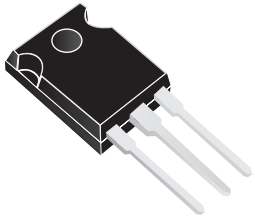
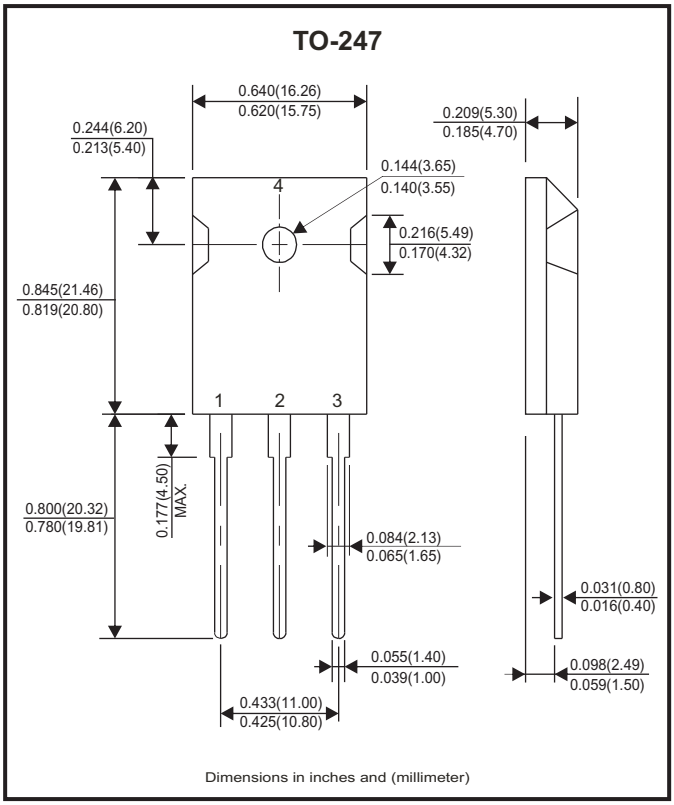
Dual Silicon Carbide Power Schottky Diode

CDBGBSC201200-G

Reverse Voltage: 1200V
Forward Current: 20A
RoHS Device

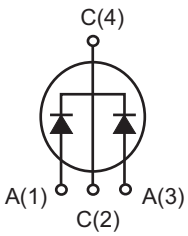




Features

- Rated to 1200 at 20 Amps
- Short recovery time
- High speed switching possible
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on V_F

Circuit diagram



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

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage	T_J = 25°C	V_{RRM}	1200	V
Surge peak reverse voltage	T_J = 25°C	V_{RSM}	1200	V
DC bolcking voltage	T_J = 25°C	V_{DC}	1200	V
Continuous forward current	T_C = 25°C (Per leg) T_C = 135°C (Per leg) T_C = 155°C (Per leg)	I_F	25.9 12.5 10	A
Repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave, D = 0.3 (Per leg)	I_{FRM}	50	A
Non-repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave (Per leg)	I_{FSM}	100	A
Power dissipation	T_C = 25°C (Per leg)	P_{TOT}	141.5	W
	T_C = 110°C (Per leg)		62	
Typical thermal resistance from junction to case	Per leg	$R_{\theta JC}$	1.06	°C/W
	Per diode	$R_{\theta JC}$	0.27	
Maximum case temperature		T_C	135	°C
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	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 10A, T_j = 25°C	V_F		1.63	1.8	V
	I_F = 10A, T_j = 175°C			2.55	3	
Reverse current	V_R = 1200V, T_j = 25°C	I_R		50	100	μA
	V_R = 1200V, T_j = 175°C			100	200	
Total capacitive charge	V_R = 800V, T_j = 150°C $Q_C = \int_0^{V_R} C(V)\,dv$	Q_C		69	-	nC
Total capacitance	V_R = 0V, T_j = 25°C, f = 1MHz	C		770	790	pF
	V_R = 400V, T_j = 25°C, f = 1MHz			52	54	
	V_R = 800V, T_j = 25°C, f = 1MHz			50	51	

RATING AND CHARACTERISTIC CURVES (CDBGBSC201200-G)

Fig.1 - Forward IV Characteristics as a Function of T_J :

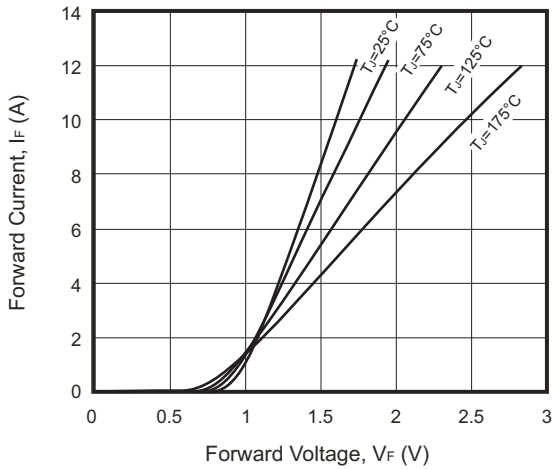


Fig.2 - Reverse IV Characteristics as a Function of T_J :

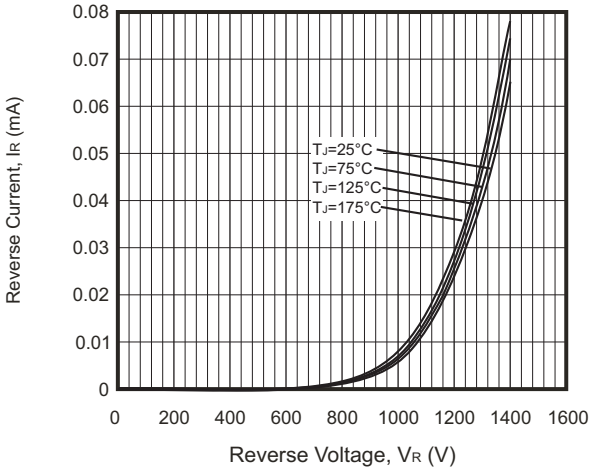


Fig.3 - Current Derating

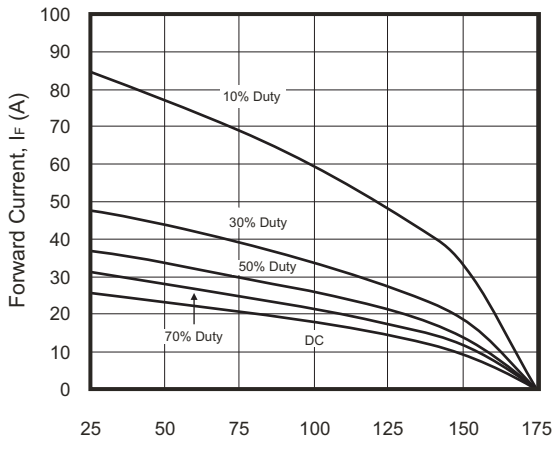


Fig.4 - Capacitance VS. Reverse Voltage