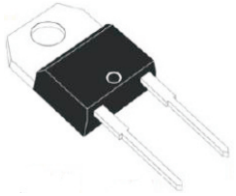
Silicon Carbide Power Schottky Diode

CDBJSC8650-G

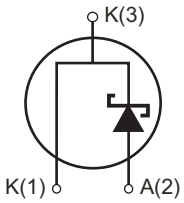
Reverse Voltage: 650 V
Forward Current: 8 A
RoHS Device



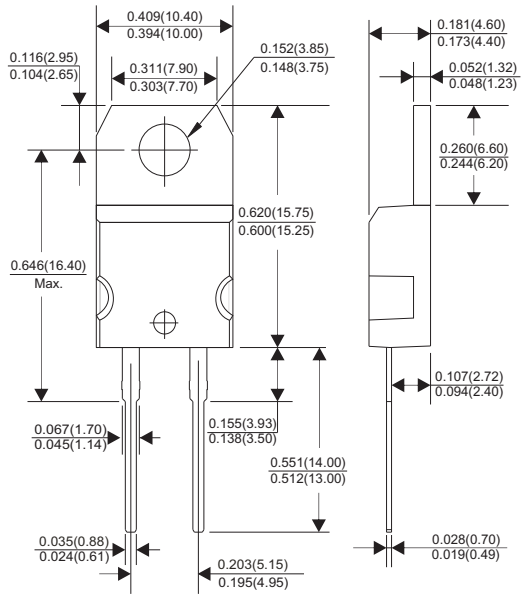
Features

- Rated to 650V at 8 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



Dimensions in inches and (millimeter)

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

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	650	V
Surge peak reverse voltage		V_{RSM}	650	V
DC blocking voltage		V_{DC}	650	V
Typical continuous forward current	T_C = 150°C	I_F	8	A
Repetitive peak forward surge current	T_C = 25°C, tp = 10ms Half sine wave, D = 0.3	I_{FRM}	40	A
Non-repetitive peak forward surge current	T_C = 25°C, tp = 10ms Half sine wave	I_{FSM}	80	A
Power dissipation	T_C = 25°C	P_{TOT}	102.4	W
	T_C = 110°C		45	
Typical thermal resistance	Junction to case	$R_{\theta JC}$	1.465	°C/W
Operating junction temperature range		T_J	-55 ~ +175	°C
Storage temperature range		T_{STG}	-55 ~ +175	°C

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

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

Parameter	Conditions	Symbol	Typ	Max	Unit
Forward voltage	I_F = 8 A , T_J = 25°C	V_F	1.47	1.7	V
	I_F = 8 A , T_J = 175°C		1.78		
Reverse current	V_R = 650V , T_J = 25°C	I_R	10	100	μA
	V_R = 650V , T_J = 175°C		15		
Total capacitive charge	V_R = 400V , T_J = 150°C $Q_C = \int_0^{V_R} C(V)\,dv$	Q_C	30		nC
Total capacitance	V_R = 0V , T_J = 25°C , f = 1 MHz	C	560		pF
	V_R = 200V , T_J = 25°C , f = 1 MHz		56.5		
	V_R = 400V , T_J = 25°C , f = 1 MHz		54		

Typical Characteristics (CDBJSC8650-G)

Fig.1 - Forward Characteristics

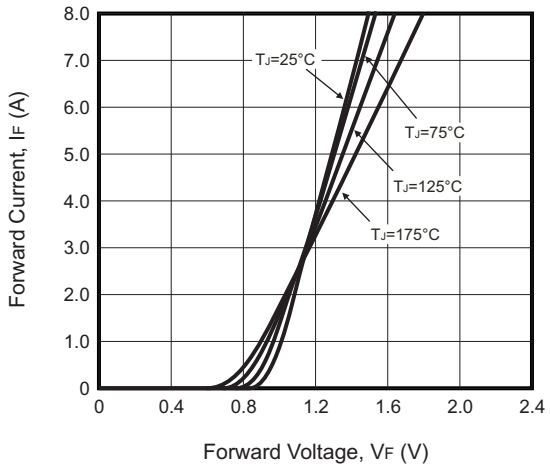


Fig.2 - Reverse Characteristics

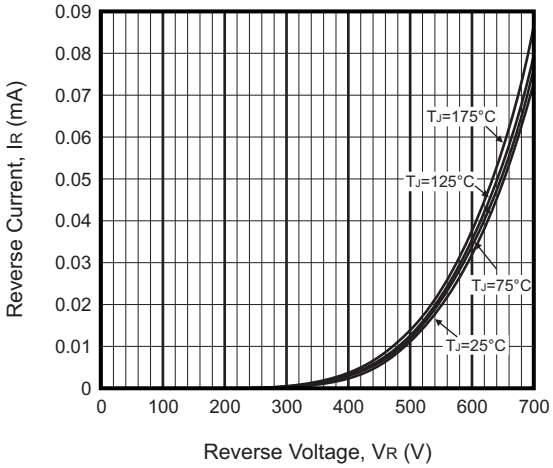


Fig.3 - Current Derating

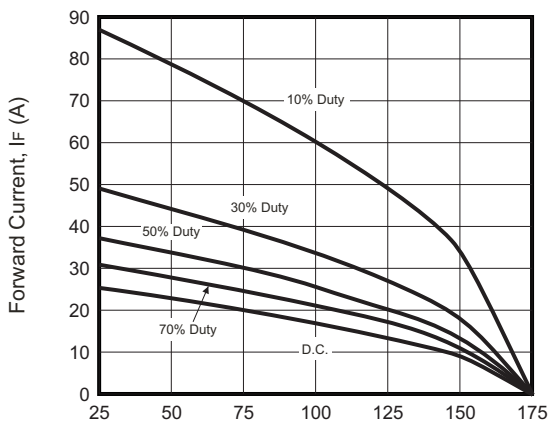
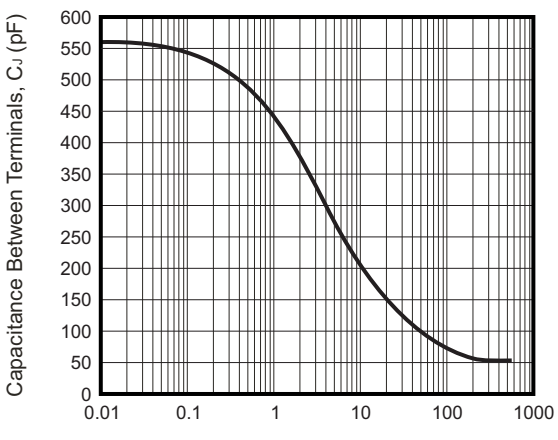


Fig.4 - Capacitance vs. Reverse Voltage



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