



Powering the  
SiC evolution™

QSiC™ MOSFETs

QSiC™ DIODES

QSiC™ MODULES

KNOWN GOOD DIE



SemiQ QSiC™ Catalog



## Harnessing the Power of Silicon Carbide to Shape a Sustainable and Efficient Future



### We design and manufacture Silicon Carbide Power Semiconductors including:

- SiC Power MOSFETs
- Known Good Die
- SiC Diode Modules
- SiC Power Schottky Diodes (650V, 1200V, 1700V)
- SiC MOSFET Modules
- SiC Custom Modules

SemiQ specializes in providing high-quality, efficient standard, and custom Silicon Carbide (SiC) Power Semiconductors for high-voltage applications. Our product portfolio includes MOSFETs and diodes, available in discrete, module and bare die that combine high-performance with industry-leading reliability.

For over a decade, SemiQ's experienced team has been working with customers from various application areas, including solar energy, EV charging, automotive, medical, and energy storage. From the initial concept stage through prototyping and production, we help design, test, and deploy high-density and optimized solutions, providing exceptional service and engineering support to all our partners within the shortest possible timeframe.

### Applications

SemiQ products are deployed in EV charging systems, induction heating, power supplies, fuel cell power generation, and solar inverters around the world.

Additionally, SemiQ offers power conversion application expertise and has extensive experience designing inverters of 6.6kW, 10kW and above.

### Redundant SiC Supply Chain

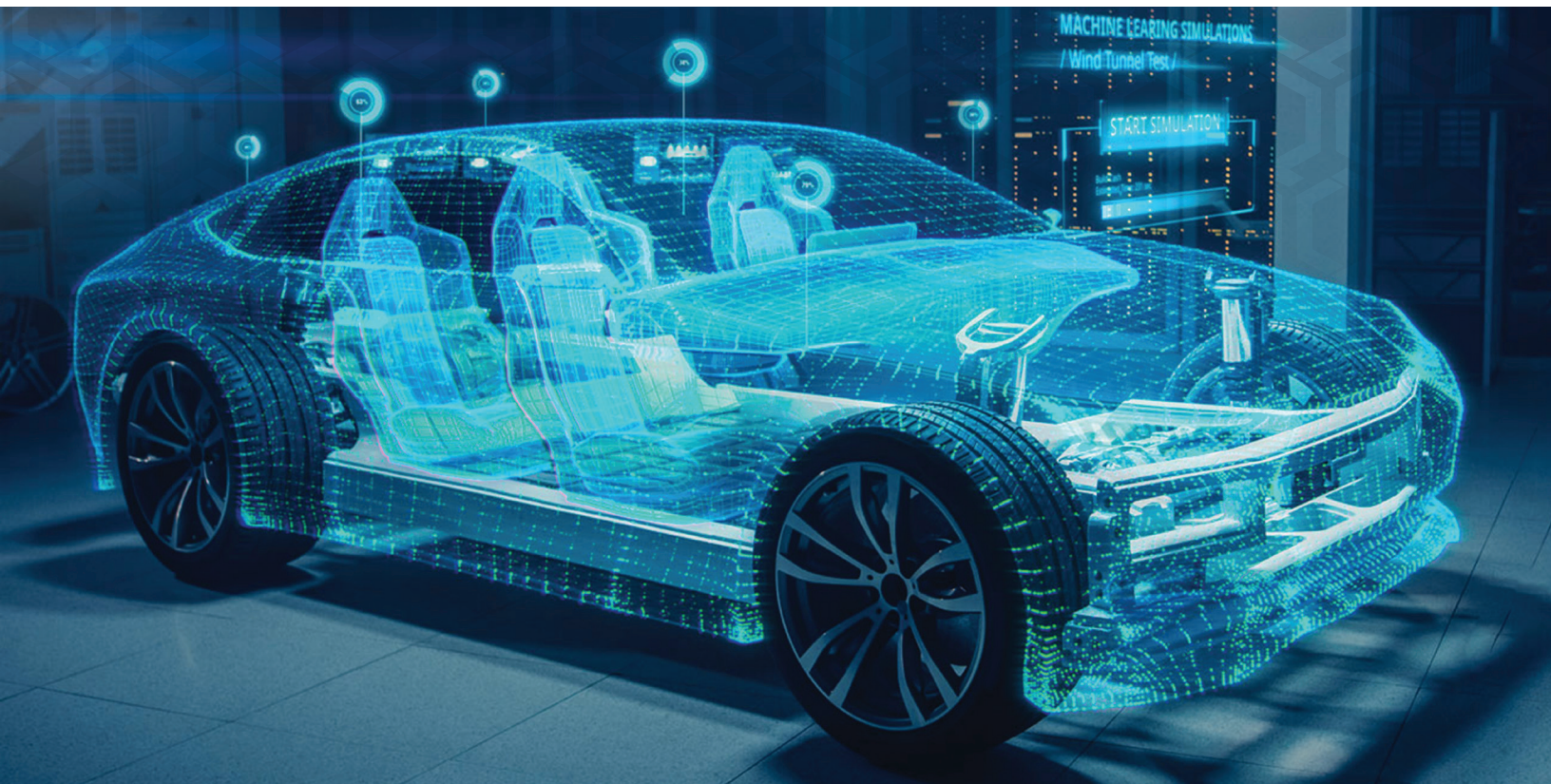
In order to mitigate risk to customers, SemiQ is building a fully redundant supply chain with multiple sources for:

- SiC Substrates
- SiC Epi Wafers
- Warehouses
- SiC Wafer Fabrication
- Assembly and Test Factories

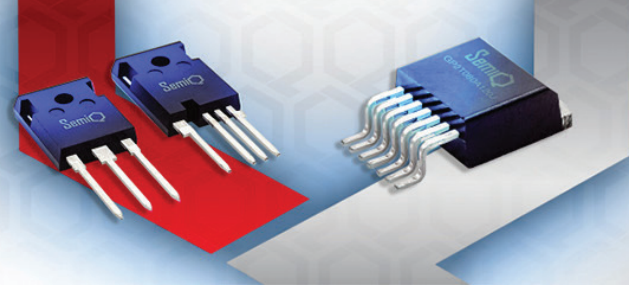


## Silicon Carbide Diodes and MOSFETs

- ✔ SemiQ QSiC™ Diodes and MOSFETs represent a huge improvement in reliability, device ruggedness, surge current capability and moisture resistance.
- ✔ These devices feature two layers of passivation on each chip. Extensive reliability testing includes over 37 million hours of HTRB and H3TRB.
- ✔ QSiC™ Diodes and QSiC™ MOSFETs are available in standardized packages including TO-220, TO-247, TO-263, SOT-227, half-bridge and full-bridge modules, as well as bare die wafers.
- ✔ To improve ruggedness even further, packaged devices are 100% tested for unclamped inductive load. MOSFETs are 100% gate burn-in tested at high voltage and high temperature at wafer level. To protect customers from risk, SemiQ has established a fully redundant supply chain, including multiple sources for: SiC substrates, SiC epi, SiC wafer fab, assembly and testing.



Contact SemiQ today to benefit from our extensive Silicon Carbide experience, expertise and robust supply chain.



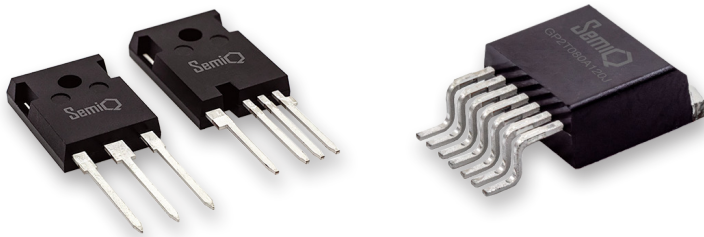
## QSiC™ MOSFETs

SemiQ QSiC™ MOSFETs operate with near zero switching loss, greatly increasing efficiency while reducing heat dissipation and the need for large heatsinks. These benefits make the products ideal for use in solar inverters, power supplies, motor drives, and charging stations.

### 1200V QSiC™ MOSFETs

#### Discrete Packages

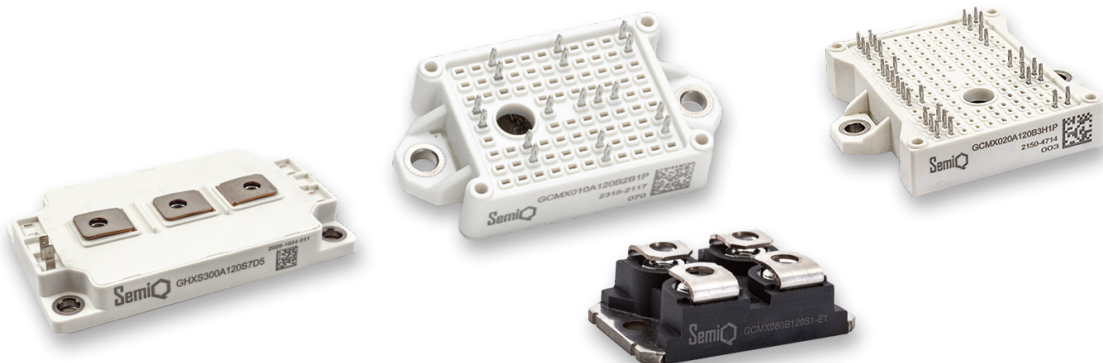
Part Number	V <sub>DC</sub>	I <sub>D</sub>	R <sub>DS(ON)</sub>	Package
GP2T020A120H	1200V	119A	18mΩ	TO-247-4L
GP2T040A120H	1200V	63A	37mΩ	TO-247-4L
GP2T040A120J	1200V	63A	37mΩ	TO-263-7L
GP2T040A120U	1200V	63A	37mΩ	TO-247-3L
GP2T080A120H	1200V	35A	77mΩ	TO-247-4L
GP2T080A120J	1200V	35A	77mΩ	TO-263-7L
GP2T080A120U	1200V	35A	77mΩ	TO-247-3L



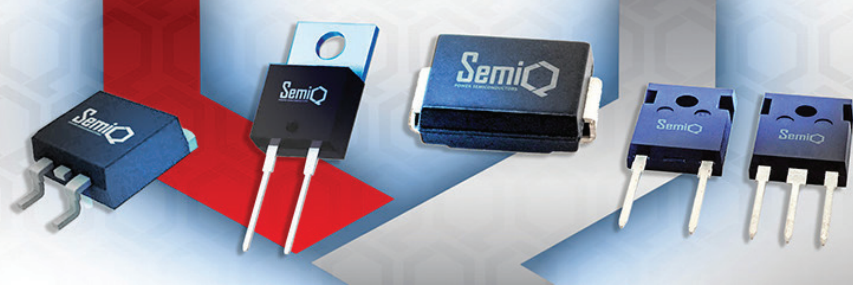
### 1200V QSiC™ MOSFETs

#### Module Packages

Part Number	V <sub>DC</sub>	I <sub>D</sub>	R <sub>DS(ON)</sub>	Package
GCMX003A120S7B1	1200V	528A	03mΩ	S7 Half Bridge
GCMX003A120S3B1-N	1200V	610A	03mΩ	S3 Half Bridge
GCMX005A120S3B1-N	1200V	422A	04.5mΩ	S3 Half Bridge
GCMX005A120S7B1	1200V	348A	05mΩ	S7 Half Bridge
GCMX005A120B3B1P	1200V	383A	05mΩ	Half Bridge
GCMX010A120B2B1P	1200V	214A	09mΩ	Half Bridge
GCMX010A120B3B1P	1200V	173A	10mΩ	Half Bridge
GCMS020B120S1-E1	1200V	113A	18mΩ	SOT-227
GCMX020B120S1-E1	1200V	113A	18mΩ	SOT-227
GCMX020A120B2B1P	1200V	102A	19mΩ	Half Bridge
GCMX020A120B3H1P	1200V	93A	20mΩ	Full Bridge
GCMX020A120B2H1P	1200V	102A	20mΩ	Full Bridge
GCMS040B120S1-E1	1200V	57A	37mΩ	SOT-227
GCMX040B120S1-E1	1200V	57A	37mΩ	SOT-227
GCMX040A120B2H1P	1200V	53A	40mΩ	Full Bridge
GCMX040A120B3H1P	1200V	56A	40mΩ	Full Bridge
GCMX080A120B2H1P	1200V	27A	77mΩ	Full Bridge
GCMS080B120S1-E1	1200V	30A	77mΩ	SOT-227
GCMX080B120S1-E1	1200V	30A	77mΩ	SOT-227







## QSiC™ Schottky Diodes

Explore SemiQ QSiC™ Schottky Diodes range and revolutionize your power applications with near zero switching loss, heightened efficiency, and reduced heat dissipation. SemiQ QSiC™ Schottky Diodes are perfect for power supplies, induction heating, welding, and high-temperature settings. Elevate your power management solutions today.

### QSiC™ Diodes – Discrete Packages

#### 650V SiC Schottky Diodes

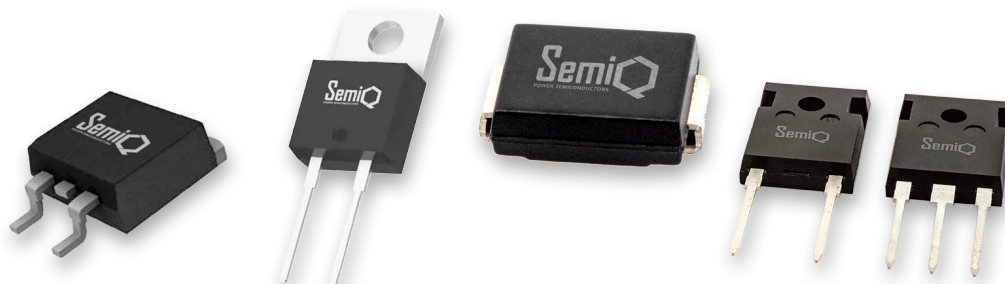
Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GP3D006A065A	650V	6A	TO-220-2L
GP3D006A065F	650V	6A	TO-220-2L-FP
GP3D008A065A	650V	8A	TO-220-2L
GP3D008A065D	650V	8A	TO-263-2L (D2PAK)
GP3D008A065F	650V	8A	TO-220-2L-FP
GP3D010A065A	650V	10A	TO-220-2L
GP3D010A065B	650V	10A	TO-247-2L
GP3D010A065D	650V	10A	TO-263-2L (D2PAK)
GP3D012A065A	650V	12A	TO-220-2L
GP3D012A065B	650V	12A	TO-247-2L
GP3D016A065U	650V	16 (2 x 8)A	TO-247-3L
GP3D020A065A	650V	20A	TO-220-2L
GP3D020A065B	650V	20A	TO-247-2L
GP3D020A065U	650V	20 (2 x 10)A	TO-247-3L
GP3D024A065U	650V	24 (2 x 12)A	TO-247-3L
GP3D030A065B	650V	30A	TO-247-2L
GP3D040A065U	650V	40 (2 x 20)A	TO-247-3L
GP3D050A065B	650V	50A	TO-247-2L

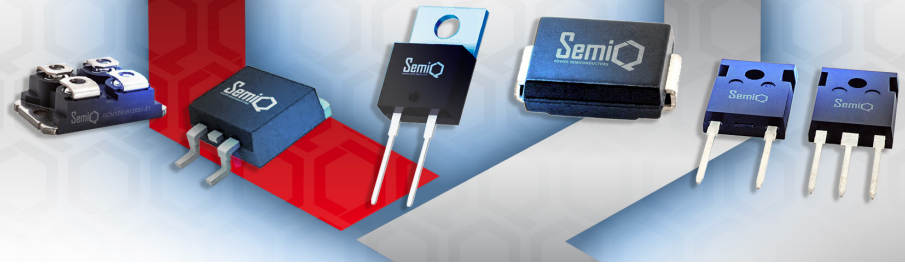
#### 1200V SiC Schottky Diodes

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GP3D010A120A	1200V	10A	TO-220-2L
GP3D010A120B	1200V	10A	TO-247-2L
GP3D010A120S	1200V	10A	DO-214AB
GP3D015A120A	1200V	15A	TO-220-2L
GP3D015A120B	1200V	15A	TO-247-2L
GP3D020A120A	1200V	20A	TO-220-2L
GP3D020A120B	1200V	20A	TO-247-2L
GP3D020A120U	1200V	20 (2 x 10)A	TO-247-3L
GP3D030A120B	1200V	30A	TO-247-2L
GP3D030A120U	1200V	30 (2 x 15)A	TO-247-3L
GP3D040A120U	1200V	40 (2 x 20)A	TO-247-3L
GP3D050A120B	1200V	50A	TO-247-2L
GP3D060A120U	1200V	60 (2 x 30)A	TO-247-3L

#### 1700V SiC Schottky Diodes

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GP3D005A170B	1700V	5A	TO-247-2L
GP3D010A170B	1700V	10A	TO-247-2L
GP3D020A170B	1700V	20A	TO-247-2L
GP3D050A170B	1700V	50A	TO-247-2L





## QSiC™ Schottky Diodes

### QSiC™ Diodes – Module Packages

#### 600V SiC Schottky Diode Modules

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GHXS010A060S-D3	600V	10A	SOT-227
GHXS020A060S-D3	600V	20A	SOT-227
GHXS030A060S-D3	600V	30A	SOT-227
GHXS030A060S-D1E	600V	30A	SOT-227
GHXS050A060S-D3	600V	50A	SOT-227

#### 650V SiC Schottky Diode Modules

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GHXS050B065S-D3	650V	50A	SOT-227
GHXS100B065S-D3	650V	100A	SOT-227

#### 1200V SiC Schottky Diode Modules

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GHXS015A120S-D1	1200V	15A	SOT-227
GHXS015A120S-D3	1200V	15A	SOT-227
GHXS030A120S-D3	1200V	30A	SOT-227
GHXS030A120S-D1E	1200V	30A	SOT-227
GHXS045A120S-D3	1200V	45A	SOT-227
GHXS050B120S-D3	1200V	50A	SOT-227
GHXS060A120S-D3	1200V	60A	SOT-227
GHXS100B120S-D3	1200V	100A	SOT-227
GHXS300A120S7D5	1200V	300A	S7 Half Bridge
GHXS400A120S7D5	1200V	400A	S7 Half Bridge

#### 1700V SiC Schottky Diode Modules

Part Number	V <sub>DC</sub>	I <sub>F</sub>	Package
GHXS050B170S-D3	1700V	50A	SOT-227
GHXS100B170S-D3	1700V	100A	SOT-227







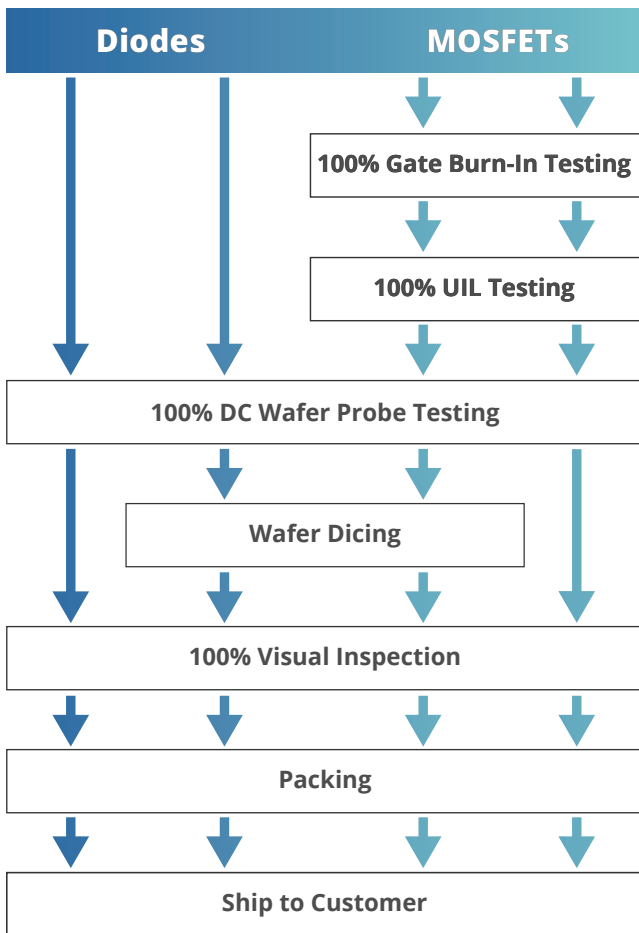
## QSiC™ Diodes and MOSFETs: Known Good Die

Known Good Die QSiC™ Diodes and MOSFETs from SemiQ provide important performance advantages, such as near-constant junction capacitance, low insertion loss, and high isolation needed for high-frequency applications. Experience the potential of cutting-edge semiconductor designs with Known Good Die QSiC™ Diodes and MOSFETs from SemiQ.

### Known Good Die – QSiC™ MOSFETs

Part Number	V <sub>DC</sub>	R <sub>DS(ON)</sub>
GP2T020A120X	1200V	20mΩ
GP2T040A120X	1200V	40mΩ
GP2T080A120X	1200V	80mΩ

### Typical Process Flow



### Known Good Die – QSiC™ Diodes

#### 650V SiC Schottky Diodes

Part Number	V <sub>DC</sub>	I <sub>F</sub>
GP3D006A065X	650V	6A
GP3D008A065X	650V	8A
GP3D010A065X	650V	10A
GP3D012A065X	650V	12A
GP3D020A065X	650V	20A
GP3D030A065X	650V	30A
GP3D050A065X	650V	50A

#### 1200V SiC Schottky Diodes

Part Number	V <sub>DC</sub>	I <sub>F</sub>
GP3D010A120X	1200V	10A
GP3D015A120X	1200V	15A
GP3D020A120X	1200V	20A
GP3D030A120X	1200V	30A
GP3D050A120X	1200V	50A

#### 1700V SiC Schottky Diodes

Part Number	V <sub>DC</sub>	I <sub>F</sub>
GP3D005A170X	1700V	5A
GP3D010A170X	1700V	10A
GP3D020A170X	1700V	20A
GP3D050A170X	1700V	50A



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