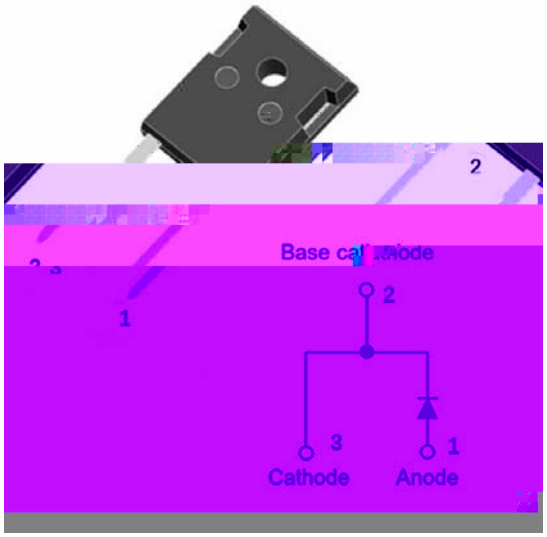
# Silicon Carbide Schottky Diode

| | |
|---|---|
| $V_{RRM}$ | 650V |
| $I_{F\ 135°C}$ | 13A |
| $Q_C$ | 60nC |




## Features

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

**ű o v .e )**

## Mechanical Data

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

## ■Maximum Rating o y

| | SYMBOL | UNIT | VALUE |
|---|---|---|---|
| Device marking code | | | D106510NQG2 |
| Reverse voltage (repetitive peak) @ $T_j$=25°C | $V_{RRM}$ | V | 650 |
| Reverse voltage (Surge Peak) @ $T_j$=25°C | $V_{RSM}$ | V | 650 |
| Reverse voltage (DC) @ $T_j$=25°C | $V_{DC}$ | V | 650 |
| Continuous forward current @ $T_c$=25°C | $I_F$ | A | 27 |
| Continuous forward current @ $T_c$=135°C | | | 13 |
| Continuous forward current @ $T_c$=153°C | | | 10 |
| Non-repetitive peak forward surge current @ $T_c$=25°C, tp=10ms, Half Sine Wave | $I_{FSM}$ | A | 70 |
| Power Dissipation@ $T_c$=25°C | $P_{TOT}$ | W | 126 |
| Power Dissipation@ $T_c$=110°C | | | 54 |
| $i^2t$ Value@ Tc=25°C ,tp=10ms | $\int i^2dt$ | $A^2S$ | 24 |
| Operating junction and Storage temperature range | $T_j$ ,$T_{stg}$ | °C | -55 to +175 |

## ■Electrical Characteristics

| PARAMTETER | SYMBOL | UNIT | TEST CONDITIONS | Typ. | Max. |
|---|---|---|---|---|---|
| Forward voltage drop | $V_F$ | V | $I_F$=10A, $T_j$=25°C | | 1.55 |
| | | | $I_F$=10A, $T_j$=175°C | 1.8 | - |
| Reverse leakage current | $I_R$ | μA | $V_R$=650V, $T_j$=25°C | 0.5 | |

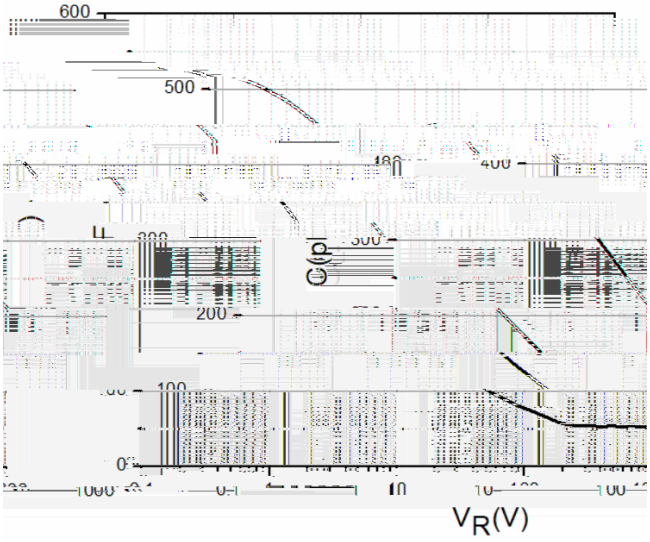



Figure 3. Capacitance vs. Reverse Voltage

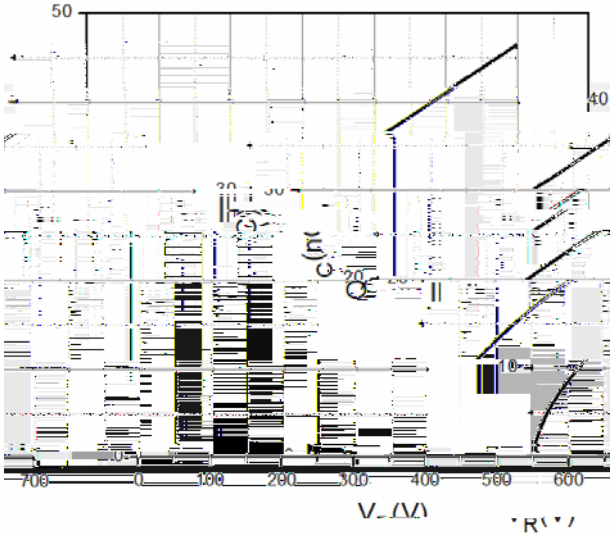



Figure 4. Total Capacitance Charge vs. Reverse Voltage

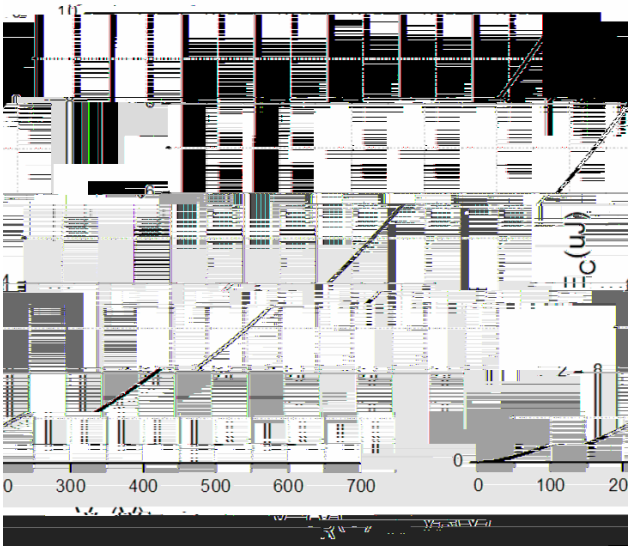



Figure 5. Capacitance Stored Energy

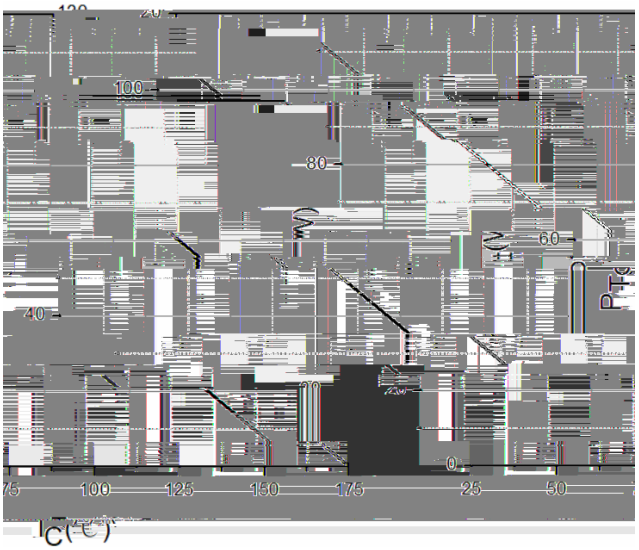



Figure 6. Power Derating

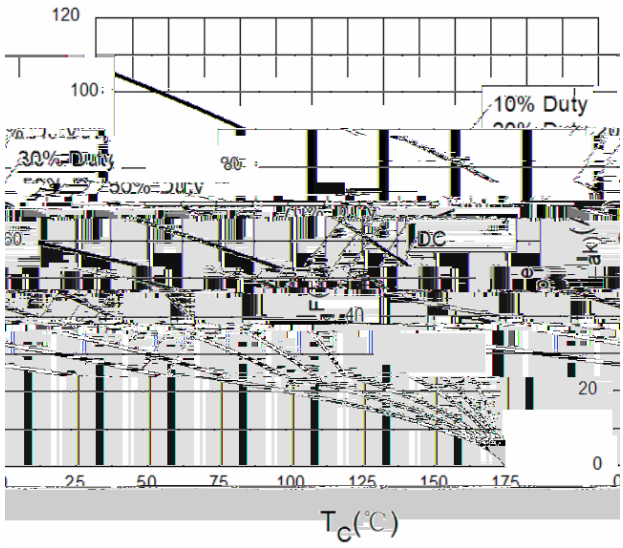



Figure 7. Current Derating

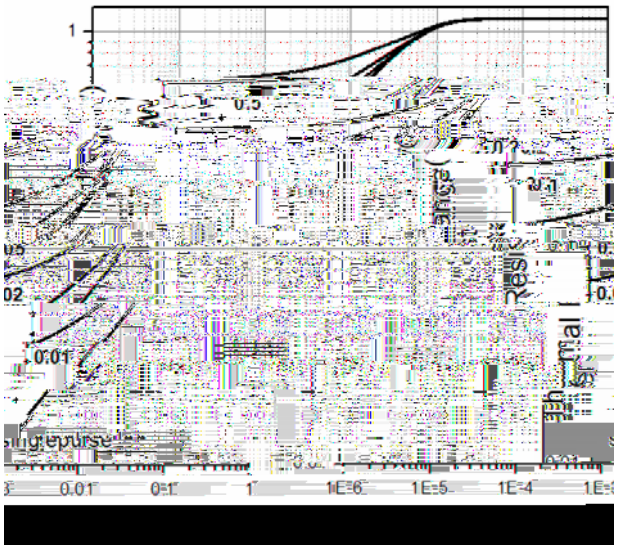



Figure 8. Transient Thermal Impedance

## ■Outline Dimensions

A . ž N ụ b

## Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability an p