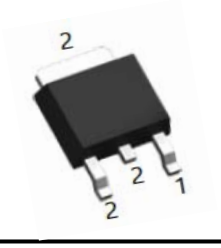
# CSR010-065J3

## SiC SCHOTTKY DIODE TYPE 10A

## Features

- Low reverse current
- Good surge current capability
- No reverse recovery current
- Halogen Free, and RoHS Compliant
- System efficiency improvement over Si diodes
- Suitable for high power application
- $V_{DC}$ 650 V
- $I_F$ ($T_{C=25 / 157\ °C}$) 30A/10A

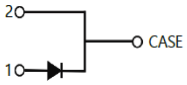
TO-252-3L




Package Dimensions

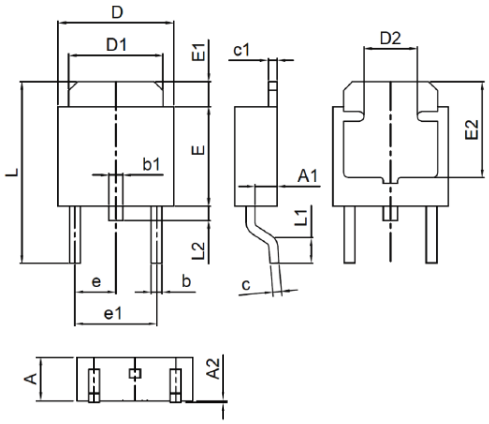
## Benefits

- Higher system level efficiency
- Increase system power density
- Reduction of heat sink requirements
- Parallel devices without thermal runaway




## Applications

- Switch mode power supplies (SMPS)
- Server/telecom power supplies
- Industrial power supplies
- Solar
- UPS




## Maximum Ratings

Operating Junction Temperature : -55℃ to +175℃

Storage Temperature : -55℃ to +150℃

| Part Number | Maximum Recurrent Peak Reverse Voltage | Maximum DC Blocking Voltage |
|---|---|---|
| CSR010-065J3 | 650V | 650V |

| Maximum Rating | Symbol | Conditions | Value | Unit |
|---|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | $T_J$ =25 °C | 650 | V |
| Continuous forward current | $I_F$ | $T_C$=25 °C | 30 | A |
| | | $T_C$=125 °C | 18 | |
| | | $T_C$=157°C | 10 | |
| Non-repetitive forward surge current | $I_{FSM}$ | $T_C$=25 °C | 80 | |
| Power Dissipation | $P_D$ | $T_C$=25 °C | 75 | W |

Unit : mm

| Symbol | Min | Max |
|---|---|---|
| A | 2.20 | 2.50 |
| A1 | 1.00 | 1.40 |
| A2 | 0.00 | 0.15 |
| b | 0.50 | 0.70 |
| b1 | 0.70 | 0.90 |
| c | 0.40 | 0.60 |
| c1 | 0.40 | 0.60 |
| D | 6.20 | 6.70 |
| D1 | 5.10 | 5.50 |
| D2 | 2.70 | 3.20 |
| E | 5.20 | 5.80 |
| E1 | 1.20 | 1.60 |
| E2 | 5.00 | 5.60 |
| e | 2.20 | 2.40 |
| e1 | 4.40 | 4.80 |
| L | 9.70 | 10.40 |
| L1 | 1.40 | 1.70 |
| L2 | 0.60 | 1.20 |

**Electrical Characteristics**, at $T_J$ =25 °C, unless otherwise specified.

| Static Characteristics | Symbol | Conditions | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | min. | typ. | max. | |
| DC blocking voltage | $V_{DC}$ | | 650 | - | - | V |
| Diode forward voltage | $V_F$ | $I_F$ =10A, $T_J$ =25°C | - | 1.3 | 1.5 | |
| | | $I_F$ =10A, $T_J$ =175°C | - | 1.5 | - | |
| Reverse current | $I_R$ | $V_R$ =650V, $T_J$ =25°C | - | 5 | 50 | μA |
| | | $V_R$ =650V, $T_J$ =175°C | - | 38 | 200 | |

**AC Characteristics**

| Static Characteristics | Symbol | Conditions | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | min. | typ. | max. | |
| Total capacitive charge | $Q_C$ | $V_R$=400V | - | 27 | - | nC |
| Total capacitance | C | $V_R$=0V, f=1 MHz | - | 562 | - | pF |
| | | $V_R$=400V, f=1 MHz | - | 44 | - | |

**Thermal Characteristics**

| Static Characteristics | Symbol | Values | Unit |
|---|---|---|---|
| | | max. | |
| Thermal resistance from junction to case | $R_{\theta JC}$ | 2.0 | °C/W |

## Typical Device Performance

**Fig.1 Typical Forward Characteristics**

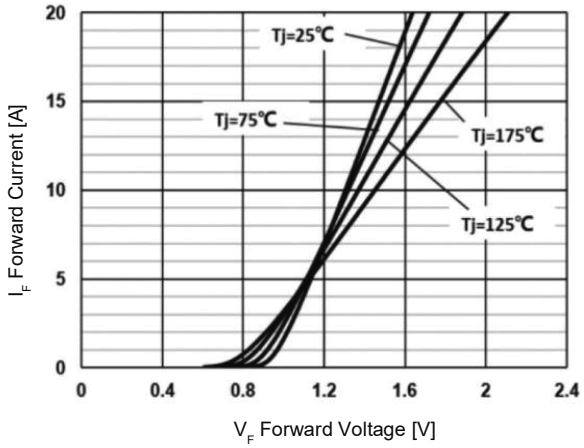



**Fig.2 Typical Reverse Current as Function of Reverse Voltage**

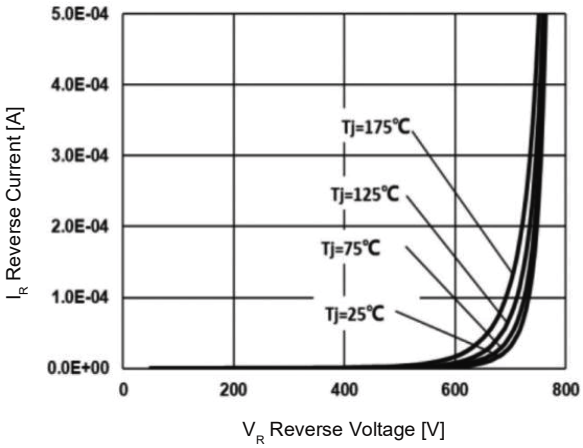



**Fig.3 Diode Forward Current as Function of Temperature**

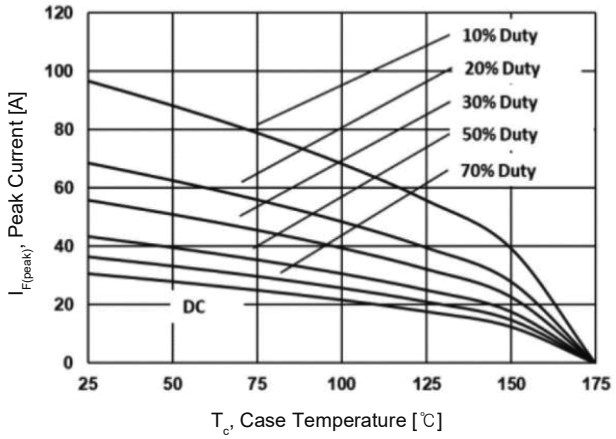



**Fig.4 Typical Capacitance as Function of Reverse Voltage**

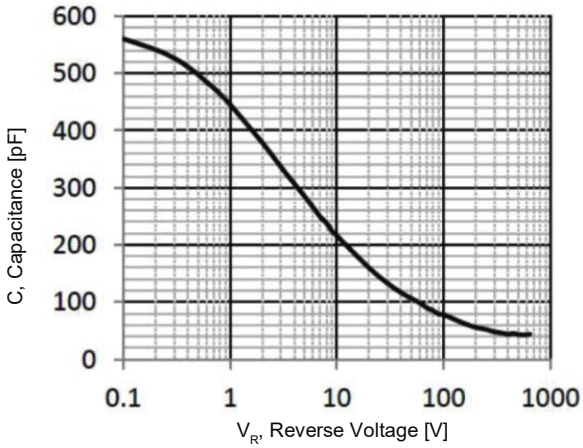



**Fig.5 Typical Reverse Charge as Function of Reverse Voltage**

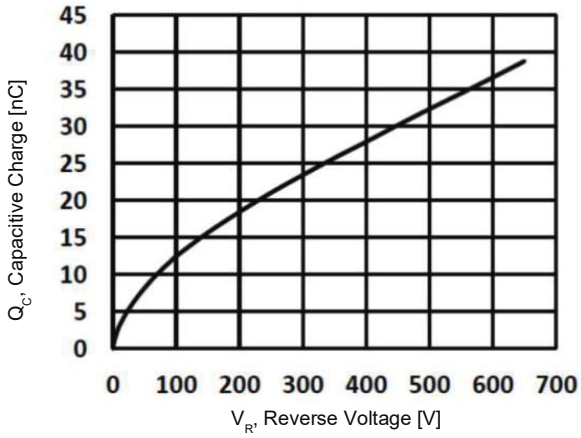
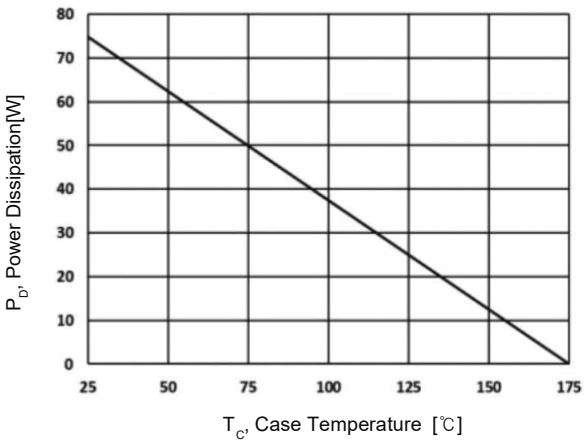
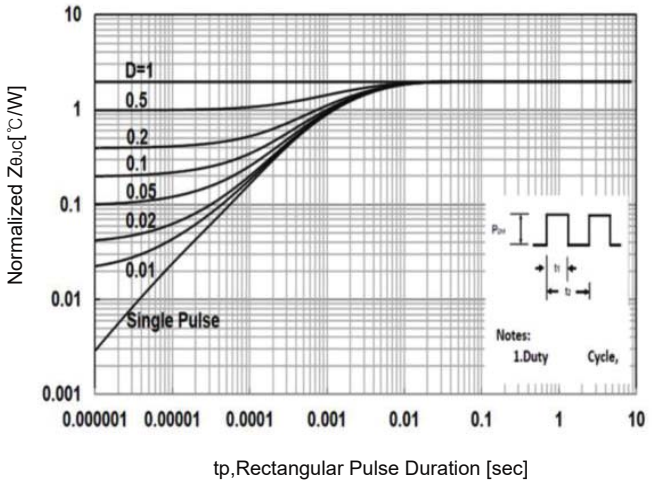



**Fig.6 Power Dissipation as Function of Case Temperature**



## Typical Device Performance

**Fig.7 Transient Thermal impedance**



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