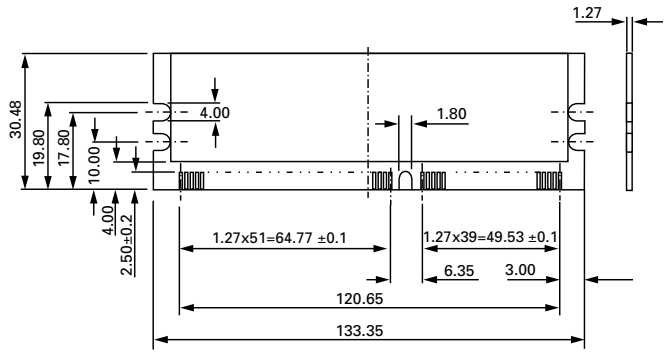


RECOMMENDED PCB LAYOUT





MATCHING MODULE DIMENSIONS



SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	–55°C to +170°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

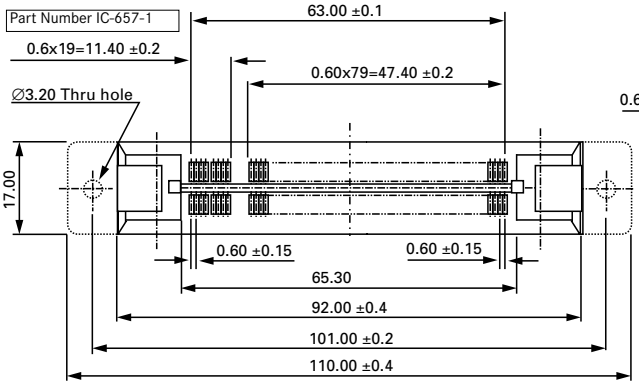
IC-657 - * - * MF

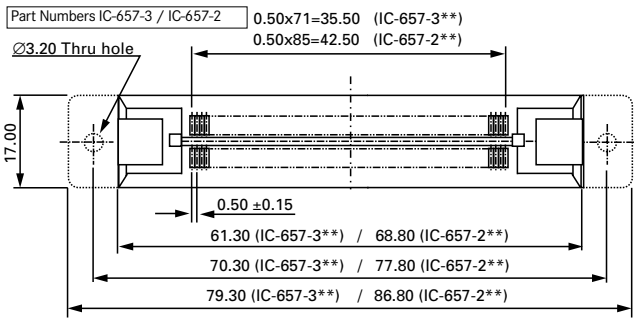
- Series No.
- 1 = 200 pins with 0.6mm Pitch
  2 = 172 pins with 0.5mm Pitch
  3 = 144 pins with 0.5mm Pitch
- Design No.
- MF = Flanged
  Unmarked = Not Flanged

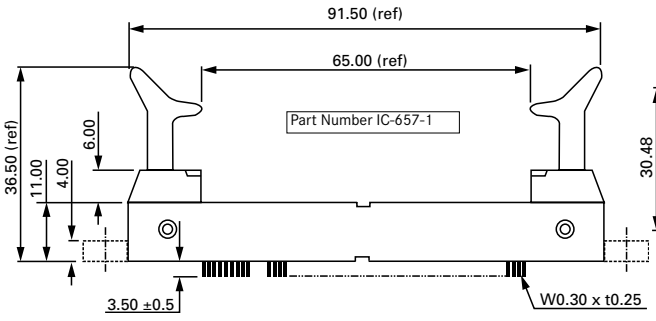
FEATURES

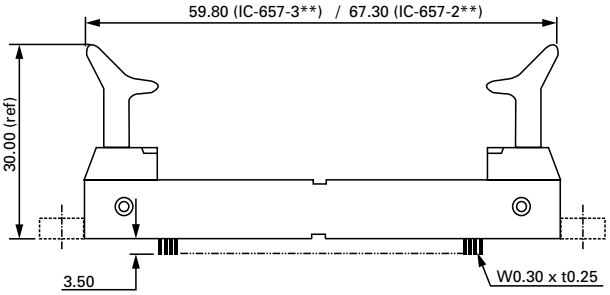
- 144 and 172 contact pins with 0.5mm pitch
- 200 contact pins with 0.6mm pitch

OUTLINE SOCKET DIMENSIONS

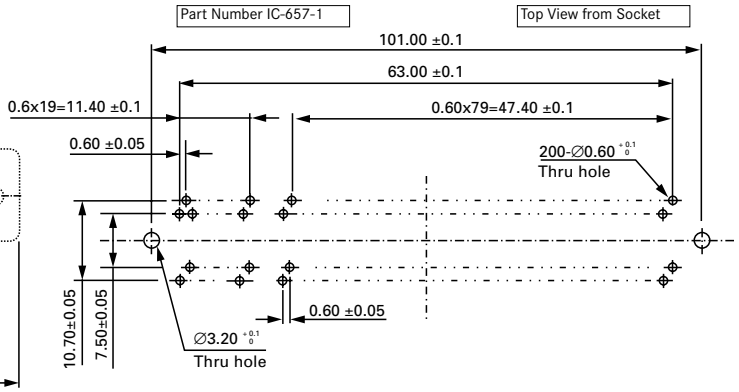


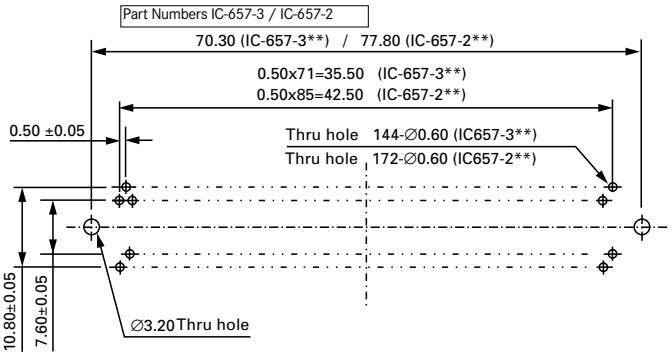




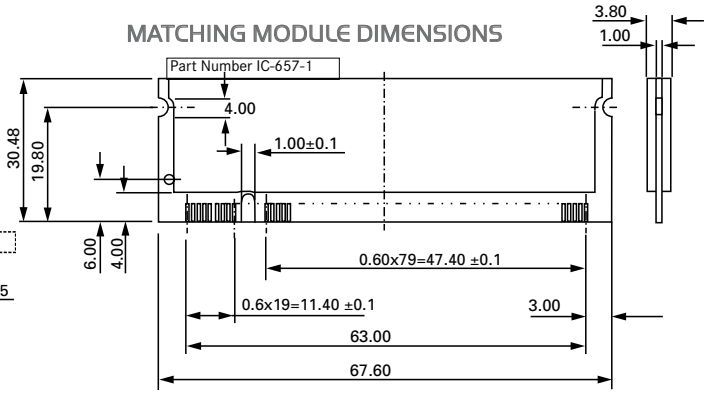


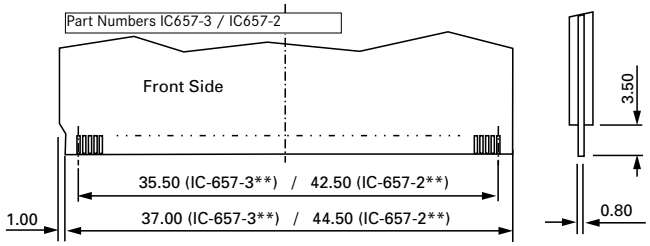
RECOMMENDED PCB LAYOUT





MATCHING MODULE DIMENSIONS





SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Current Rating:	1A max.
Operating Temperature Range:	–40°C to +150°C
Mating Cycles:	10,000 insertions min.

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

FEATURES

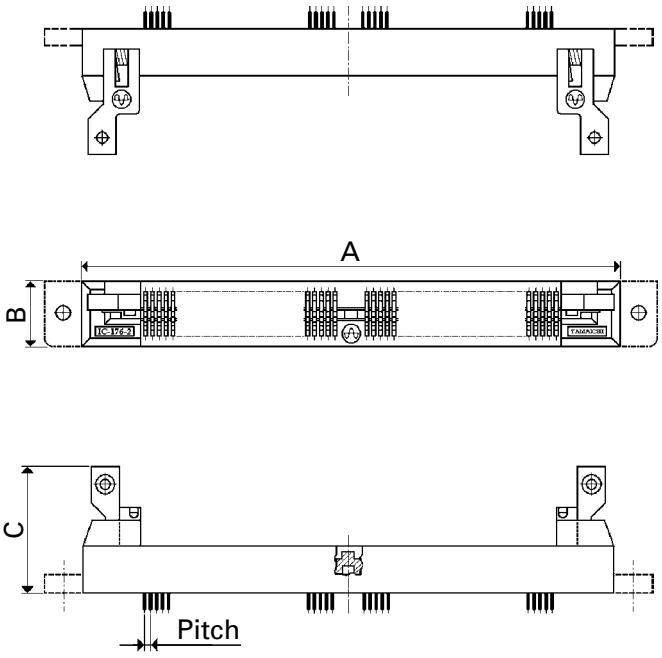
- Card thickness 1.27mm
- Kelvin type contact which utilizes both sides of the contact system
- Easy insertion and extraction by latch

PART NUMBER

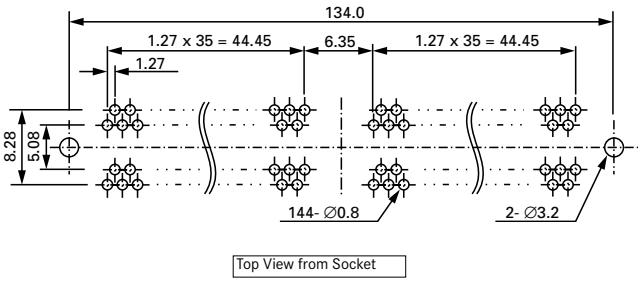
IC-176 - * - MF

- Series No.
- Design No.
- MF = Flange
  Unmarked = Not Flanged

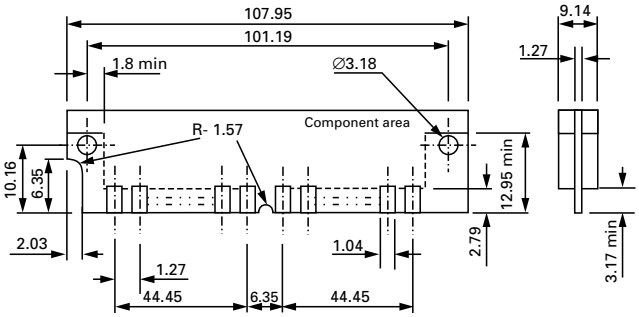
OUTLINE SOCKET DIMENSIONS



RECOMMENDED PCB LAYOUT (IC-176-2-**)



MATCHING MODULE DIMENSIONS (IC-176-2-**)



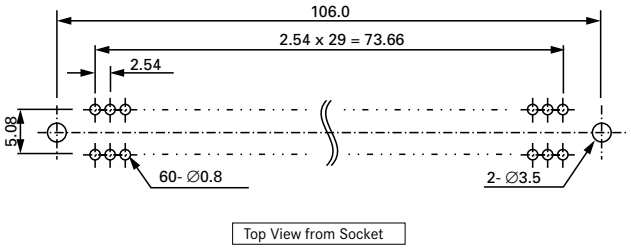
1.27MM PITCH

Part Number	Pin Count	A	B	C
IC-176-8-**	64	115.0	15	30
IC-176-2-**	72	125.0	15	30
IC-176-10-**	100	161.4	17	30

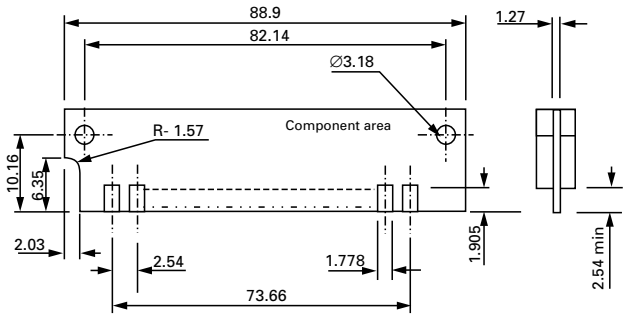
2.54MM PITCH

Part Number	Pin Count	A	B	C
IC-176-4-**	30	100.0	9	30
IC-176-6-**	35	115.0	9	30

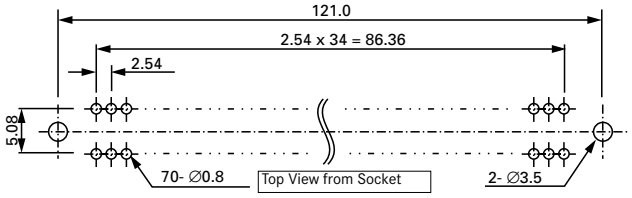
RECOMMENDED PCB LAYOUT (IC-176-4-**)



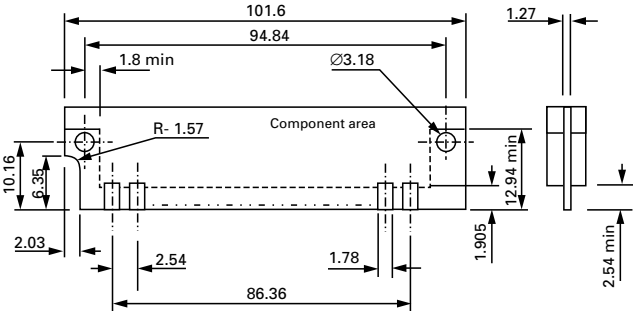
MATCHING MODULE DIMENSIONS (IC-176-4-**)



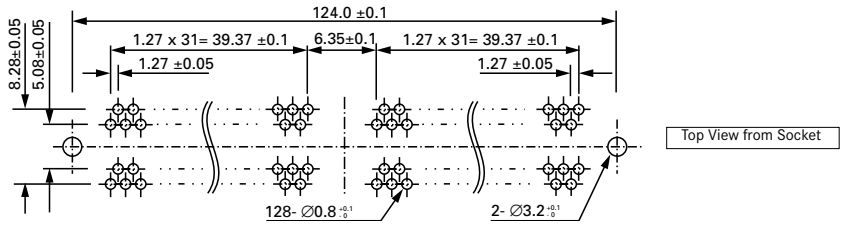
RECOMMENDED PCB LAYOUT (IC-176-6-**)



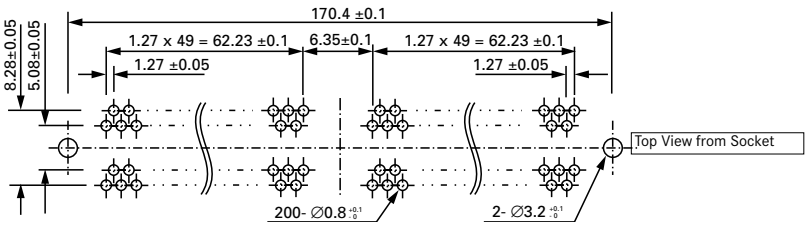
MATCHING MODULE DIMENSIONS (IC-176-6-**)



RECOMMENDED PCB LAYOUT (IC-176-8-**)



RECOMMENDED PCB LAYOUT (IC-176-10-**)



YAMAICHI ELECTRONICS

CONTACTING - MODULES

CARD EDGE CONNECTORS

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	10mΩ max. at 10mA/20mV max.
Current Rating:	3A
Operating Temperature Range:	–40°C to +170°C
Mating Cycles:	500 (1.75mm max. PCB thickness)

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel
Terminals:	Solder Plating over Nickel

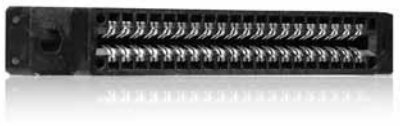
FEATURES

- Card thickness 1.6mm
- 2 terminal types available

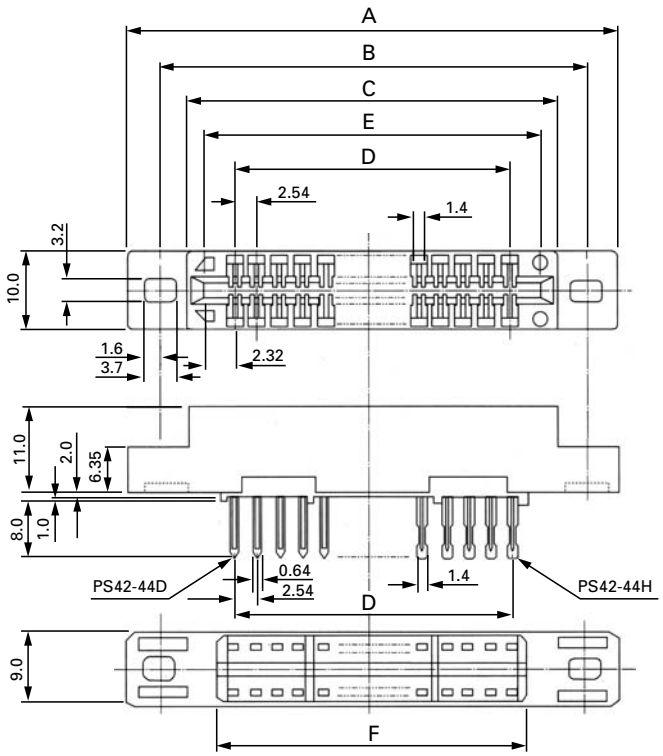
PART NUMBER

PS 4 2 - 44 * - * 16

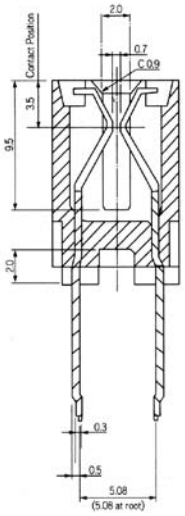
- Series No.
- Contact Pitch 4 = 2.54
- Design No. (internal use only)
- Contact Arrangement
  4 = Independent contacts on both sides
- Terminal Type:
  D = Solder Dip H = Eyelet
- No. of Pairs (No. of pairs = No. of Poles x2)
- Design No (internal use only)



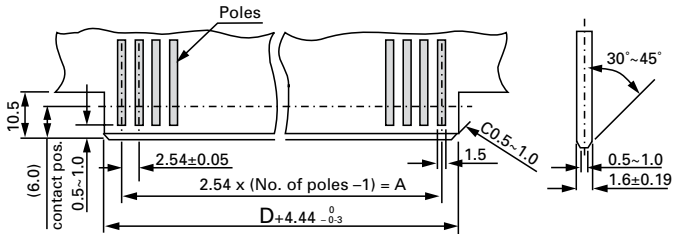
OUTLINE SOCKET DIMENSIONS



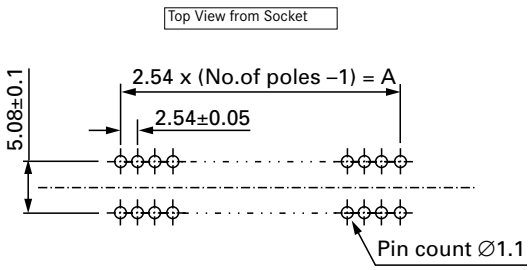
CONTACT DETAIL



MATCHING PCB DIMENSIONS



RECOMMENDED PCB LAYOUT



2.54MM PITCH

Part Number	Pin Count	A	B	C	D	E	F
PS42-44*-2016	40	71.50	64.50	57.30	48.26	52.90	54.40
PS42-44*-6016	120	173.10	160.10	158.90	149.86	154.50	156.00

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	10mΩ max. at 10mA/20mV max.
Current Rating:	3A
Operating Temperature Range:	–40°C to +170°C
Mating Cycles:	500 (1.75mm max. PCB thickness)

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel
Terminals:	Solder Plating over Nickel

FEATURES

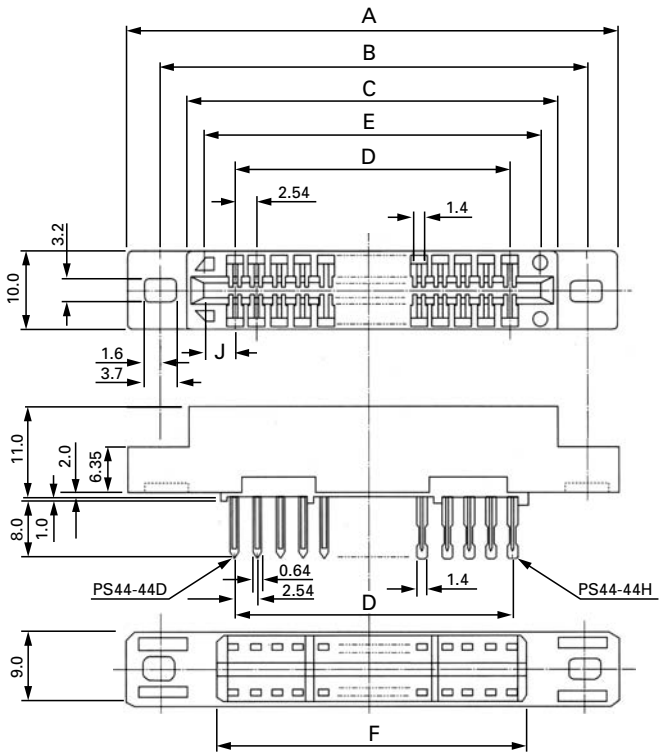
- Card thickness 1.6mm
- 2 terminal types available

PART NUMBER

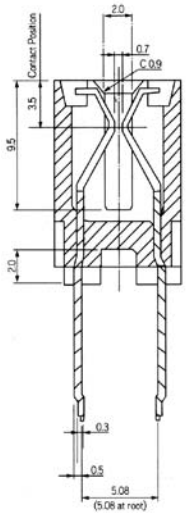
PS 4 4 - 44 * - * 11

- Series No.
- Contact Pitch 4 = 2.54
- Design No. (internal use only)
- Contact Arrangement 4 = Independent contacts on both sides
- Terminal Type: D = Solder Dip H = Eyelet
- No. of Pairs (No. of pairs = No. of Poles x2)
- Design No (internal use only)

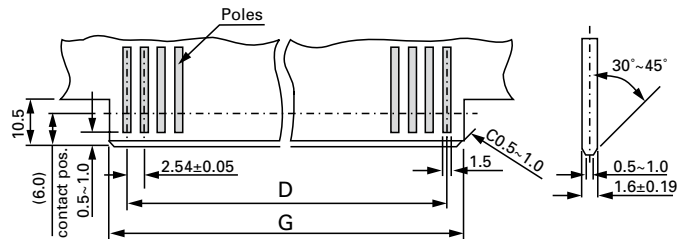
OUTLINE SOCKET DIMENSIONS



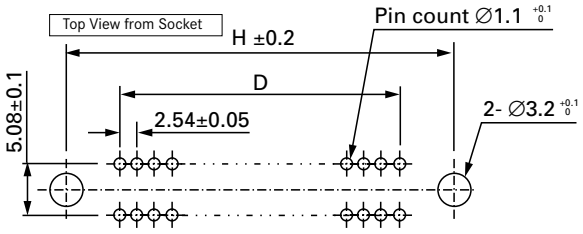
CONTACT DETAIL



MATCHING PCB DIMENSIONS



RECOMMENDED PCB LAYOUT



2.54MM PITCH

Part Number	Pin Count	A	B	C	D	E	F	G	H	J
PS44-44*-1411	28	56.77	50.17	42.16	33.02	38.00	39.37	37.8	49.67	2.4
PS44-44*-3011	60	97.41	90.81	82.80	73.66	78.64	80.01	78.44	90.31	2.4
PS44-44*-3611	72	112.65	106.05	98.04	88.90	93.88	95.25	93.66	105.55	2.4
PS44-44*-4311	86	130.43	123.43	115.82	106.68	111.66	113.03	111.46	123.33	2.4
PS44-44*-4411	88	132.97	126.37	118.36	109.22	114.20	115.57	114.00	125.87	2.4
PS44-44*-5011	100	148.21	141.61	133.60	124.46	129.44	130.81	129.24	141.11	2.4

SPECIFICATIONS

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	100V AC for 1 minute
Contact Resistance:	10mΩ max. at 10mA/20mV max.
Current Rating:	3A
Operating Temperature Range:	–40°C to +170°C
Mating Cycles:	500 (1.75mm max. PCB thickness)

MATERIALS AND FINISH

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel
Terminals:	Solder Plating over Nickel

FEATURES

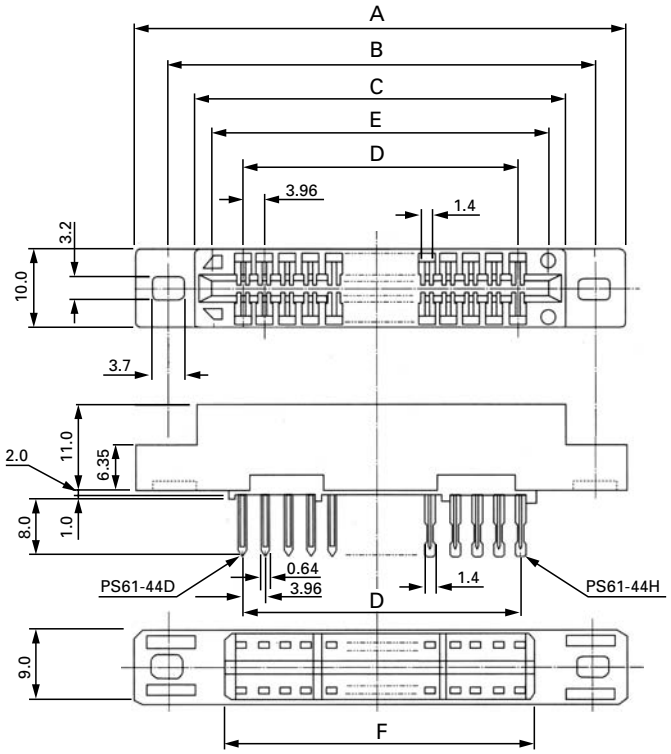
- Card thickness 1.6mm
- 2 terminal types available

PART NUMBER

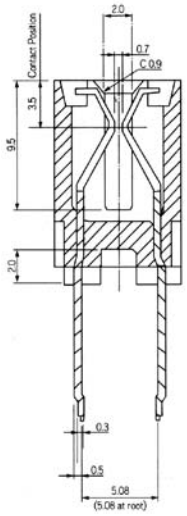
PS 6 1 - 44 * - * 11

- Series No.
- Contact Pitch 6 = 3.96
- Design No. (internal use only)
- Contact Arrangement
  4 = Independent contacts on both sides
- Terminal Type:
  D = Solder Dip H = Eyelet
- No. of Pins
- Design No (internal use only)

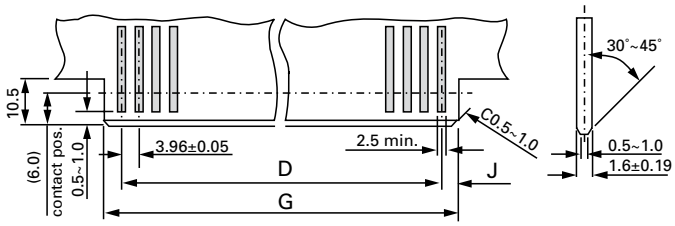
OUTLINE SOCKET DIMENSIONS



CONTACT DETAIL

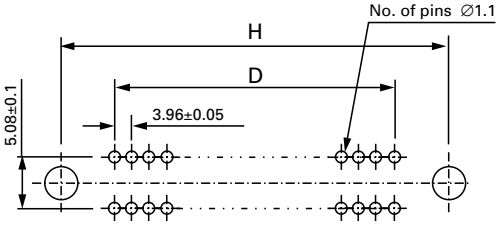


MATCHING PCB DIMENSIONS



RECOMMENDED PCB LAYOUT

Top View from Socket



3.96MM PITCH

Part Number	Pin Count	A	B	C	D	E	F	G	H	J
PS61-44*-3611	36	94.59	86.51	79.35	67.32	75.49	72.75	75.29	86.51	1.1
PS61-44*-4411	44	110.45	102.36	95.20	83.16	91.34	88.59	91.14	102.36	1.3
PS61-44*-7211	72	165.91	157.84	150.67	138.60	146.81	144.07	146.61	157.84	4.1
PS61-44*-8611	86	193.65	185.57	178.41	166.32	174.55	171.81	174.35	185.57	4.2
PS61-44*-8811	88	197.61	189.58	182.37	170.28	178.51	175.77	178.31	189.53	4.2

YAMAICHI ELECTRONICS

CONTACTING - MODULES

FFC / FPC CLIP CONNECTOR

TCP / TAB (TAPE PACKAGES)

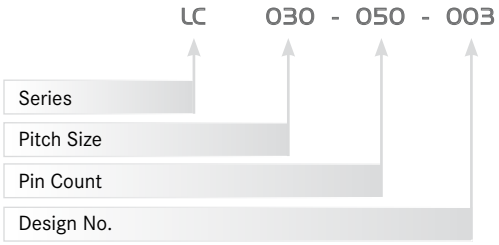
SPECIFICATIONS

Contact Resistance:	<50mΩ
Contact Force:	~30g (typical)
Operating Temp. Range:	20°C to +85°C
Mating Cycles:	>10,000 times

MATERIALS AND FINISH

Plating: Gold over Nickel

PART NUMBER



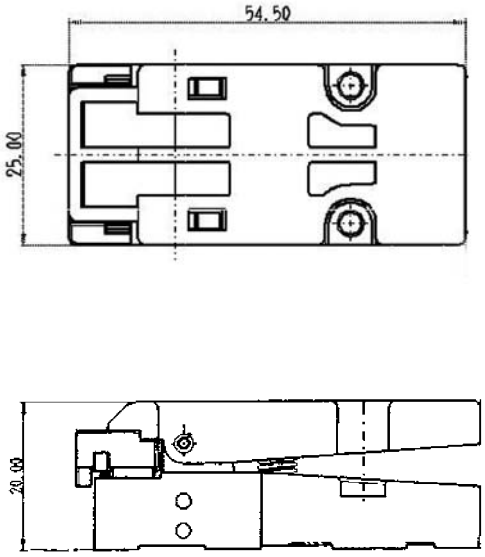
FEATURES

- Clip type socket
- Proven stamped contact
- Outstanding contact reliability with wiping action
- Ultra low pitch capability (0.3mm staggered)
- Minimized pad damage
- Elevator FPC stage (protect FPC and contact damage)

APPLICATION

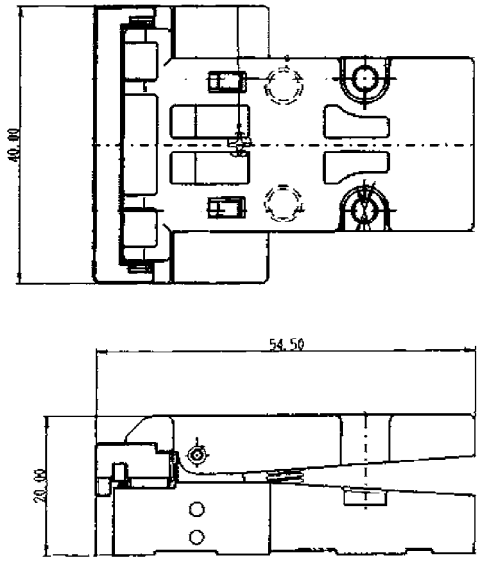
- Testing Jig for modules with FPC / FFC

BASE SOCKET FOR ALL OTHER CONNECTORS



OUTLINE SOCKET DIMENSIONS

LC050-060-009



*in planning

Base Socket	FPC Pitch (mm)	Pin Count	Dim. W x L x Ht.	Dim. W x L x Ht. with PCB
LC030-039-003	0.3mm (staggered)	up to 39	25.0 x 54.5 x 20.0	70.1 x 91.0 x 20.0
LC030-051-002	0.3mm (staggered)	40 to 51	25.0 x 54.5 x 20.0	95.5 x 91.0 x 20.0
LC040-038-001	0.4mm (in-line)*	up to 38	25.0 x 54.5 x 20.0	70.1 x 91.0 x 20.0
LC050-030-008	0.5mm (in-line)	up to 30	25.0 x 54.5 x 20.0	57.4 x 91.0 x 20.0
LC050-060-009	0.5mm (in-line)	31 to 60	40.0 x 54.5 x 20.0	95.5 x 91.0 x 20.0

SPECIFICATIONS

Insulation Resistance:	10,000MΩ min. at 100V DC
Withstanding Voltage:	500V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temp.Range:	–40°C to +150°C
Contact Force:	11gf per pin approx.

MATERIALS AND FINISH

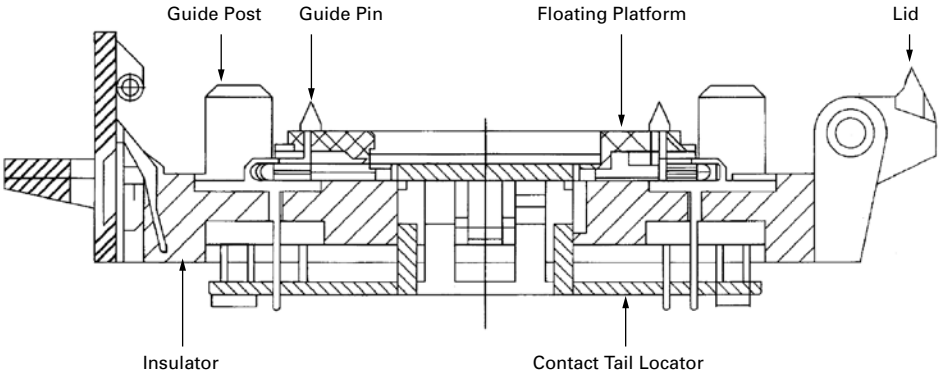
Housing:	Polyetherimide (PEI), glass-filled
	Polyethersulphone (PES), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel

PART NUMBER

IC51 - 324 4 - 1333-*

- Series No.
- No. of Contact Pins
- Number of Sides with Contacts
- Design Number

EXAMPLE CROSS SECTION FOR A 35MM TAPE – 0.4MM PITCH – 244 PINS



SOCKET

Part Number	Tape Size	Pitch
IC51-1964-1190-1	35mm	0.5 mm
IC51-2444-1191-1	35mm	0.4 mm
IC51-3244-1333-1	35mm	0.3 mm
IC51-4364-1334-1	48mm	0.3 mm
IC51-5324-1551	48mm	0.25 mm
IC51-4364-1467-1	70mm	0.5 mm
IC51-5484-1468-1	70mm	0.5 mm

CARRIER

Part Number	Tape Size	Window Size	Super	Width	Carrier Style
TAB-35006	35mm	24.0 mm	X		Hinge Type
TAB-35015	35mm	24.0 mm	X		Sandwich Type
TAB-48017	48mm	32.8 mm	X		Sandwich Type
TAB-48018	48mm	32.8 mm		X	Sandwich Type
TAB-70009	70mm	52.0 mm		X	1 Pc. Type
TAB-70019	70mm	52.0 mm	X		Sandwich Type
TAB-70022	70mm	52.0 mm		X	Sandwich Type

YAMAICHI ELECTRONICS

PCB SOLUTIONS

YAMAICHI PCB-DESIGN
- EXCEED EXPECTATIONS -

Providing full functional PCB's according customers specification is not just an order – deliver process it's even more an based on close partnership development process.

Our aim is to get the whole picture of your need's - bring in our more as fifteen years experience – and express potential concerns clearly from the beginning.
We belief that this very close coordination finally leads to superior products and ensure a plug-and-play functionality.

Client-specific dedication is the "fuel" which generates innovative solutions.

Take all aspects under consideration by using the "tools"

- Dedication
- Experience
- Creativity
- Latest tools

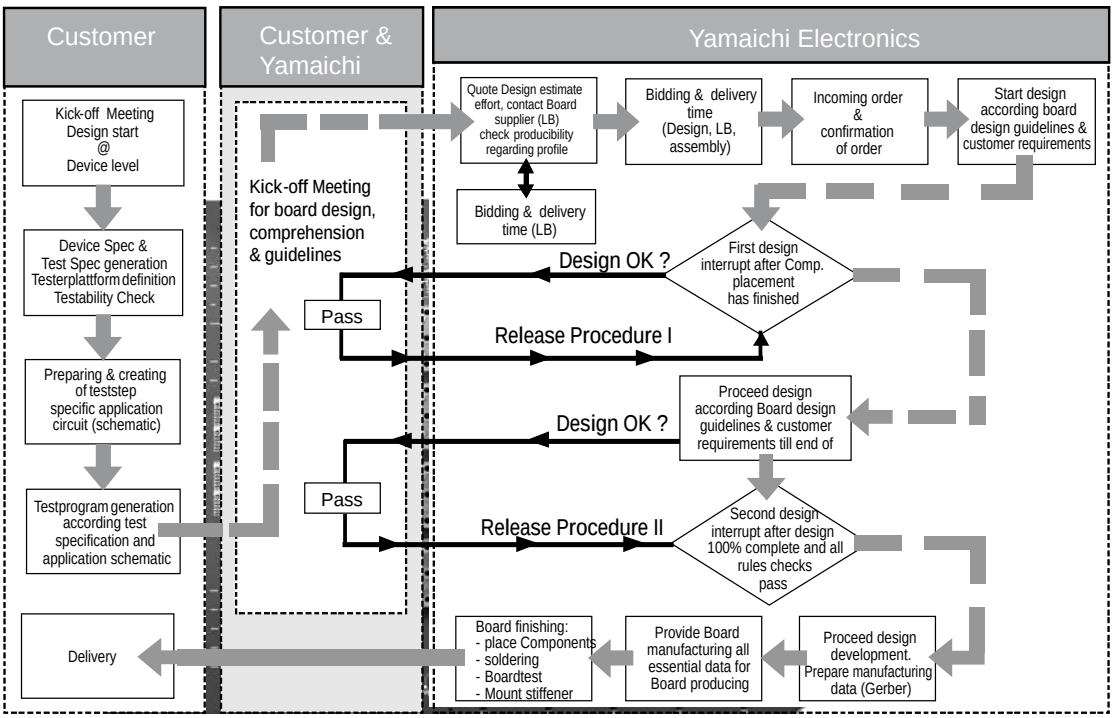
leads to highest possible degree of quality and cost-effective solutions.

Be with us and discover another dimension!

As a full service provider we offer

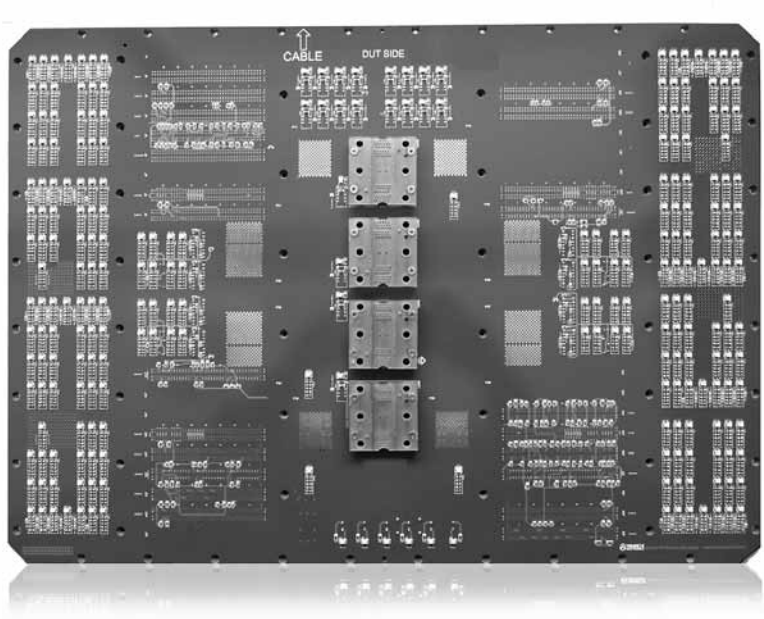
- Design (PCB / Hardware)
- Simulations (Electrical / Thermal)
- Manufacturing
- Assembly
- Consulting service

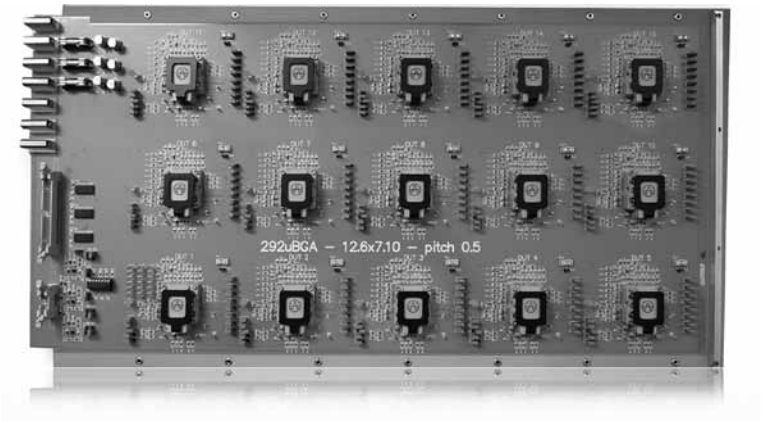
WORK FLOW EXAMPLE



DESIGN EXAMPLES

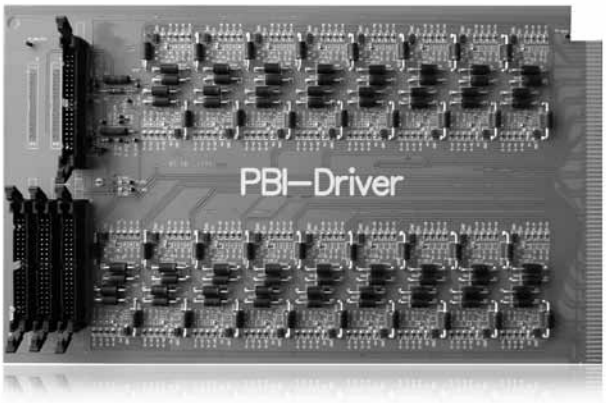
DIB - FINAL TEST
APPLICATION (X4)



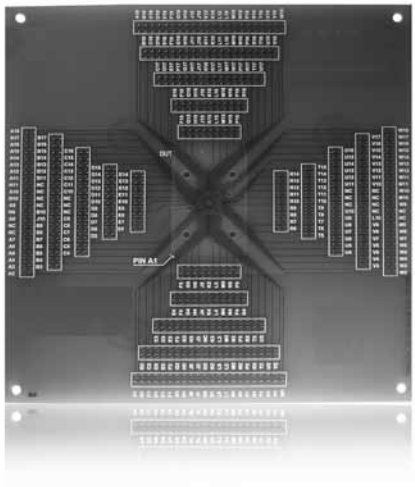


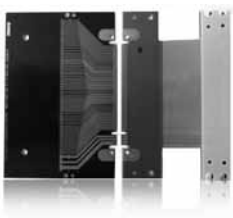
HTOL TEST BOARD

POWER BURN-IN
DRIVER BOARD



QUALIFICATION TEST
BOARD





RIGID - DUAL FLEX
HIGH SPEED BOARD

YAMAICHI ELECTRONICS

SPECIALITIES

HIGH-REL APPLICATIONS

DOCKINGS

SEMI-AUTOMATIC TEST CELLS

TEST FIXTURES FOR AUTOMATION INDUSTRY

GENERAL INFORMATION

Yamaichi Test Solution products and specialities are RoHS conform and produced in accordance with the lead-free regulations.

The specialities are designs in close cooperation with the customer and according their requirements.

Yamaichi has more than 100 contact interfaces with multiple plunger styles for pitches between 0.40 and 2.54mm in stock.

We can vary in base, spring and plating material.
- Custom contacts are available as well as several elastomeric contact interfaces.
- Alternatively we can also provide stamped, etched or eroded contacts.

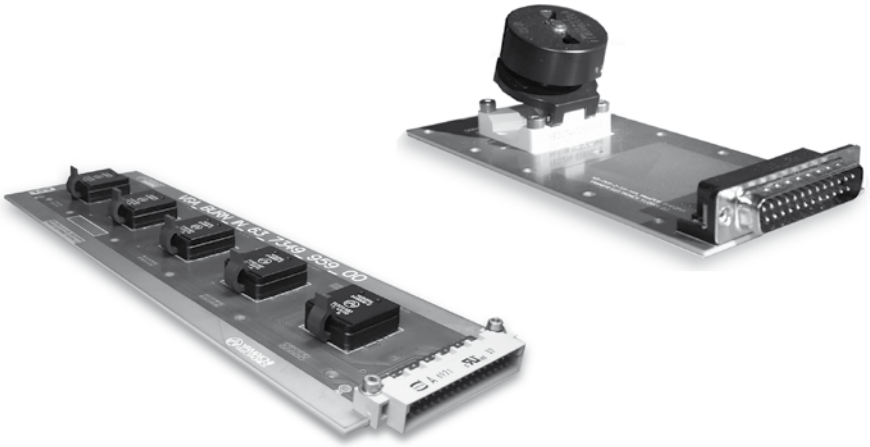
For milled mechanical and isolator piece parts we use high temperature and high resistance proofed plastic materials. Materials with a controlled reduced resistivity are available as well.

The examples on the following pages give only a small overview about the variety of our product range.

Yamaichi's Test Solution specialities combines conventional reliable contacting solution with State-of-the-Art technology.

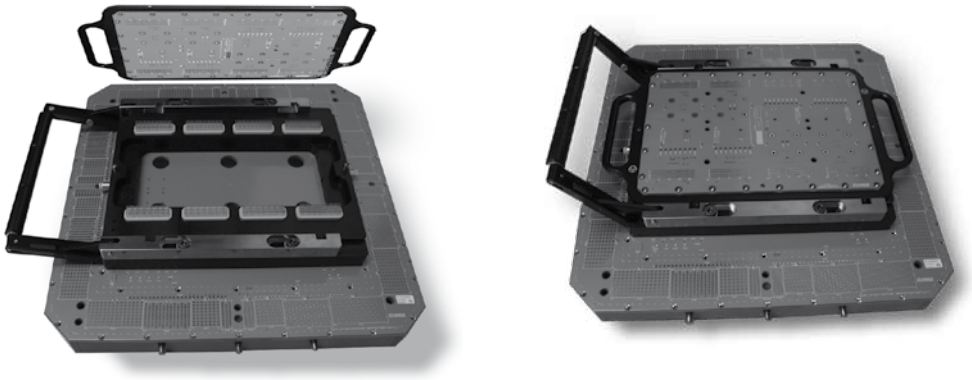
HIGH-REL APPLICATIONS

FEATURES
- Integrated customised PCB designs
- Outstanding performance
- No pitch restrictions
- HF capable



DOCKINGS

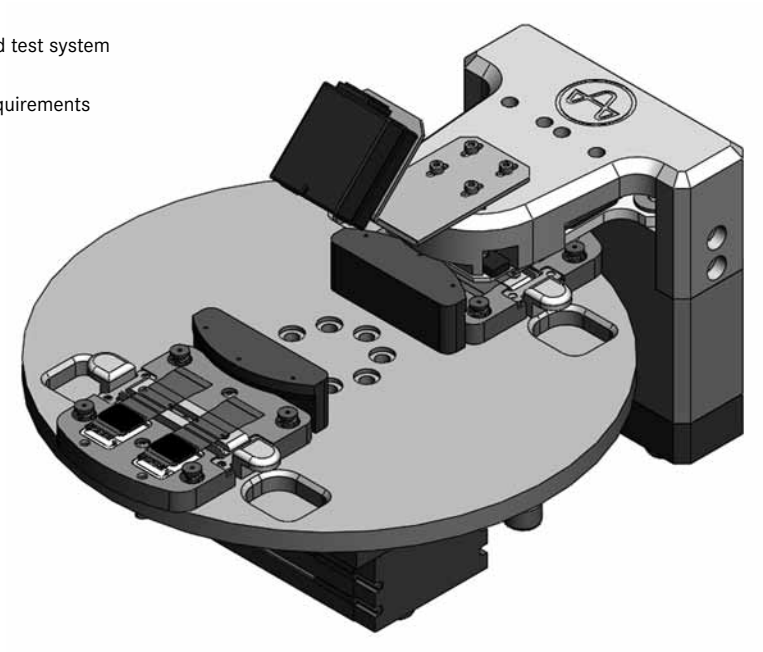
FEATURES
- Designed for customers own requirements
- Integrated customised PCB designs
- Outstanding performance
- Complete test system
- HF capable



SEMI-AUTOMATIC TEST CELLS

FEATURES

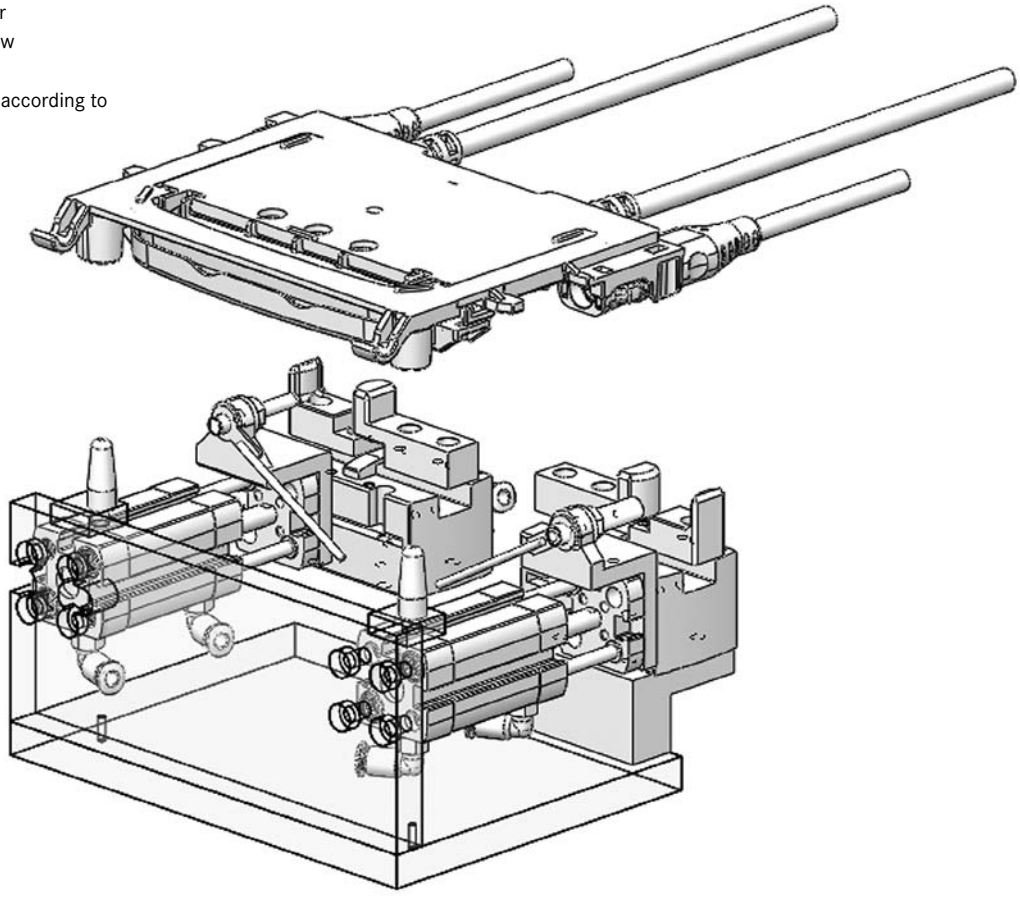
- Pneumatic or mechanically controlled test system
- Probe Pin technology
- Designed according to customers requirements



TEST FIXTURES FOR AUTOMATION INDUSTRY

FEATURES

- Contact Unit designed for customers production flow
- In-Line Contact Unit
- Specification and design according to customers requirements



1. General

1.1 Our conditions of sale and delivery (in what follows “terms of business”) apply exclusively to all of our business relationships with entrepreneurs, as understood in § 14 BGB - German Civil Code - (in what follows “purchasers”), as of 1st January 2011, whether entered into for the first time, ongoing or to be entered into in the future.They are also valid even in the event that when the respective business relationship is concluded they are not then referred to again.

1.2 Terms of our contractual partners that differ from our own terms of business will not be recognised unless we have expressly agreed to their validity in writing.

2. Offers, orders, conclusion of a contract

2.1 Our offers are in principle non-binding and subject to confirmation unless they are explicitly designated as binding offers. The sending of our price list(s) is not to be regarded as an offer. The technical information, details of use and product descriptions contained in our brochures and other sales documents contain no offer to sign a guarantee agreement as it is outlined in § 443 BGB**.

2.2 Ordering a product and/or service includes the binding offer on the part of the purchaser to purchase that product or service. We are entitled to accept the contractual offer implicit in the order within two weeks of receiving the order. The acceptance of the offer can be made by us either in writing or by means of the delivery/execution to/for the purchaser of the product/service ordered. We reserve the right to refuse orders and to do so without written declaration or providing more detailed reasons for such decisions. If in doubt, no response from us after the expiry of the deadline for acceptance should be taken as rejection.

2.3 If the order is made electronically we will confirm receipt of the order immediately. The confirmation of receipt itself still does not constitute any binding acceptance of the order; however it can be conjoined with a declaration of acceptance on our part.

2.4 In the case of verbally agreed contracts the scope of service of our deliveries will be determined through our written affirmation of the contract.

3. Delivery

3.1 Partial deliveries or services rendered in part are permissible and oblige our contractual partner to pay the proportional price unless the partial delivery or service is unacceptable to them.

3.2. For supply contracts on demand the whole set of orders counts as having been ordered by the purchaser one calendar month after the expiry of the deadline agreed for the order or, if there is no agreed deadline, three calendar months after the contract is signed.

3.3. If the purchaser is entitled to the division of the on call contingents and does not conduct the division within one calendar month of the expiry of the respectively agreed order deadline or, if such a deadline has not been set, one month after requested by us, we may divide, deliver and charge for the complete set of orders at our discretion.

3.4 Our deliveries are made “ex works Munich” as long as nothing else has been explicitly agreed upon. In the case of a delivery “ex works” the seller’s and purchaser’s duties regarding the method of delivery are determined according to the International Commercial Terms (INCOTERMS® 2010) in their current amendment.

3.5 The delivery and service deadlines stated by us are non-binding and subject to confirmation; they can be affected by delay in supply or production, or disruptions to operations. In the case of subsequent contractual amendments or supplementations, the delivery deadlines and dates will begin anew or be postponed correspondingly, even if they had already been confirmed by us beforehand. This holds insofar as in each respective case no differing agreement has been reached with the purchaser.

3.6 Should we default on delivery for reasons for which we are responsible, our liability will be limited to the foreseeable and direct average damage.

4. Default on acceptance

4.1 Should the purchaser default on acceptance or violate other cooperation obligations we are authorised, regardless of our duties in accordance with clauses 3.2 and 3.3, to withdraw from the contract at our discretion and to demand the damages accruing to us through the default or violation, including additional expenses.

4.2 In the case of default on acceptance, the risk of accidental loss or accidental deterioration of the delivered object shall devolve onto the purchaser as of the moment at which they defaulted on acceptance.

5. Prices and payments

5.1 Our prices are to be understood as being principally in net cash in Euros, ex works/warehouse Munich, plus dispatch and packaging costs, insofar as nothing else is agreed in writing. Regulatory charges, customs duties and taxes are to be paid separately in the respective amounts applicable at the time of invoicing.

5.2 In the case of a single order with a net value of less than €100.00 we are entitled to add an additional small-order surcharge of €30.00 to our prices.

5.3 Our prices are valid for six weeks from the day the contract is signed. The agreed prices only apply to the respective completed order.

5.4 Price changes are admissible if there are more than six weeks between the signing of the contract and the agreed delivery date. If, after that period and until the completion of the delivery, the wages, material costs or cost prices (listed prices) rise in line with real market conditions or the exchange rates change, we will be entitled to raise the price appropriately, according to the increase in costs.

5.5 The first three deliveries will only be made if paid for in cash on delivery. For further follow-up deliveries our invoices are to be paid in full in net cash within 30 days of the date on which the invoice or an equivalent statement of payment is issued.

5.6 Payment deadlines are recognised as having been complied with if we have the amount at our disposal within the deadline. Our representatives and/or commissaries must only be paid by way of discharge if they provide evidence of a written authorisation of collection.

5.7 Should the purchaser default on their payment obligation, either in whole or in part, they must from this point onwards – notwithstanding our other further rights - pay default interest in the amount of 5% per year above the base interest rate set by the European Central Bank, insofar as we do not provide evidence of greater damages.

5.8 For each written warning regarding an invoice which is made after entering into default, we are entitled to demand a fixed processing fee of €5.00.

5.9 Offsetting or retention on the part of the purchaser is precluded unless the offsetting or retention claim is undisputed or established to be legally binding. We are entitled to avert the exercise of the right of retention by providing security, even without a guarantee.

5.10 If the purchaser ceases payments, has excessive debts, is subject to an application to open insolvency proceedings, or comes into default on the redemption of due drafts or cheques, our total claims will be due immediately. The same applies in the case of any other substantial decline in the purchaser’s financial standing. In these cases we are entitled to demand sufficient security and to withdraw from the contract.

6. Retention of title

6.1 The goods remain our property until the fulfilment of all claims existing between ourselves and the purchaser (goods subject to retention of title), even if individual goods have already been paid for. A pledge or chattel mortgage of the goods subject to retention of title is not permissible.

6.2 In the case of the resale or passing on of goods subject to retention of title – as permitted within the framework of proper business operations – the purchaser procedes to us, at that point in time and up until repayment of all claims due to us, all future claims accruing to them from the resale or passing on of the goods to their customers as security, without particular explanations being necessary at a later date. This also extends to outstanding balances, which arise within the framework of the existing current account relationships or with the termination of those kinds of relationships between the purchaser and their customers. If the goods subject to retention of title are resold or passed on together with other objects without a unit price having been agreed for the goods subject to retention of title, the purchaser cedes to us, with priority over any other claims, that part of the total asking price or the total price obtained by the passing on of the goods that corresponds to the price of the goods subject to retention of title invoiced by us. The purchaser is authorised to collect the assigned claims arising from the resale or passing on until this authorisation is revoked; they are however not entitled to use them in any other way e.g. by assignment. The purchaser must make the customer aware of the assignment on our request, as well as issue us with the documents necessary for asserting rights against their customers e.g. invoices, and provide us with all the necessary information. The purchaser shall bear all the costs of the collection and of any possible interventions.

Should the purchaser receive an exchange on the basis of the authorisation granted to them to collect the assigned claim, the property listed in these papers is transferred to us with the recognised right of security. The handing over of the objects of exchange will be replaced by the agreement that the purchaser will take charge of them for us and then immediately deliver them to us with endorsement. If the equivalent value of the claim assigned to us in cheques is paid to the purchaser or to one of their financial institutions, they are obligated to disclose receipt immediately and to then make the payment. Ownership of the cheques is transferred to us, according to our recognised rights, as soon as the purchaser receives them. The handing over of the papers will be replaced by the agreement that the purchaser will take charge of them for us and then immediately deliver them to us with endorsement.

6.3 If the purchaser processes the goods subject to retention of title, transform them or amalgamate them with other objects, this processing, transformation or amalgamation takes place on our behalf. We will immediately become the owner of the objects produced by means of the processing, transformation or amalgamation. Should this not be possible on legal grounds, we and the purchaser agree that we will be the owner of the new objects at every step of the processing, transformation or amalgamation. The purchaser will keep the new objects safe for us with due professional care and diligence. The objects resulting from the processing, transformation or amalgamation count as goods subject to retention of title. In the case of processing, transformation or amalgamation with other objects not belonging to us, we are entitled to co-ownership of the new objects in the ratio of the value of the processed, transformed or amalgamated goods subject to retention of title to the value of the new goods. In the case of sale or rental of the new objects, the purchaser herewith cedes to us their claim deriving from the sale or rental to their customers with all subsidiary rights as security, without further explanations being required at a later date. However, the transfer only applies in the amount that corresponds to the value of the processed, transformed or amalgamated goods subject to retention of title invoiced by us. The share of the claim assigned to us takes priority over the other claim.

6.4 Should the goods subject to retention of title be amalgamated with properties or movables by the purchaser, the purchaser also cedes to us the claim which is otherwise due to them as
salary for the amalgamation with all subsidiary rights as security, without further particular explanations being required.

6.5 If the purchaser defaults on their payment obligation or on the redemption of due exchanges or cheques, either in whole or in part, or excessive debts or suspensions of payment arise, or an insolvency application is filed, we are authorised to immediately take back all goods still under retention of title. We can also make the further rights resulting from the retention of title immediately applicable. The same applies to any other substantial decline in the financial standing of the purchaser.
The purchaser shall grant us or one of our commissaries access to their entire business premises during business hours. Demand for issuance or appropriation does not constitute withdrawal from the contract. We are entitled to utilise the goods subject to retention of title with due professional care and diligence and to pursue our own satisfaction, taking into account the open claims associated with the proceeds.

6.6 Should the value of the security exceed by more than 20% in total our claims against the purchaser resulting from the current business relationship, we are obliged on the request of the purchaser to release the security due to them at their discretion.

7. Claims of the purchaser in relation to defects

7.1 Only our description of the product or that of the manufacturer counts as an agreement on the quality of the goods. Public statements, promotion or advertising on the part of the manufacturer do not constitute contractual information regarding the quality of the goods.

7.2 The purchaser is obligated to fulfil their duties of inspection and notification of defects, as owed in accordance with § 377 HGB – German Code of Commercial Law. Goods delivered by us count as having been approved in conformity with the contract if we do not receive a written notification from the purchaser within 14 days of receipt of the goods, or at the latest 18 days after their delivery ex works, in which is concretely disclosed what complaints are being raised. Quantity differences of less than 5% in mass-produced articles do not constitute entitlement to a claim of defect. Insofar as nothing else is agreed in writing, our deliveries will each be performed to the standard existing at the time the order is made.

7.3 The claims are restricted at our discretion to removal of the defect or delivery of a defect-free item (a supplementary performance). In the case of failure regarding the supplementary performance, the purchaser has the right to depreciate or to withdraw from the contract at their discretion.

7.4 Further claims of the purchaser, in particular those following from damages consequential to a defect, are in principle precluded. This does not apply in the case of malice, gross negligence or breach of fundamental contractual obligations by us, or in the case of injury of life, body or health. The right of the purchaser to withdraw from the contract remains unaffected.

7.5 Liability for defects which can be attributed to unsuitable or inappropriate use, defective assembly – in particular under non-observance of the installation instructions – or start-up by the purchaser or a third party, natural wear and tear, defective or negligent handling, unsuitable operating components or replacement materials, or chemical, electrochemical, electrical, electronic or weather influences is excluded, insofar as the fault cannot be attributed to us.

7.6 The warranty period for material defects ad defects of title is one year.

7.7 The purchaser will not receive guarantees in the legal sense from us. Manufacturers' warranties remain unaffected by this.

8. Liability

We will assume liability for claims for damages made by the purchaser as follows:

a) Liability for personal injury is determined according to legal provisions.
b) Liability for property damage is restricted to €250,000.00 per event and €500,000.00 in total.
c) Liability for financial losses including direct losses and loss of profit is excluded.

The limitations on liability under b) and the disclaimer of liability under c) do not apply insofar as mandatory liability applies for damages to privately used objects in accordance with the law concerning product liability, or in cases of malice, gross negligence or breach of fundamental contractual obligations, or the lack of guaranteed characteristics for damages that are typical and reasonably foreseeable for this type of contract.

9. Other issues, place of fulfilment, place of jurisdiction

9.1 Ancillary verbal agreements only count as part of the contract if they are confirmed by us in writing.

9.2 Should a clause of these contractual conditions be completely or partially void and/or ineffective, the remaining conditions will not be affected. Rather, an ineffective condition should be replaced by another which is as near as possible to the economic intention.

9.3 If the purchaser is a businessman, Munich is the exclusive place of jurisdiction. The same place of jurisdiction applies if at the time of instigation of a lawsuit the purchaser has no general place of jurisdiction in the Federal Republic of Germany. The purchaser is, however, entitled to call upon any responsible court which can be deemed legally responsible.

9.4 The laws of the Federal Republic of Germany apply. The Hague Convention of 1st July 1964, concerning uniform laws regulating international purchases, and the treaty of the United Nations of 11th April 1980, concerning contracts of international sale of movable objects, do not apply.

1. Allgemeines

1.1. Unsere Verkaufs- und Lieferbedingungen (nachfolgend Geschäftsbedingungen) gelten ausschließlich für alle unsere Geschäftsbeziehungen, die wir ab dem 01.01.2011 erstmalig, laufend und zukünftig mit Unternehmern im Sinne von § 14 BGB (nachfolgend Besteller) eingehen und zwar auch dann, wenn bei dem jeweiligen Abschluss nicht nochmals auf sie hingewiesen wird.
1.2. Von unseren Geschäftsbedingungen abweichende Bedingungen unseres Vertragspartners erkennen wird nicht an, es sei denn, wir haben ihrer Geltung ausdrücklich schriftlich zugestimmt.

2. Angebote, Bestellungen, Vertragsabschluss

2.1. Unsere Angebote sind grundsätzlich unverbindlich und freibleibend, es sei denn, sie sind ausdrücklich als verbindliche Angebote gekennzeichnet. Die Zusendung unserer Preisliste(n) ist nicht als Angebot anzusehen. Die in unserer Werbung und/oder in unseren Prospekten und sonstigen Verkaufsunterlagen enthaltenen technischen Daten, Verwendungszweckangaben und Produktabbildungen beinhalten kein Angebot auf Abschluss eines Garantievertrages im Sinne von § 443 BGB.
2.2. Die Bestellung einer Ware und/oder Leistung beinhaltet das verbindliche Angebot des Bestellers, die Ware/Leistung erwerben zu wollen. Wir sind berechtigt, das in der Bestellung liegende Vertragsangebot innerhalb von zwei Wochen nach Bestelleingang anzunehmen. Die Angebotsannahme kann von uns schriftlich oder durch Auslieferung/Ausführung der bestellten Ware/Leistung an den Besteller erfolgen. Wir behalten uns vor, Bestellungen nicht anzunehmen, auch ohne schriftliche Äußerung oder nähere Begründung. Unser Schweigen nach Ablauf der Annahmefrist gilt im Zweifel als Ablehnung.
2.3. Erfolgt die Bestellung auf elektronischem Wege, werden wir den Zugang der Bestellung umgehend bestätigen. Die Zugangsbestätigung stellt noch keine verbindliche Annahme der Bestellung dar, jedoch kann die Zugangsbestätigung unsererseits mit der Annahmeerklärung verbunden werden.
2.4. Im Falle von mündlich vereinbarten Verträgen wird der Leistungsumfang unserer Lieferungen durch unsere schriftliche Vertragsbestätigung festgelegt.

3. Lieferung

3.1. Teillieferungen oder Teilleistungen sind zulässig und verpflichten unseren Vertragspartner zur Zahlung der anteiligen Vergütung, es sei denn, dass die Teillieferung oder -leistung für ihn unzumutbar wäre.
3.2. Bei Lieferaufträgen auf Abruf gilt die gesamte Bestellmenge einen Kalendermonat nach Ablauf der für den Abruf vereinbarten Frist oder mangels einer vereinbarten Frist drei Kalendermonate nach Vertragsschluss als vom Besteller abgerufen.
3.3. Ist der Besteller zur Einteilung von Abrufkontingenten berechtigt und nimmt er die Einteilung nicht innerhalb von einem Kalendermonat nach Ablauf der jeweils vereinbarten Abruffrist oder mangels einer solchen Frist einen Monat nach Aufforderung durch uns nicht vor, dürfen wir die bestellte Gesamtmenge nach unserer Wahl einteilen, liefern und berechnen.
3.4. Unsere Lieferungen erfolgen „ab Werk München“ (EXW), sofern nicht ausdrücklich etwas anderes vereinbart ist. Die Verkäufer- und Käuferpflichten der Art und Weise der Lieferung bestimmen sich im Falle einer Lieferung „ab Werk“ nach den International Commercial Terms (INCOTERMS® 2010) in ihrer derzeitigen Fassung.
3.5. Die von uns angegebenen Liefer- und Leistungsfristen sind unverbindlich und freibleibend; sie können sich durch Verzögerung bei der Zulieferung, Produktion oder Störungen im Betriebsablauf verändern. Bei nachträglichen Vertragsänderungen oder -ergänzungen beginnen die Lieferfristen und -termine, auch wenn sie von uns zuvor bereits bestätigt worden waren, neu zu laufen bzw. verschieben sich entsprechend, soweit im jeweiligen Einzelfall mit dem Besteller keine hiervon abweichende Vereinbarung getroffen worden ist.
3.6. Geraten wir aus Gründen, die wir zu vertreten haben, in Lieferverzug, so ist unsere Haftung auf den vorhersehbaren, unmittelbaren Durchschnittsschaden begrenzt.

4. Annahmeverzug

4.1. Kommt der Besteller in Annahmeverzug oder verletzt er sonstige Mitwirkungspflichten, so sind wir unbeschadet unserer Rechte nach Ziffer 3.2 und 3.3. berechtigt, nach unserer Wahl vom Vertrag zurückzutreten und den uns dadurch entstehenden Schaden, einschließlich der Mehraufwendungen, zu verlangen.
4.2. Im Falle des Annahmeverzugs geht auch die Gefahr des zufälligen Untergangs oder einer zufälligen Verschlechterung der gelieferten Sache in dem Zeitpunkt auf den Besteller über, in dem dieser in Annahmeverzug gerät.

5. Preise und Zahlungen

5.1. Unsere Preise verstehen sich grundsätzlich in EURO netto Kasse, ab Werk/Lager München, zzgl. Versand- und Verpackungskosten, sofern nichts anderes schriftlich vereinbart ist. Gesetzliche Abgaben, Zölle und Steuern sind in der jeweils bei Rechnungsstellung geltenden Höhe gesondert zu entrichten.
5.2 Im Falle einer Einzelbestellung im Netto-Warenwert von weniger als € 100,00 sind wir berechtigt, zusätzlich zu unseren Preisen einen Mindermengenzuschlag von € 30,00 zu berechnen.
5.3. Unsere Preise gelten vom Tage des Vertragsabschlusses an für sechs Wochen. Die vereinbarten Preise gelten nur für den jeweils geschlossenen Auftrag.
5.4. Preisänderungen sind zulässig, wenn zwischen Vertragsabschluß und vereinbartem Liefertermin mehr als sechs Wochen liegen. Erhöhen sich danach bis zur Fertigstellung der Lieferung die Löhne, Materialkosten oder die marktmäßigen Einstandspreise (Listenpreise) oder verändern sich die Wechselkurse, so sind wir berechtigt, den Preis angemessen entsprechend den Kostensteigerungen zu erhöhen.
5.5. Die ersten drei Lieferungen erfolgen nur gegen Nachnahme. Darüber hinausgehende Folgelieferungen betreffend sind unsere Rechnungen binnen 30 Tagen netto Kasse nach Rechnungsstellung oder einer gleichwertigen Zahlungsaufstellung zur Zahlung ohne jeden Abzug fällig.
5.6. Zahlungsfristen gelten als eingehalten, wenn wir innerhalb der Frist über den Betrag verfügen können. An unsere Vertreter und/oder Beauftragte kann mit befreiender Wirkung nur bezahlt werden, wenn diese eine schriftliche Inkassovollmacht nachweisen.
5.7. Kommt der Besteller mit seiner Zahlungspflicht ganz oder teilweise in Verzug, so hat er – unbeschadet unserer sonstigen weiteren Rechte – ab diesem Zeitpunkt Verzugszinsen in Höhe von jährlich 5 Prozentpunkten über dem Basiszinssatz der Europäischen Zentralbank zu zahlen, soweit wir nicht einen höheren Schaden nachweisen.
5.8. Für jede schriftliche Mahnung einer Rechnung, die nach Verzugseintritt erfolgt, sind wir berechtigt eine Bearbeitungspauschale von € 5,00 zu verlangen.
5.9. Eine Aufrechnung oder Zurückbehaltung des Bestellers ist ausgeschlossen, es sei denn die Aufrechnung- oder Zurückbehaltungsforderung ist unbestritten oder rechtskräftig festgestellt. Wir sind berechtigt, die Ausübung des Zurückbehaltungsrechts durch Sicherheitsleistung – auch ohne Bürgschaft – abzuwenden.
5.10. Stellt der Besteller seine Zahlungen ein, liegt eine Überschuldung vor oder wird die Eröffnung eines Insolvenzverfahrens beantragt oder kommt der Besteller mit der Einlösung fälliger Wechsel oder Schecks in Verzug, so wird unsere Gesamtforderung sofort fällig. Dasselbe gilt bei einer sonstigen wesentlichen Verschlechterung der wirtschaftlichen Verhältnisse des Bestellers. Wir sind in diesen Fällen berechtigt, ausreichende Sicherheitsleistung zu verlangen und vom Vertrag zurückzutreten.

6. Eigentumsvorbehalt

6.1. Die Waren bleiben unser Eigentum bis zur Erfüllung sämtlicher uns gegen den Besteller zustehenden Ansprüche (Vorbehaltsware), auch wenn einzelne Ware bezahlt worden ist. Eine Verpfändung oder Sicherungsübereignung der Vorbehaltsware ist nicht zulässig.
6.2. Der Besteller tritt für den Fall der – im Rahmen des ordnungsgemäßen Geschäftsbetriebes zulässigen – Weiterveräußerung oder Weitergabe der Vorbehaltsware an uns schon jetzt bis zur Tilgung sämtlicher unserer Forderungen die ihm aus der Weiterveräußerung oder Weitergabe entstehenden künftigen Forderungen gegen seine Kunden sicherheitshalber ab, ohne dass es noch späterer besonderer Erklärungen bedarf; die Abtretung erstreckt sich auch auf Saldoforderungen, die sich im Rahmen bestehender Kontokorrentverhältnisse oder bei Beendigung derartiger Verhältnisse des Bestellers mit seinen Kunden ergeben. Wird die Vorbehaltsware zusammen mit anderen Gegenständen weiterveräußert oder weitergegeben, ohne dass für die Vorbehaltsware ein Einzelpreis vereinbart wurde, so tritt der Besteller an uns mit Vorrang vor den übrigen Forderungen denjenigen Teil der Gesamtpreisforderung bzw. der für die Weitergabe erzielten Gesamtforderung ab, der dem von uns in Rechnung gestellten Wert der Vorbehaltsware entspricht. Bis auf Widerruf ist der Besteller zur Einziehung der abgetretenen Forderungen aus der Weiterveräußerung oder Weitergabe befugt; er ist jedoch nicht berechtigt, über sie in anderer Weise, z.B. durch Abtretung, zu verfügen.

Auf unser Verlangen hat der Besteller die Abtretung dem Kunden bekannt zu geben und uns die zur Geltendmachung der Rechte gegen den Kunden erforderlichen Unterlagen, z.B. Rechnungen, auszuhändigen und die erforderlichen Auskünfte zu erteilen. Alle Kosten der Einziehung und etwaiger Interventionen trägt der Besteller. Erhält der Besteller aufgrund der ihm erteilten Ermächtigung zur Einziehung der abgetretenen Forderung Wechsel, so geht das Eigentum an diesen Papieren mit dem verbrieften Recht sicherungshalber auf uns über. Die Übergabe des Wechsels wird durch die Vereinbarung ersetzt, dass der Besteller sie für uns in Verwahrung nimmt und sie dann unverzüglich indossiert an uns abliefert. Für den Fall, dass der Gegenwert der an uns abgetretenen Forderung in Schecks bei dem Besteller oder bei einem Geldinstitut des Bestellers eingehen sollte, ist dieser zur unverzüglichen Meldung der Eingänge und zur Abführung verpflichtet. Das Eigentum an den Schecks geht mit dem verbrieften Recht auf uns über, sobald sie der Besteller erhält. Die Übergabe der Papiere wird durch die Vereinbarung ersetzt, dass der Besteller sie für uns in Verwahrung nimmt und sie dann unverzüglich indossiert an uns abliefert.

6.3. Verarbeitet der Besteller die Vorbehaltsware, bildet er sie um oder verbindet er sie mit anderen Gegenständen, so erfolgt die Verarbeitung, Umbildung oder Verbindung für uns. Wir werden unmittelbar Eigentümer der durch die Verarbeitung, Umbildung oder Verbindung hergestellten Sache. Sollte dies aus rechtlichen Gründen nicht möglich sein, so sind der Besteller und wir uns darüber einig, das wir in jedem Zeitpunkt der Verarbeitung, Umbildung oder Verbindung Eigentümer der neuen Sache werden. Der Besteller verwahrt für uns die neue Sache mit der Sorgfalt eines ordentlichen Kaufmanns. Die durch Verarbeitung, Umbildung oder Verbindung entstandene Sache gilt als Vorbehaltsware. Bei Verarbeitung, Umbildung oder Verbindung mit anderen, nicht uns gehörenden Gegenständen, steht uns Miteigentum an der neuen Sache in Höhe des Anteils zu, der sich aus dem Verhältnis des Wertes der verarbeiteten, umgebildeten oder verbundenen Vorbehaltsware zum Wert der neuen Sache ergibt. Für den Fall der Veräußerung oder Vermietung der neuen Sache tritt der Besteller an uns hiermit seinen Anspruch aus der Veräußerung oder Vermietung gegen seinen Kunden mit allen Nebenrechten sicherungshalber ab, ohne dass es noch späterer weiterer Erklärungen bedarf. Die Abtretung gilt jedoch nur in Höhe des Betrages, der dem von uns in Rechnung gestellten Wert der verarbeiteten, umgebildeten oder verbundenen Vorbehaltsware entspricht. Der an uns abgetretene Forderungsanteil hat den Vorrang vor der übrigen Forderung.

6.4. Wird die Vorbehaltsware vom Besteller mit Grundstücken oder beweglichen Sachen verbunden, so tritt der Besteller auch seine Forderung, die ihm als Vergütung für die Verbindung zusteht, mit allen Nebenrechten sicherungshalber an uns ab, ohne dass es weiterer besonderer Erklärungen bedarf.

6.5. Kommt der Besteller mit seiner Zahlungspflicht oder der Einlösung fälliger Wechsel oder Schecks ganz oder teilweise in Verzug, liegt eine Überschuldung oder Zahlungseinstellung vor oder ist ein Insolvenzantrag gestellt, so sind wir berechtigt, sämtliche noch unter Eigentumsvorbehalt stehenden Waren sofort an uns zu nehmen; ebenso können wir die weiteren Rechte aus dem Eigentumsvorbehalt sofort geltend machen. Dasselbe gilt bei einer sonstigen wesentlichen Verschlechterung der wirtschaftlichen Verhältnisse des Bestellers. Der Besteller gewährt uns bzw. einem von uns Beauftragten während der Geschäftsstunden Zutritt zu seinen sämtlichen Geschäftsräumen. Das Verlangen der Herausgabe oder die Inbesitznahme stellt keinen Rücktritt vom Vertrag dar. Wir sind berechtigt, die Vorbehaltsware mit der Sorgfalt eines ordentlichen Kaufmanns zu verwerten und uns unter Anrechnung auf die offenen Ansprüche aus deren Erlös zu befriedigen.

6.6. Übersteigt der Wert der Sicherung unsere Ansprüche gegen den Besteller aus der laufenden Geschäftsbeziehung insgesamt um mehr als 20 %, so sind wir auf Verlangen des Bestellers verpflichtet, ihm zustehende Sicherungen nach seiner Wahl freizugeben.

7. Ansprüche des Bestellers bei Mängeln

7.1. Als Beschaffenheit der Ware gilt grundsätzlich nur unsere oder die Produktbeschreibung des Herstellers vereinbart. Öffentliche Äußerungen, Anpreisungen oder Werbung des Herstellers stellen daneben keine vertragsgemäße Beschaffenheitsangabe der Ware dar.

7.2. Der Besteller ist verpflichtet, seinen nach § 377 HGB geschuldeten Untersuchungs- und Rügepflichten nachzukommen. Von uns gelieferte Ware gilt als vertragsgerecht genehmigt, wenn wir nicht binnen 14 Tagen nach Erhalt der Ware, spätestens jedoch 18 Tagen nach deren Auslieferung ab Werk, eine schriftliche Anzeige des Bestellers erhalten, in der konkret mitgeteilt wird, welche Rügen erhoben werden. Mengendifferenzen bei Massenartikeln von weniger als 5% berechtigen nicht zur Mängelrüge. Sofern nichts anderes schriftlich vereinbart ist, werden unsere Lieferungen jeweils in dem bei Bestellung bestehenden Standard vorgenommen.

7.3. Die Ansprüche sind nach unserer Wahl auf Beseitigung des Mangels oder Lieferung einer mangelfreien Sache (Nacherfüllung) beschränkt. Bei Fehlschlagen der Nacherfüllung hat der Besteller das Recht, nach seiner Wahl zu mindern oder vom Vertrag zurückzutreten.

7.4. Weitergehende Ansprüche des Bestellers, insbesondere wegen Mangelfolgeschäden sind grundsätzlich ausgeschlossen. Dies gilt nicht bei Vorsatz, grober Fahrlässigkeit oder Verletzung wesentlicher Vertragspflichten durch uns sowie im Fall der Verletzung des Lebens, des Körpers oder der Gesundheit. Das Recht des Bestellers zum Rücktritt vom Vertrag bleibt unberührt.

7.5. Eine Haftung für Mängel, die durch ungeeignete oder unsachgemäße Verwendung, fehlerhafte Montage – insbesondere unter Nichtbeachtung der Installationsanweisung - bzw. Inbetriebsetzung durch den Besteller oder Dritte, natürliche Abnutzung, fehlerhafte oder nachlässige Behandlung, ungeeignete Betriebsmittel, Austauschwerkstoffe, chemische, elektrochemische, elektrische, elektronische oder Witterungseinflüsse zurückgehen, ist ausgeschlossen, sofern sie nicht auf unser Verschulden zurückzuführen sind.

7.6. Die Gewährleistungsfrist für Sach- und Rechtsmängel beträgt 1 Jahr.

7.7. Garantien im Rechtssinne erhält der Besteller von uns nicht. Herstellergarantien bleiben hiervon unberührt.

8. Haftung

Wir haften für Schadenersatzansprüche des Bestellers wie folgt:

a) Die Haftung für Personenschäden richtet sich nach den gesetzlichen Bestimmungen.

b) Die Haftung für Sachschäden ist auf € 250.000,00 je Schadenereignis und € 500.000,00 insgesamt beschränkt.

c) Die Haftung für Vermögensschäden einschließlich mittelbarer Schäden und entgangenen Gewinn ist ausgeschlossen.

Die Haftungsbeschränkungen unter b) und der Haftungsausschluss unter c) gelten nicht, soweit bei Schäden an privat genutzten Sachen nach dem Produkthaftungsgesetz oder in Fällen des Vorsatzes oder der groben Fahrlässigkeit oder der Verletzung wesentlicher Vertragspflichten oder des Fehlens zugesicherter Eigenschaften für vertragstypisch vorhersehbare Schäden zwingend gehaftet wird.

9. Sonstiges, Erfüllungsort, Gerichtsstand

9.1. Mündliche Nebenabreden gelten nur dann als Vertragsbestandteil, wenn sie durch uns schriftlich bestätigt werden.

9.2. Sollte eine Klausel dieser Vertragsbedingungen ganz oder teilweise nichtig und/oder unwirksam sein, so werden die übrigen Bestimmungen hiervon nicht berührt. Eine unwirksame Bestimmung soll vielmehr durch eine ersetzt werden, die dem wirtschaftlich Gewollten am nächsten kommt.

9.3. Ist der Besteller Kaufmann, so ist München ausschließlicher Gerichtsstand. Der gleiche Gerichtsstand gilt, wenn der Besteller im Zeitpunkt der Einleitung eines gerichtlichen Verfahrens keinen allgemeinen Gerichtsstand in der Bundesrepublik Deutschland hat. Der Besteller ist jedoch berechtigt, jedes gesetzlich zuständige Gericht anzurufen.

9.4. Es gilt das Recht der Bundesrepublik Deutschland. Die Haager Konventionen vom 01.07.1964 betreffend einheitlicher Gesetze über den internationalen Kauf und das Übereinkommen der Vereinten Nationen vom 11.04.1980 über Verträge über den internationalen Kauf beweglicher Sachen finden keine Anwendung.

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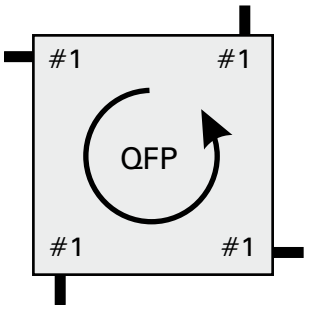
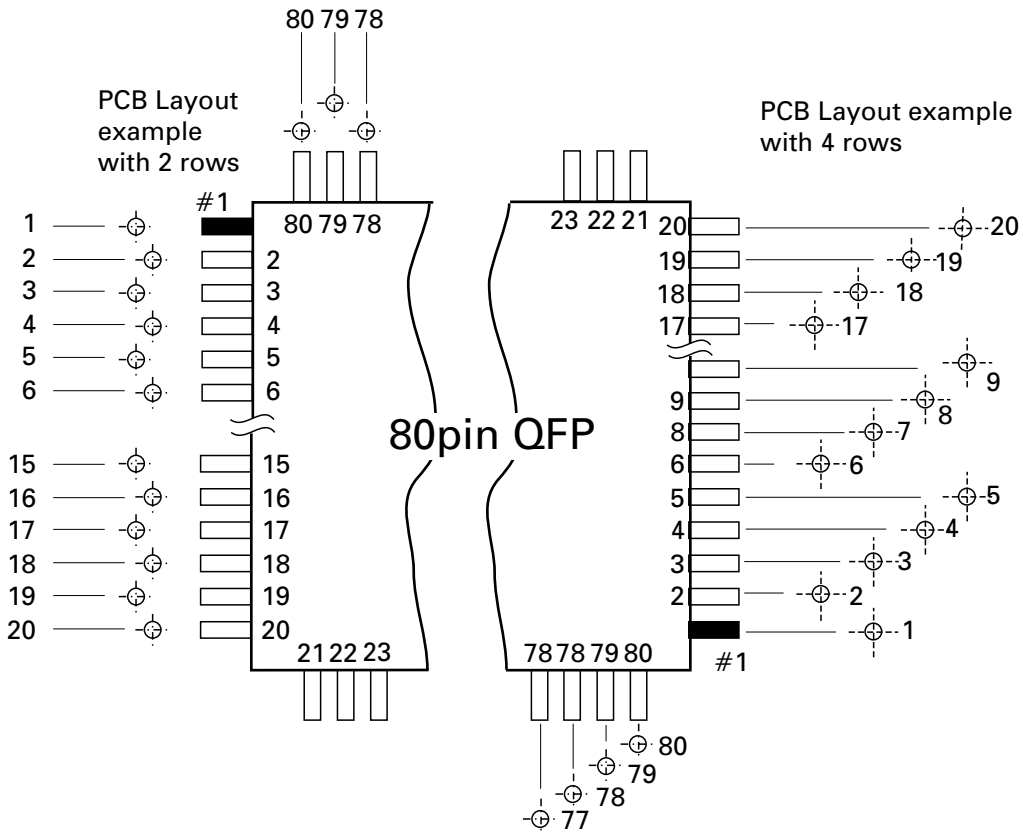
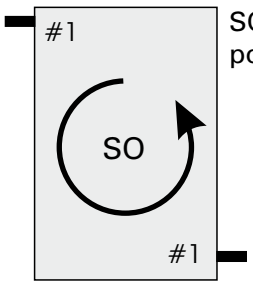
EXAMPLES OF PIN POSITIONS FOR QFP AND SO PACKAGES



QFP package possible positons for Pin #1.

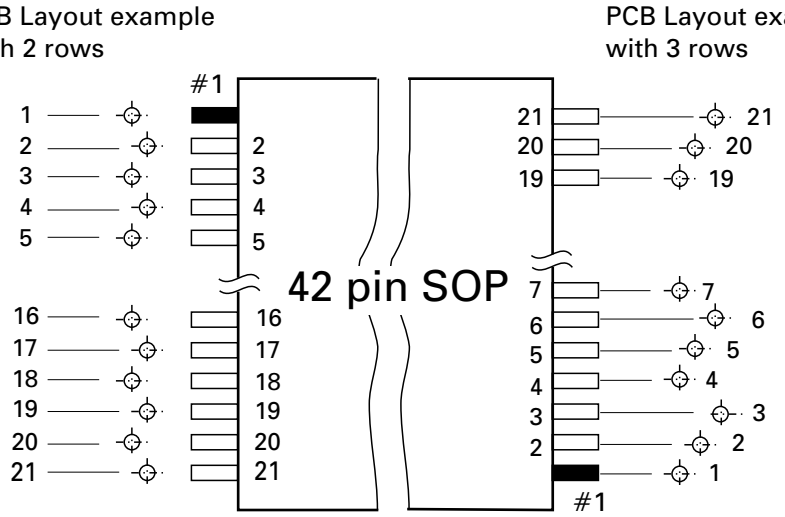
Note that the pin numbers are always counted in an anti-clockwise direction from the Number 1 pin (see detail below)





SO package possible positons for Pin #1.

Note that the pin numbers are always counted in an anti-clockwise direction from the Number 1 pin (see detail below)



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