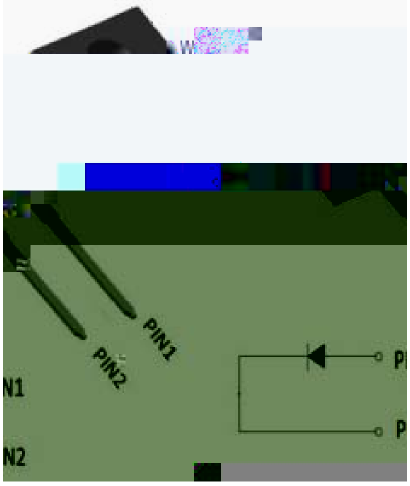
# Silicon Carbide Schottky Diode

| | |
|---|---|
| $V_{RRM}$ | 650V |
| $I_{F\ 125°C}$ | 8A |
| $Q_C$ | 30nC |

## 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



## 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**: ITO-220AC
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads
- **Polarity**: As marked

## ■Maximum Ratings ($T_C$=25 Unless otherwise specified)

| PARAMTETER | SYMBOL | UNIT | VALUE |
|---|---|---|---|
| Device marking code | | | D106508FQG2 |
| Reverse voltage (repetitive peak)<br>@ $T_j$=25°C | $V_{RRM}$ | V | 650 |
| Reverse voltage (Surge Peak)<br>@ $T_j$=25°C | $V_{RSM}$ | V | 650 |
| Reverse voltage (DC)<br>@ $T_j$=25°C | $V_{DC}$ | V | 650 |
| Continuous forward current @ $T_c$=25°C | $I_F$ | A | 16 |
| Continuous forward current @ $T_c$=125°C | | | 8 |
| Non-repetitive peak forward surge current<br>@ $T_c$=25°C, tp=10ms, Half Sine Wave | $I_{FSM}$ | A | 70 |
| Power Dissipation@ $T_c$=25°C | $P_{TOT}$ | W | 43 |
| Power Dissipation@ $T_c$=110°C | | | 19 |
| $i^2t$ 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 |

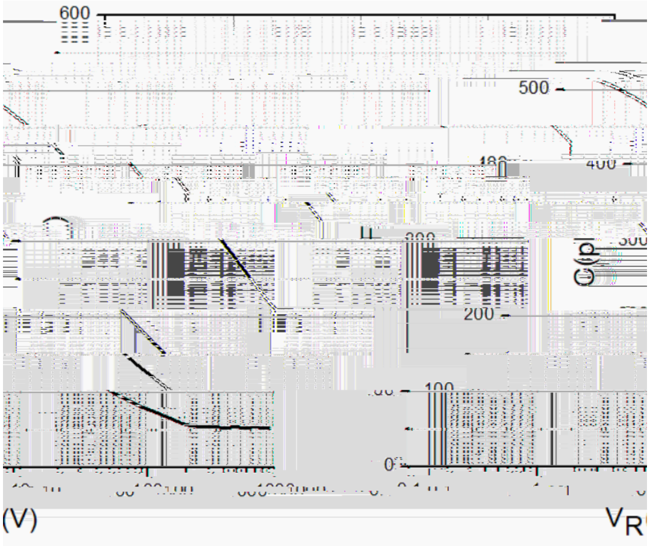


Figure 3. Capacitance vs. Reverse Voltage

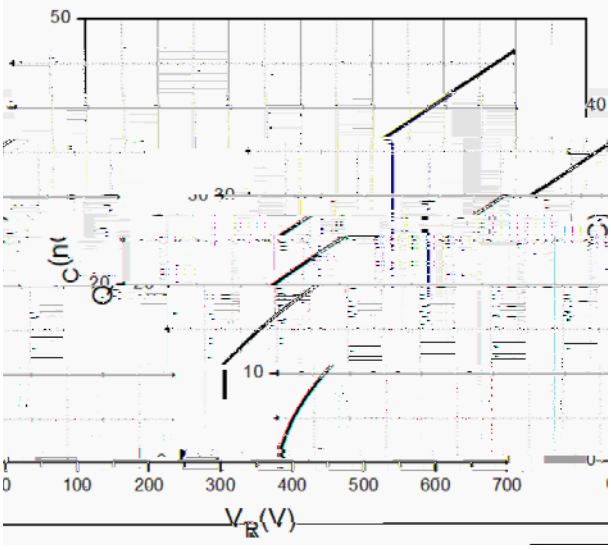


Figure 4. Total Capacitance Charge vs. Reverse Voltage

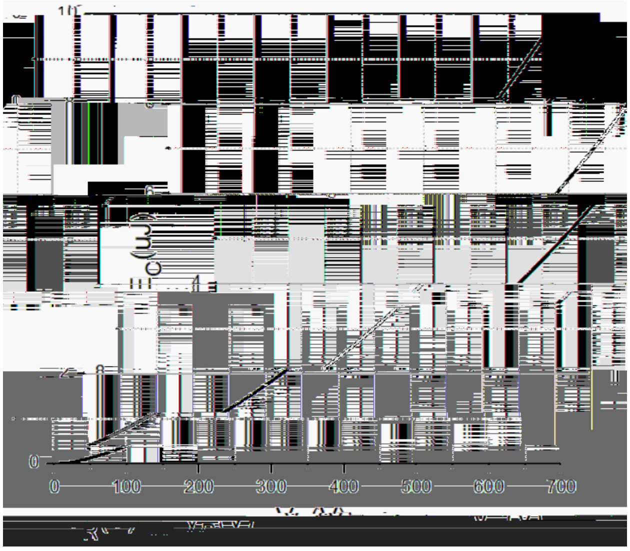


Figure 5. Capacitance Stored Energy

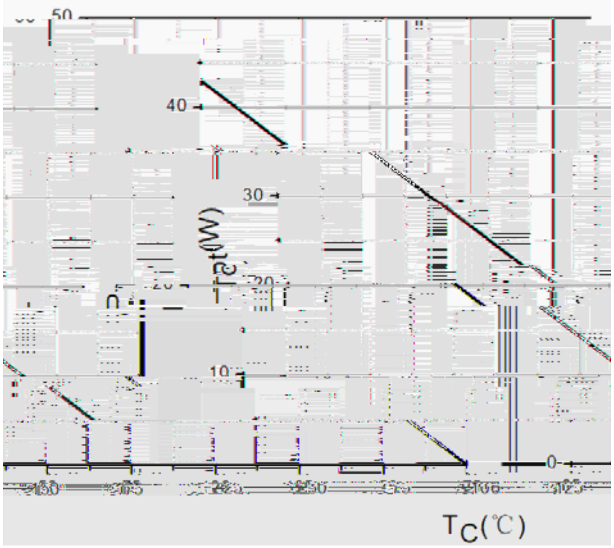


Figure 6. Power Derating

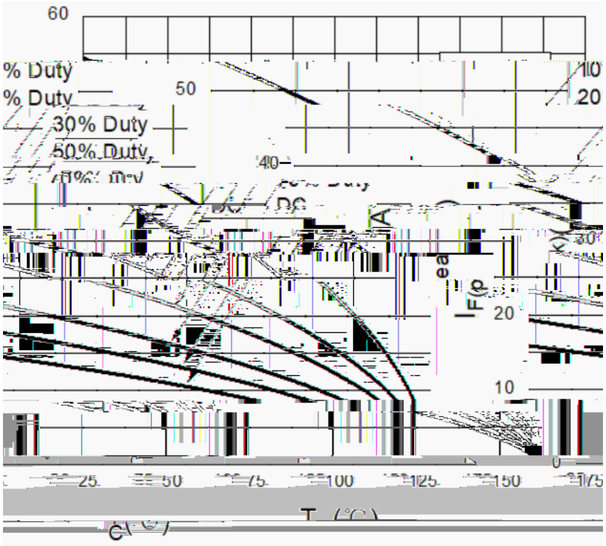


Figure 7. Current Derating

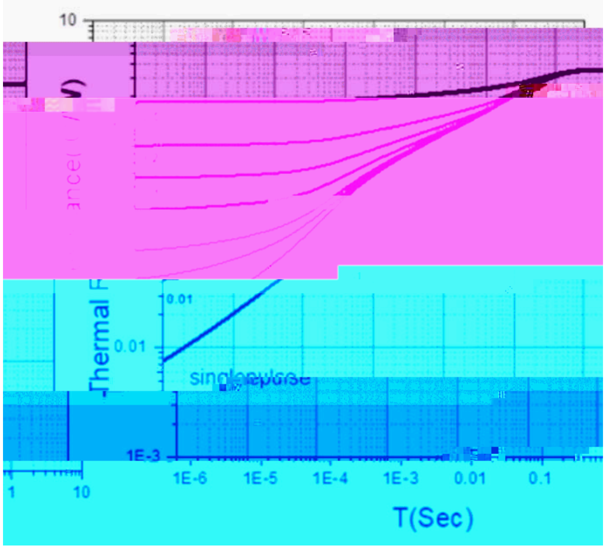
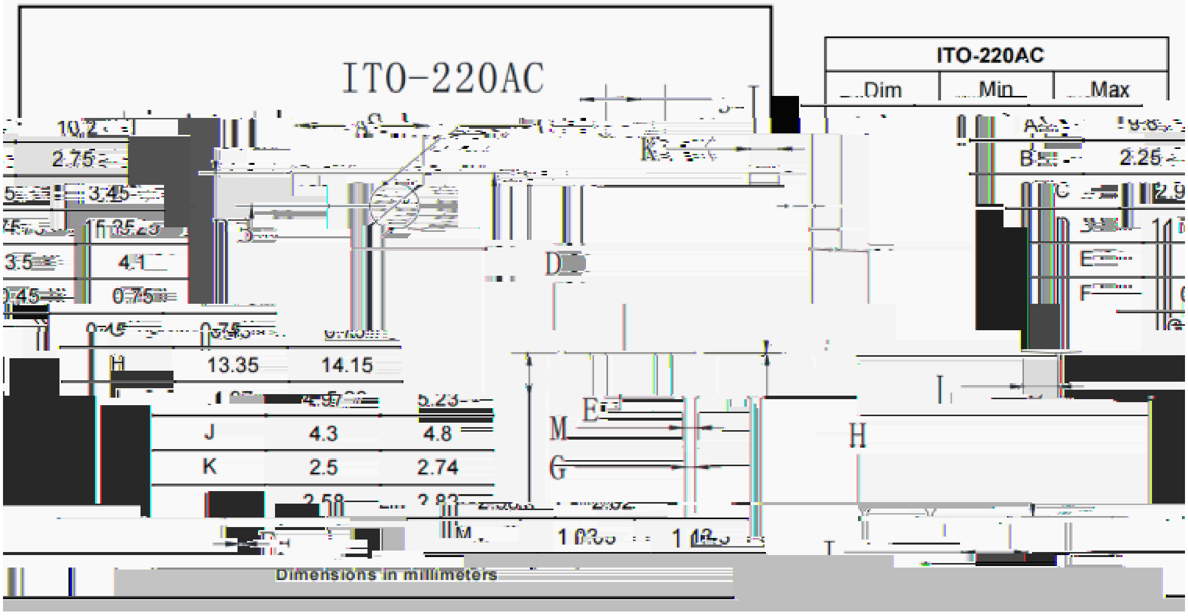


Figure 8. Transient Thermal Impedance

## ■Outline Dimensions



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ULJKW WR PDNH FKDQJHV WR WKH SURGXFWV RU VSHFLILFDWLRQV DQG SURGXFW GHVFULSWLRQV DQG GHVLJQ WKHUHLQ EZ DQG WR GLVFRQWLQXH RU VHDVH WKH SUDFWLFH RI DQ\ SURGXFW VSHFLILFDWLRQ DQG GHVFULSWLRQ RU DQ\ LQIRUPDWLRQ RU DQ\ RWKHU VHUYLFHV ZLWKRXW QRWLFH WR DQ\ RQH LQ
RU RWKHUZLVH

7KH SURGXFW OLVWHG KHUHLQ LV GHVLJQHG WR EH XVHG ZLWK RUGLQDU\ HOHFWURQLF HTXLSPHQW RU GHYLFHV DQG Q
HTXLSPHQW RU GHYLFHV ZKLFK UHTXLUH KLJK OHYHO RI UHOLDELOLW\ DQG WKH PDOIXQFWLRQ RI ZKLFK ZRXOG GLUHFWO\ FDXVH GHDWK RU LQMXU\ WR KXPDQ OLIH
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RI VDOH

7KLV SXEOLFDWLRQ VXSHUVHGHV DQG UHSODFHV DOO LQIRUPDWLRQ SUHYLRXVO\ VXSSOLHG )RU DGGLWLRQDO LQIRUPDWLRQ SOHDVH YLVLW RX
KWWS ZZZ \DQJMLH FRP RU FRQVXOW \RXU QHDUHVW <DQJMLH VDOHV RIILFH IRU IXUWKHU D