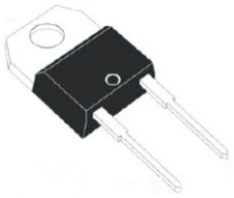
Silicon Carbide Power Schottky Diode

CDBJSC101700-G

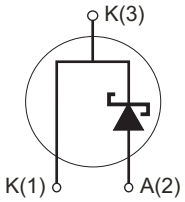
Reverse Voltage: 1700 V
Forward Current: 10 A
RoHS Device



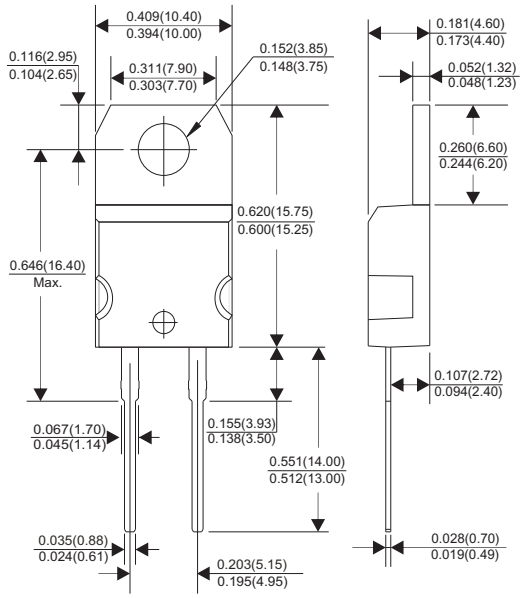
Features

- 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.

Circuit diagram



TO-220-2 pin



Dimensions in inches and (millimeter)

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 bolcking voltage		V_{DC}	1700	V
Continuous forward current	T_C = 25°C T_C = 135°C T_C = 155°C	I_F	35 17 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 $Q_C = \int_0^{V_R} C(V)\,dv$	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	

Typical Characteristics (CDBJSC101700-G)

Fig.1 - Forward Characteristics

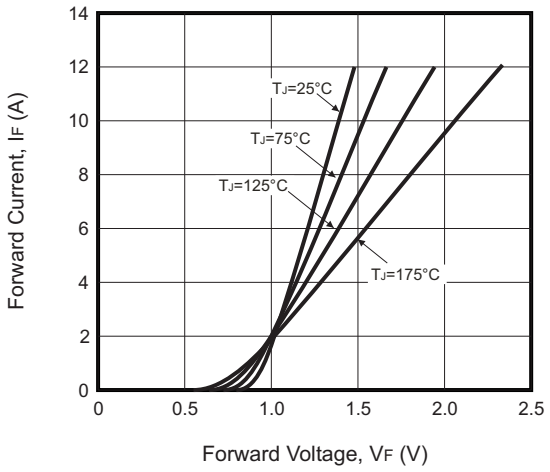


Fig.2 - Reverse Characteristics

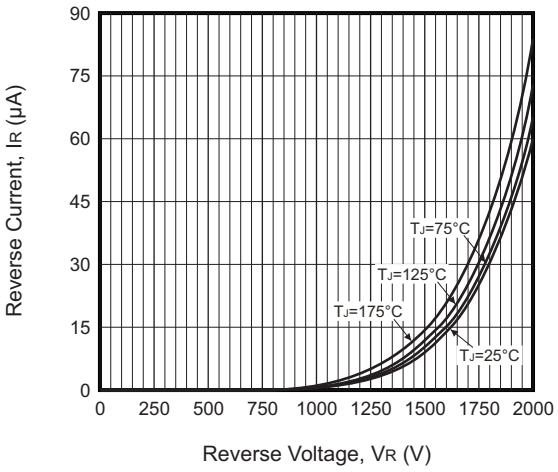


Fig.3 - Current Derating

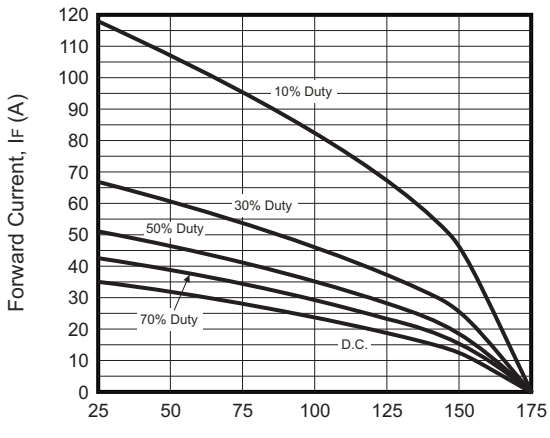
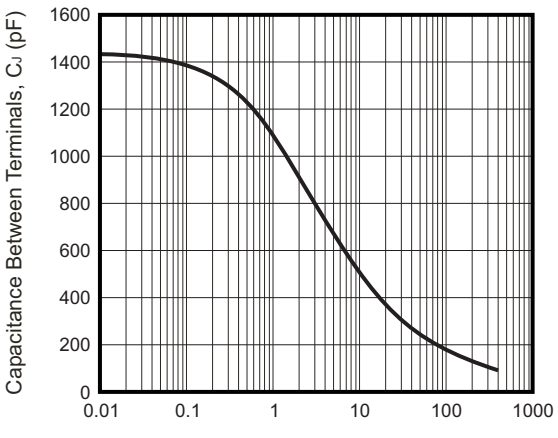


Fig.4 - Capacitance vs. Reverse Voltage



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