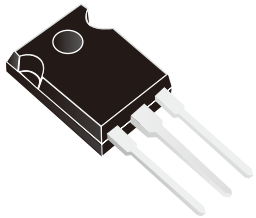
Silicon Carbide Power Schottky Diode

CDBGBSC101200-G

Reverse Voltage: 1200V
Forward Current: 10A
RoHS Device



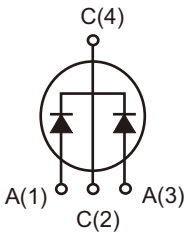
Features

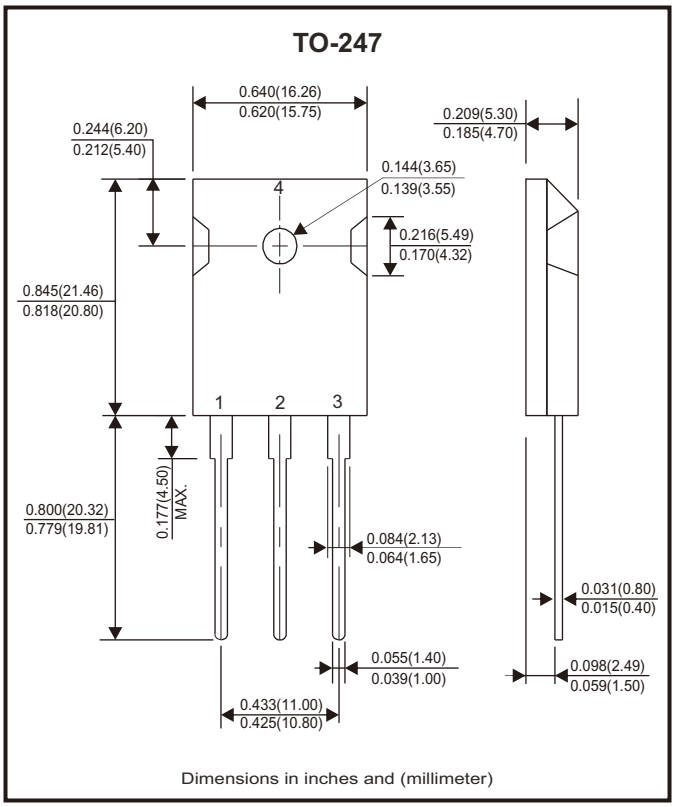
- Rated to 1200 at 10 Amps
- Short recovery time.
- High speed switching possible.
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on V_F.

Mechanical Data

- Case: TO-247, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

Circuit diagram





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

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	1200	V
Surge peak reverse voltage		V_{RSM}	1200	V
DC blocking voltage		V_{DC}	1200	V
Typical continuous forward current	T_C = 155°C (Per leg)	I_F	5	A
Repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave, D = 0.3 (Per leg)	I_{FRM}	25	A
Non-repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave (Per leg)	I_{FSM}	50	A
Power dissipation	T_C = 25°C (Per leg)	P_{TOT}	109.5	W
	T_C = 110°C (Per leg)		47	
Typical thermal resistance from junction to case	Per leg	$R_{\theta JC}$	1.37	°C/W
	Per diode	$R_{\theta JC}$	0.69	
Operating junction temperature range		T_J	-55 ~ +175	°C
Storage temperature range		T_{STG}	-55 ~ +175	°C

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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 5A, T_j = 25°C	V_F		1.45	1.7	V
	I_F = 5A, T_j = 175°C			2.05		
Reverse current	V_R = 1200V, T_j = 25°C	I_R		20	100	μA
	V_R = 1200V, T_j = 175°C			50		
Total capacitive charge	V_R = 800V, T_j = 150°C $Q_C = \int_0^{VR} C(V)\,dv$	Q_C		36		nC
Total capacitance	V_R = 0V, T_j = 25°C, f = 1MHz	C		475	510	pF
	V_R = 400V, T_j = 25°C, f = 1MHz			34	44	
	V_R = 800V, T_j = 25°C, f = 1MHz			33	40	

Rating and Characteristic Curves (CDBGBSC101200-G)

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

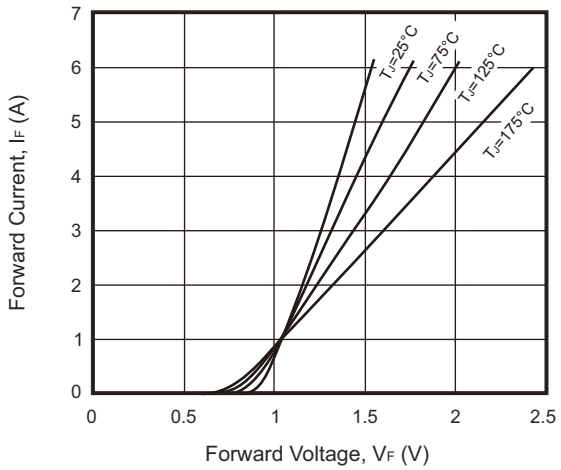


Fig.2 - Reverse IV Characteristics as a Function of T_J :

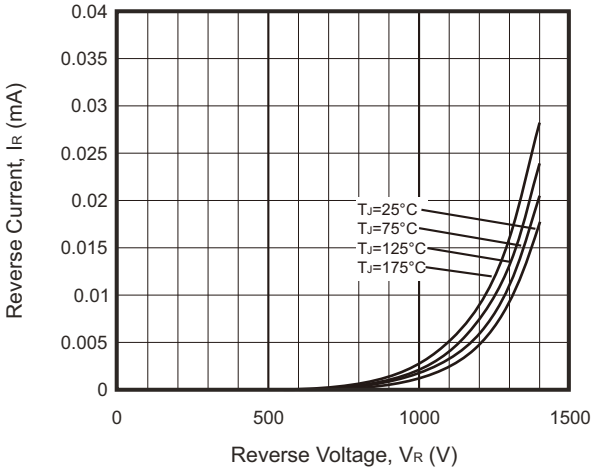


Fig.3 - Current Derating

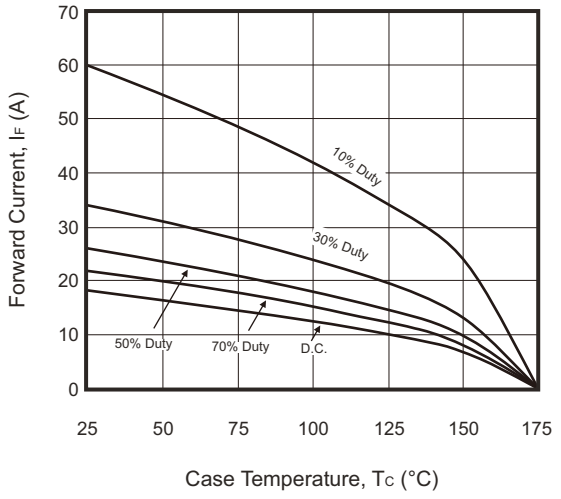
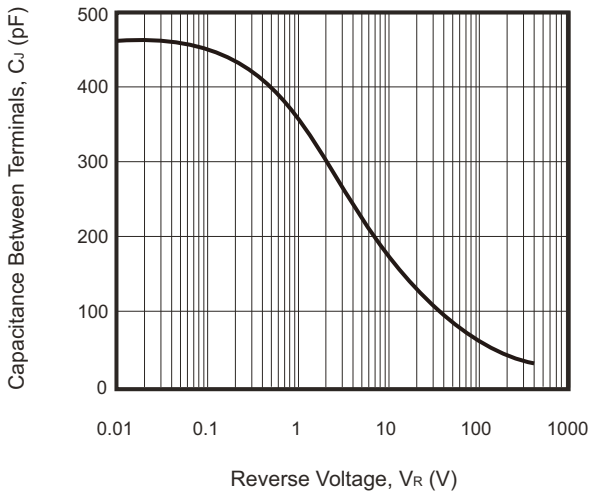


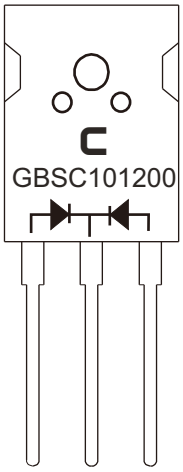
Fig.4 - Capacitance VS. Reverse Voltage



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

Marking Code

Part Number	Marking Code
CDBGBSC101200-G	GBSC101200



Standard Packaging

Case Type	TUBE PACK	
	TUBE (pcs)	BOX (pcs)
TO-247	25	500