



## Silicon Carbide Schottky Diode

### Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI

### Typical Applications

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

### Mechanical Data

- **Package:** TO-247AB  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>c</sub>=25 Unless otherwise specified)

| PARAMETER                                                                                                  | SYMBOL                            | UNIT             | VALUE              |
|------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------|--------------------|
| Device marking code                                                                                        |                                   |                  | D106540NCTQG2      |
| Reverse voltage (repetitive peak)<br>@ T <sub>j</sub> =25°C                                                | V <sub>RRM</sub>                  | V                | 650                |
| Reverse voltage (Surge Peak)<br>@ T <sub>j</sub> =25°C                                                     | V <sub>RSM</sub>                  | V                | 650                |
| Reverse voltage (DC)<br>@ T <sub>j</sub> =25°C                                                             | V <sub>DC</sub>                   | V                | 650                |
| Continuous forward current @ T <sub>c</sub> =25°C                                                          | I <sub>F</sub>                    | A                | 56/112             |
| Continuous forward current @ T <sub>c</sub> =135°C                                                         |                                   |                  | 26/52              |
| Continuous forward current @ T <sub>c</sub> =148°C                                                         |                                   |                  | 20/40              |
| Non-repetitive peak forward surge current<br>@ T <sub>c</sub> =25°C, t <sub>p</sub> =10ms, Hal M nu p re c |                                   | p                |                    |
| Power Dissipation@ T <sub>c</sub> =110°C                                                                   |                                   |                  | 81/158             |
| i <sup>2</sup> t Value@ T <sub>c</sub> =25°C, t <sub>p</sub> =10ms                                         | ∫i <sup>2</sup> dt                | A <sup>2</sup> S | 128 <sup>(1)</sup> |
| Operating junction and Storage temperature range                                                           | T <sub>j</sub> , T <sub>stg</sub> | °C               | -55 to +175        |

(1) Per Leg, (2) Per Device

v(OHFWULFDO &KD&B&WHJLVWLFV

| 3\$5\$07(7(5            | 6<0%2 | 81,7 | 7(67 &21',7,21         |
|-------------------------|-------|------|------------------------|
| )BUZDUC YROWDJH GURS    | )     |      | ) \$ 7 f &             |
|                         |       |      | 9 9                    |
|                         |       |      | ) \$ 7 f &             |
|                         |       |      |                        |
| 5HYHUVH OHDNDJH FXUUHQW | 5     |      | 9 <sub>5</sub> 9 7 f & |
|                         |       |      | ' \$                   |
|                         |       |      | 9 <sub>5</sub> 9 7 f & |
|                         |       |      |                        |
| 7RWDO FDSDFLWLYH FKDUJH | &     |      | Q4 &                   |

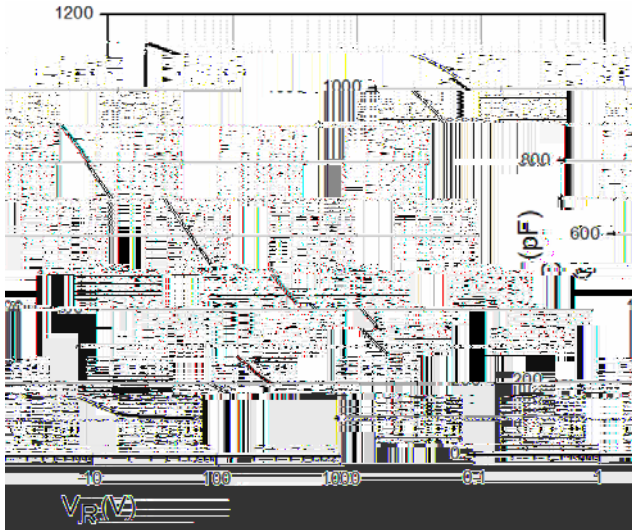


Figure 3. Capacitance vs. Reverse Voltage

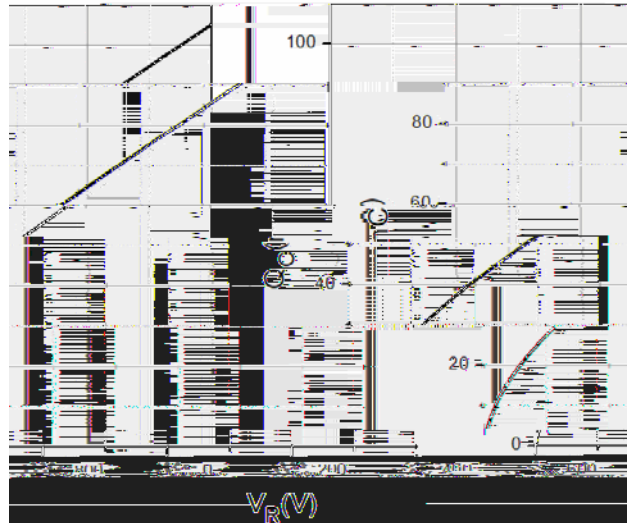


Figure 4. Total Capacitance Charge vs. Reverse Voltage

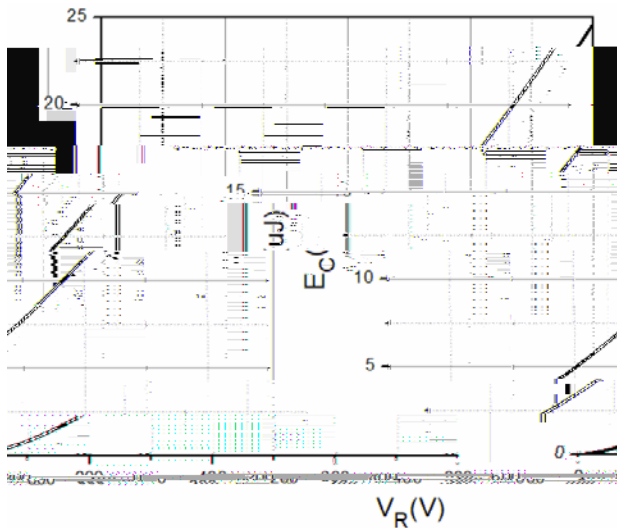


Figure 5. Capacitance Stored Energy

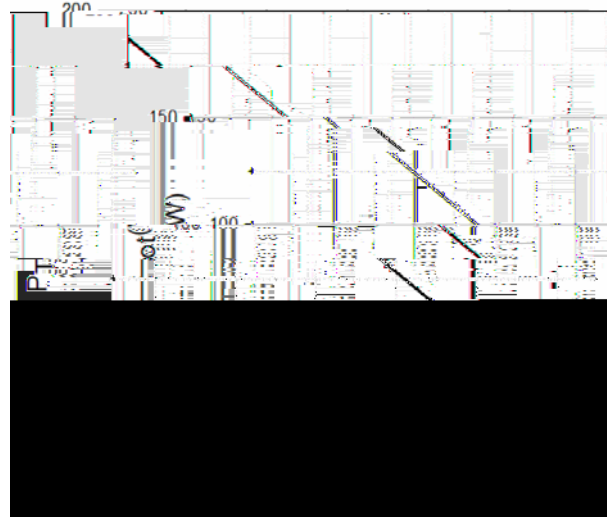


Figure 6. Power Derating

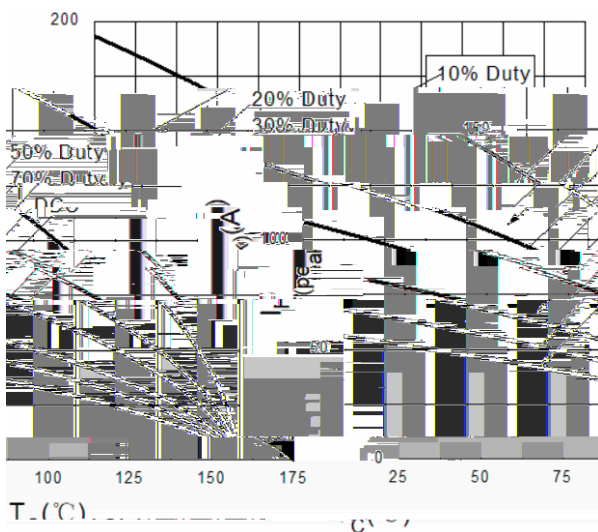


Figure 7. Current Derating





## ■Outline Dimensions

