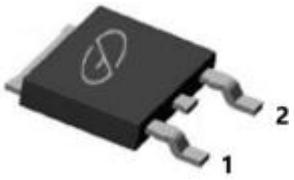
# 2A, 650V Silicon Carbide Schottky Diode

## Features

- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21




**TO-252**

## Applications

- Boost Diodes in PFC or DC/DC stages
- LED Lighting Power Supplies
- Power Factor Correction


## Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 2500 units per reel

## Maximum Ratings & Electrical Characteristics ($T_A$=25℃ unless otherwise noted)

| Parameter | | Symbol | GS02D065SD1 | Unit |
|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | $V_{RRM}$ | 650 | V |
| Working peak reverse voltage | | $V_{RWM}$ | 650 | V |
| Maximum DC blocking voltage | | $V_{DC}$ | 650 | V |
| Maximum average forward rectified current | $T_C$=25°C | $I_{F(AV)}$ | 7.5 | A |
| | $T_C$=135°C | | 3.8 | |
| | $T_C$=158°C | | 2 | |
| Peak forward surge current，tp=10ms,Half Sine Pulse | | $I_{FSM}$ | 18 | A |
| Power dissipation | $T_C$=25°C | $P_{tot}$ | 34 | W |
| | $T_C$=110°C | | 14 | |
| Operating junction temperature range | | $T_J$ | -55 to +175 | °C |
| Storage temperature range | | $T_{STG}$ | -55 to +175 | °C |

## Electrical Specifications ($T_A$=25℃ unless otherwise noted)

| Parameter | Symbol | Test Conditions | Typ | Max | Unit |
|---|---|---|---|---|---|
| Forward drop voltage | $V_F$ | $I_F$=2A, $T_J$=25℃ | 1.3 | 1.5 | V |
| | | $I_F$=2A, $T_J$=175℃ | 1.5 | - | |
| Reverse leakage current @rated $V_R$ | $I_R$ | $V_R$=650V, $T_J$=25℃ | 3 | 50 | μA |
| | | $V_R$=650V, $T_J$=175℃ | 10 | 100 | |
| Total capacitive charge | $Q_C$ | $V_R$=400V, $T_J$=25℃ | 3.8 | - | nC |
| Total capacitance | C | $V_R$=400V, $T_J$=25℃, f=1MHz | 8 | - | pF |

## Thermal-Mechanical Specifications ($T_A$=25℃ unless otherwise noted)

| Parameter | Symbol | Typ | Max | Unit |
|---|---|---|---|---|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 3.9 | - | ℃ /W |

## Ratings and Characteristics Curves

($T_A$ = 25℃ unless otherwise noted)

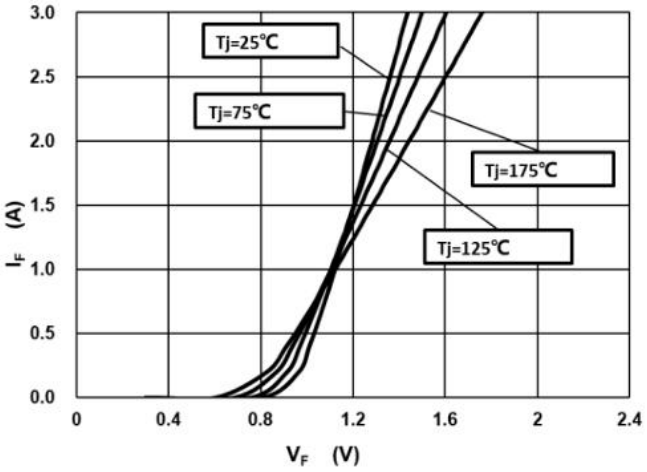



Fig.1 –Forward Characteristics

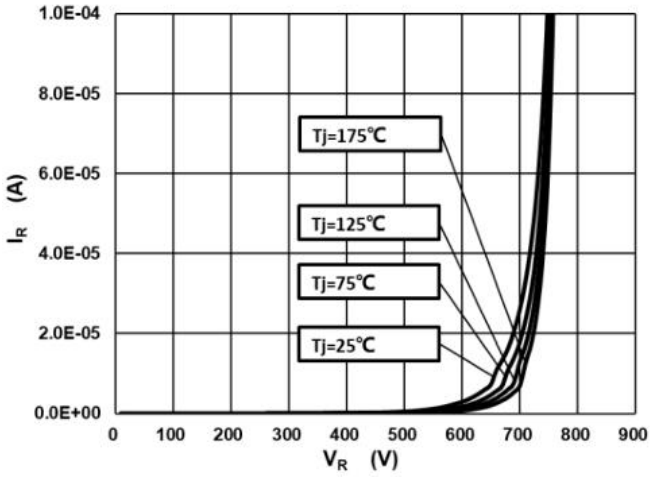



Fig.2 –Reverse Characteristics

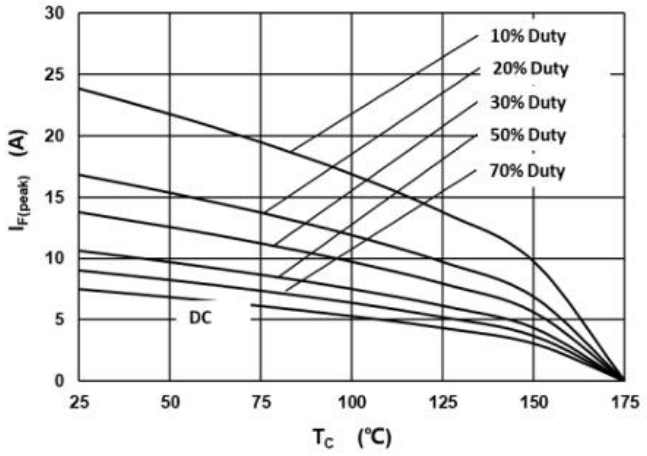



Fig.3 –Current Derating

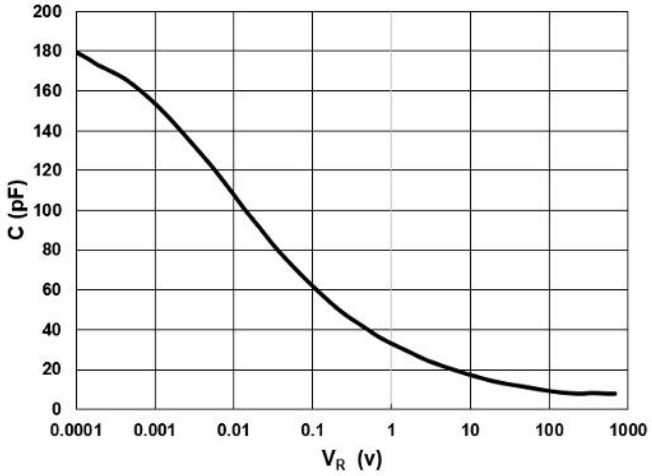



Fig.4 –Capacitance vs. Reverse Voltage

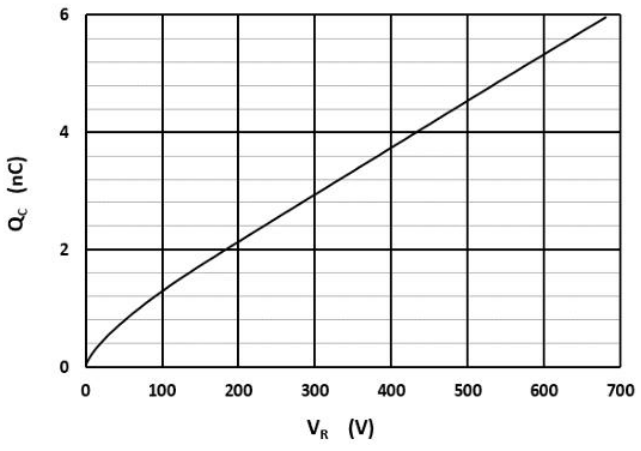



Fig.5 –Total Capacitance Charge vs. Reverse Voltage

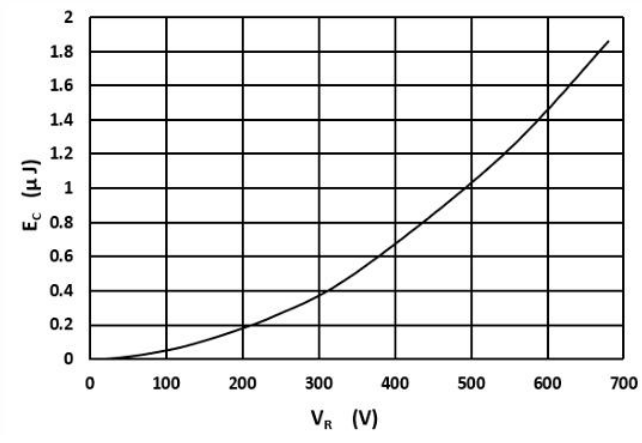
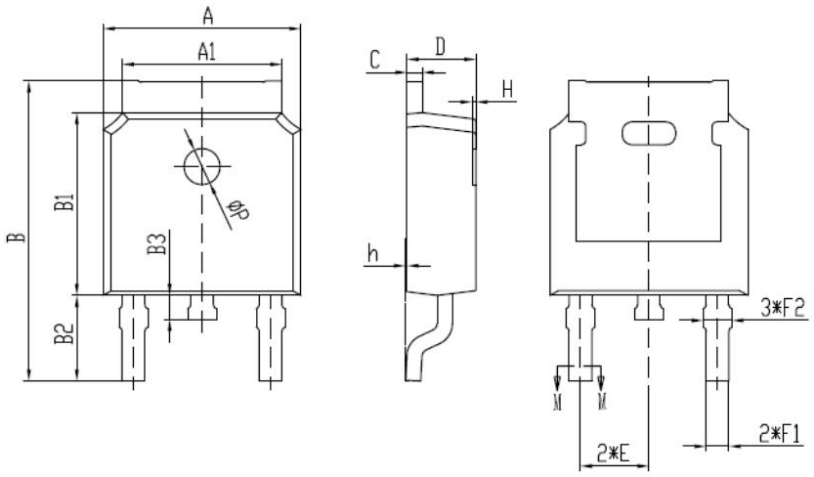



Fig.6 –Typical Capacitance Stored Energy

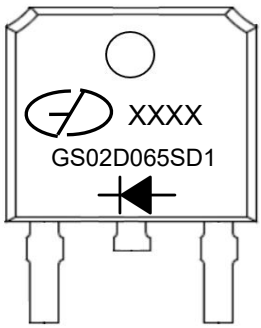
## Package Outline Dimensions (Unit: millimeters)

### TO-252




| 项目 | 规范(mm) | |
|---|---|---|
| | MIN | MAX |
| A | 6.50 | 6.70 |
| A1 | 5.16 | 5.46 |
| B | 9.77 | 10.17 |
| B1 | 6.00 | 6.20 |
| B2 | 2.60 | 3.00 |
| B3 | 0.70 | 0.90 |
| C | 0.45 | 0.61 |
| D | 2.20 | 2.40 |
| E | 2.186 | 2.386 |
| F1 | 0.67 | 0.87 |
| F2 | 0.76 | 0.96 |
| H | 0.00 | 0.30 |
| h | 0.00 | 0.127 |
| L | 6.50 | 6.70 |
| Φ P | 1.10 | 1.30 |

## Marking Outline




1. Logo Mark:
2. Data code: XXXX
3. Part Name: GS02D065SD1
4. Polarity :

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