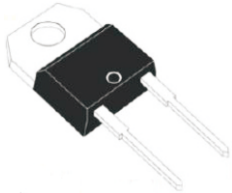
# Silicon Carbide Power Schottky Diode

# CDBJSC101700-G

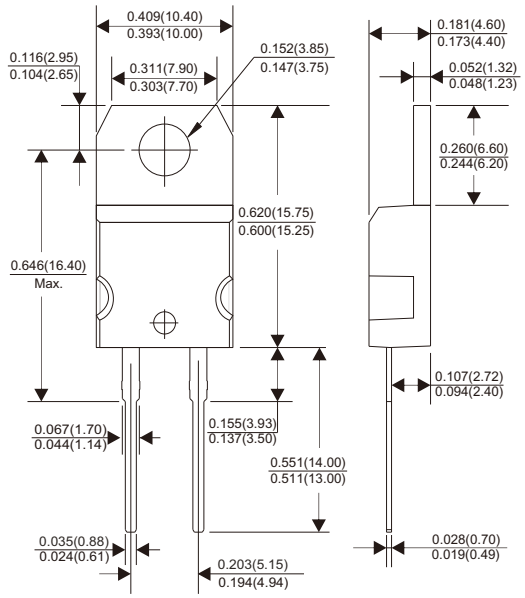
## Reverse Voltage: 1700 V
## Forward Current: 10 A
## RoHS Device



## Features

- Rated to 1700V at 10 Amps
- Short recovery time.
- High speed switching possible.
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on VF.

**TO-220-2**

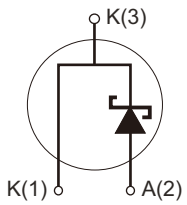



Dimensions in inches and (millimeter)

## Mechanical data

- Case: TO-220-2, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

## Circuit Diagram




## Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Value | Unit |
|---|---|---|---|---|
| Repetitive peak reverse voltage | | $V_{RRM}$ | 1700 | V |
| Surge peak reverse voltage | | $V_{RSM}$ | 1700 | V |
| DC blocking voltage | | $V_{DC}$ | 1700 | V |
| Continuous forward current | $T_C$ = 155°C | $I_F$ | 10 | A |
| Repetitive peak forward surge current | Tc = 25°C, tp = 10ms Half sine wave, D = 0.3 | $I_{FRM}$ | 50 | A |
| Non-repetitive peak forward surge current | Tc = 25°C, tp = 10ms Half sine wave | $I_{FSM}$ | 90 | A |
| Power dissipation | $T_C$ = 25°C | $P_{TOT}$ | 192 | W |
| | $T_C$ = 110°C | | 82 | |
| Typical thermal resistance | Junction to case | $R_{\theta JC}$ | 0.78 | °C/W |
| Operating junction temperature range | | $T_J$ | -55 ~ +175 | °C |
| Storage temperature range | | $T_{STG}$ | -55 ~ +175 | °C |

## Electrical Characteristics (at Ta=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Typ | Max | Unit |
|---|---|---|---|---|---|
| Forward voltage | $I_F$ = 10 A , $T_J$ = 25°C | $V_F$ | 1.4 | 1.7 | V |
| | $I_F$ = 10 A , $T_J$ = 175°C | | 2.1 | 3 | |
| Reverse current | $V_R$ = 1700V , $T_J$ = 25°C | $I_R$ | 30 | 100 | μA |
| | $V_R$ = 1700V , $T_J$ = 175°C | | 50 | 200 | |
| Total capacitive charge | $V_R$ = 1200V , $T_J$ = 150°C<br>$Q_C = \int_0^{V_R} C(V)\,dv$ | $Q_C$ | 122 | - | nC |
| Total capacitance | $V_R$ = 0V , $T_J$ = 25°C , f = 1 MHz | C | 1400 | 1600 | pF |
| | $V_R$ = 400V , $T_J$ = 25°C , f = 1 MHz | | 90 | 120 | |
| | $V_R$ = 800V , $T_J$ = 25°C , f = 1 MHz | | 66 | 80 | |

## Rating and Characteristics Curves (CDBJSC101700-G)

Fig.1 - Forward Characteristics

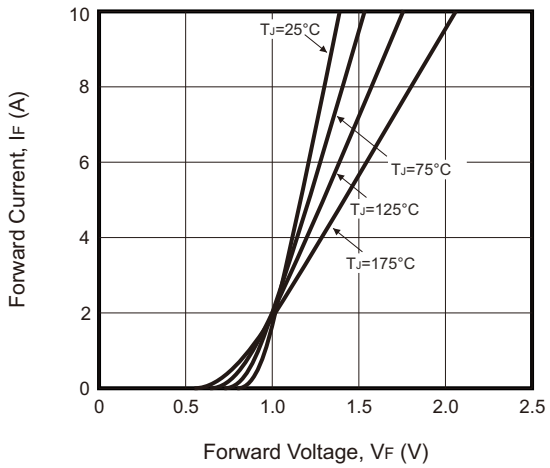



Fig.2 - Reverse Characteristics

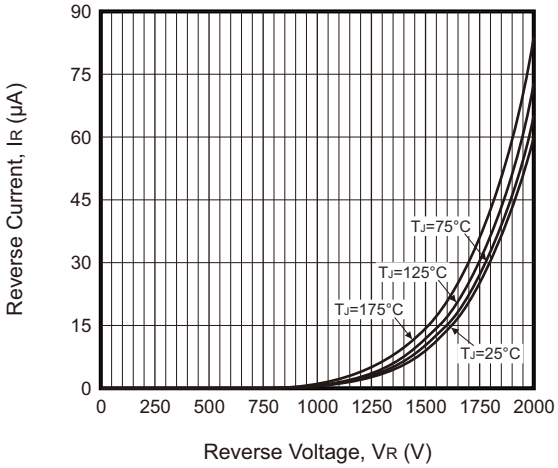



Fig.3 - Current Derating

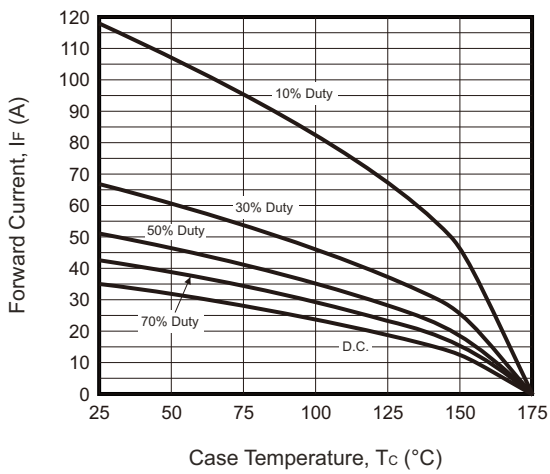
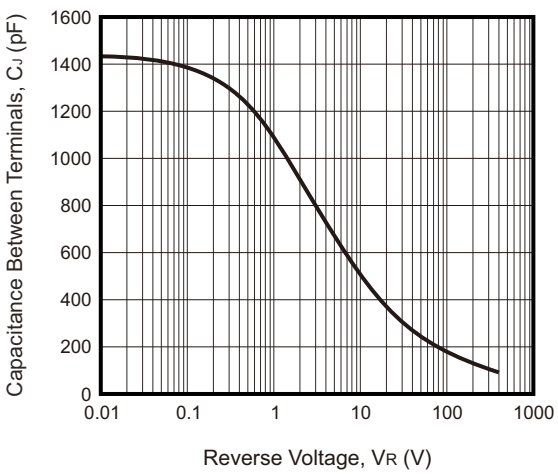


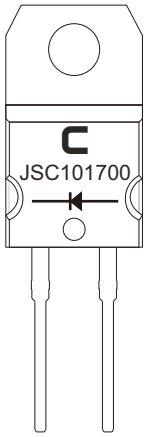

Fig.4 - Capacitance vs. Reverse Voltage




Company reserves the right to improve product design , functions and reliability without notice. REV:A

## Marking Code

| Part Number | Marking Code |
|---|---|
| CDBJSC101700-G | JSC101700 |




## Standard Packaging

| Case Type | TUBE PACK | |
|---|---|---|
| | TUBE ( pcs ) | BOX ( pcs ) |
| TO-220-2 | 50 | 1,000 |