

CBR20120WC

SiC Schottky Diode

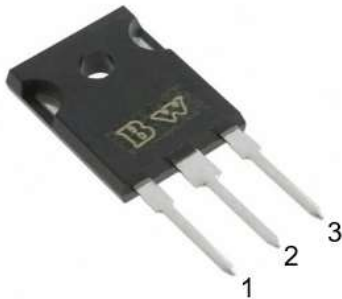
Features

- Positive temperature coefficient for safe operation and ease of paralleling
- 175°C maximum operating junction temperature
- Extremely fast switching, temperature-independent
- No reverse or forward recovery
- Enhanced surge capability
- Component in accordance to ROHS

Typical Applications

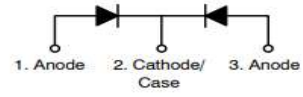
- For used in high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters, industrial motor drives, power factor correction modules

Package type : TO247-3L

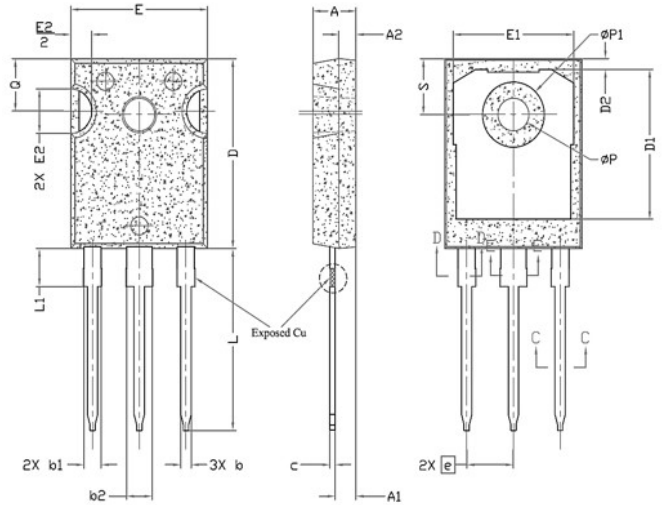


RoHS Compliant

Graphic Symbol

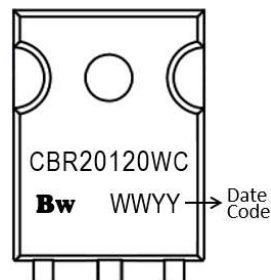


Package Dimension



REF.	Millimeter			REF.	Millimeter		
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	4.83	5.02	5.21	E	15.75	15.94	16.13
A1	2.29	2.41	2.55	E1	13.46	14.02	14.16
A2	1.50	2.00	2.49	E2	4.32	4.91	5.49
b	1.12	1.20	1.33	e	5.44 BSC		
b1	1.91	2.00	2.39	L	19.81	20.07	20.32
B2	2.87	3.00	3.22	L1	4.1	4.19	4.4
c	0.55	0.60	0.69	ØP	3.56	2.61	3.65
D	20.80	20.95	21.10	ØP1	7.19 REF.		
D1	16.25	16.55	17.65	Q	5.39	5.79	6.2
D2	0.51	1.19	1.35	S	6.04	6.17	6.3

Marking



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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (T _c =25°C unless otherwise noted)			
Symbol	Parameter	Value	Unit
V _{RRM}	Maximum repetitive reverse voltage	1200	V
I _F	Maximum average forward rectified current @ T _c =25°C	20 ¹ / 40 ²	A
	Maximum average forward rectified current @ T _c =100°C	10 ¹ / 20 ²	A
I _{FSM}	Peak forward surge current (tp=8.3ms) @ T _c =25°C	66	A
	Peak forward surge current (tp=8.3ms) @ T _c =110°C	37	A
I _{FRM}	Repetitive peak forward surge current (tp=8.3ms) @ T _c =25°C	32	A
	Repetitive peak forward surge current (tp=8.3ms) @ T _c =110°C	19	A
I _{F Max}	Non-repetitive peak forward current (tp=10μs) @ T _c =25°C	315	A
P _{tot}	Power Dissipation	176	W
T _J /T _{STG}	Operating Junction and Storage Temperature	-55 to 175	°C

Thermal Resistance Ratings			
Symbol	Parameter	Value	Unit
R _{θJC}	Maximum Junction-to-Case Thermal Resistance	1.25 ¹ / 0.7 ²	°C/W

Electrical Characteristics(T _J =25°C unless otherwise specified)					
Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
V _F	Instantaneous forward voltage	I _F =10A, T _J =25°C	1.5	1.7	V
		I _F =10A, T _J =175°C	2.2	3	
I _R	Maximum reverse current	V _R =1200V, T _J =25°C	1	100	μA
		V _R =1200V, T _J =175°C	42	300	
C	Total Capacitance	V _R =0.1V	620	-	pF
		V _R =400V	56	-	
		V _R =800V	41	-	
Q _C	Total Capacitive charge	V _R =800V, I _F =10A, di/dt=250A/μs	50	-	nC
				-	

Note:

1. Per leg
2. Per device

Typical Electrical Characteristics

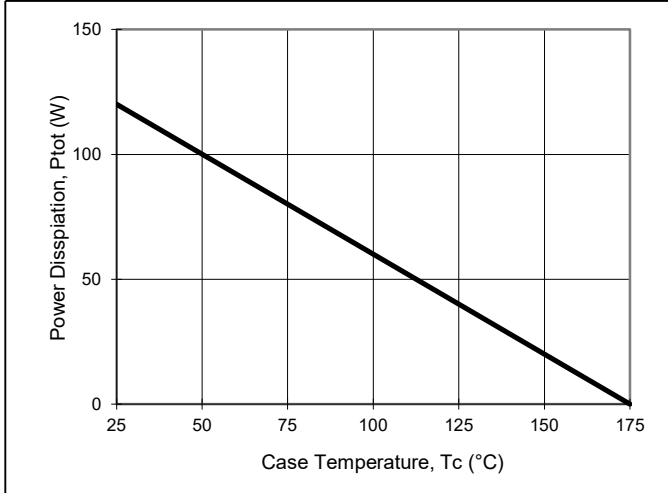


Fig1. Power Dissipation

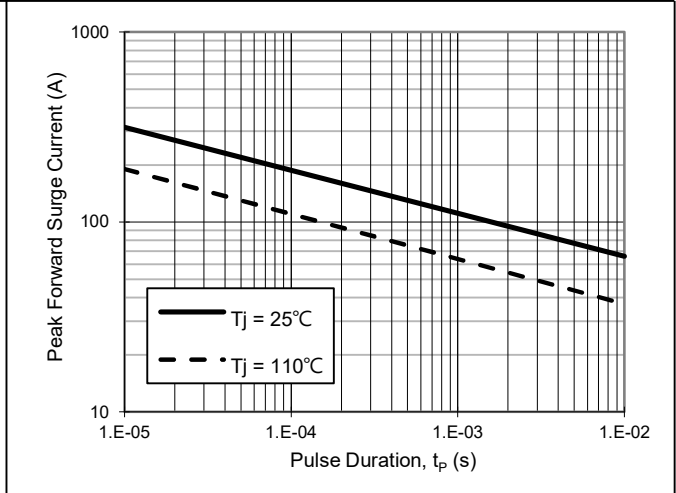


Fig2. Non-repetitive peak forward current vs. t_p

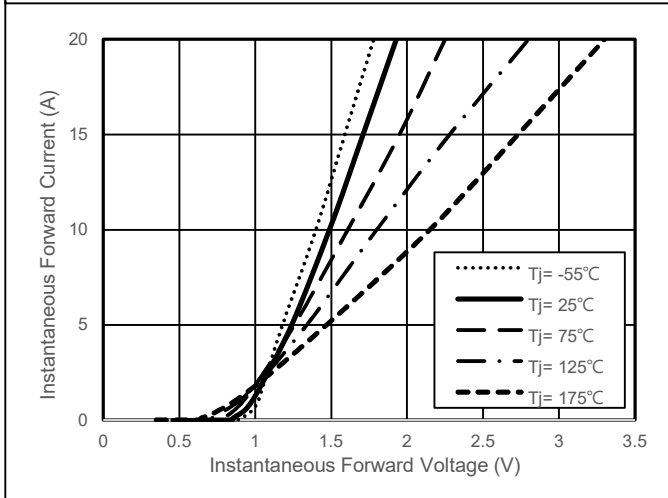


Fig3. Typical Forward Characteristics

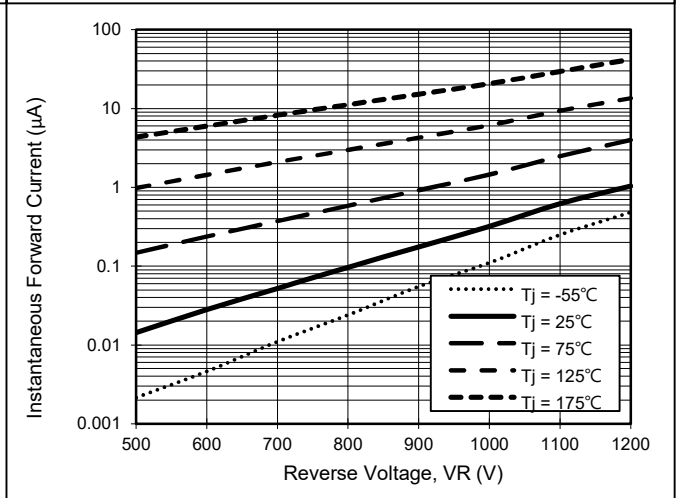


Fig4. Typical Reverse Characteristics

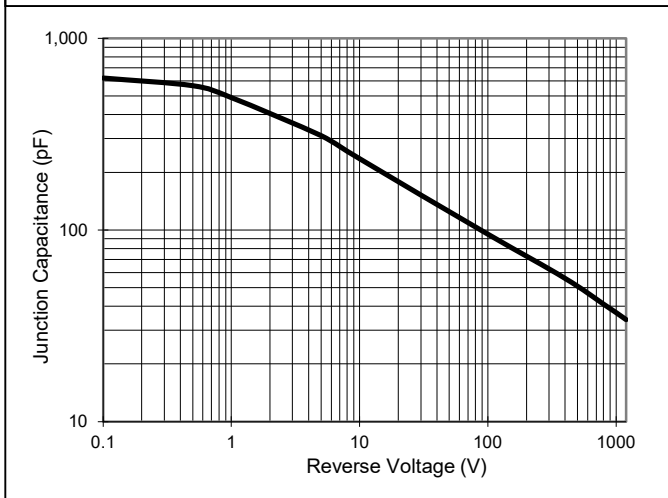


Fig5. Typical Junction Capacitance

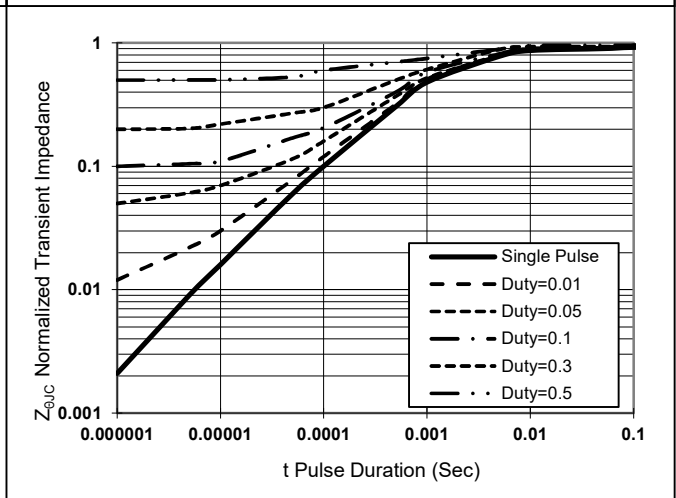


Fig6. Transient Thermal Impedance

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