

CBR10P65D

SiC Schottky Diode

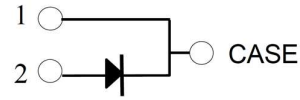
Features

- 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
- Avalanche rated 67mJ¹
- Component in accordance to ROHS
- AEC-Q101 qualification available

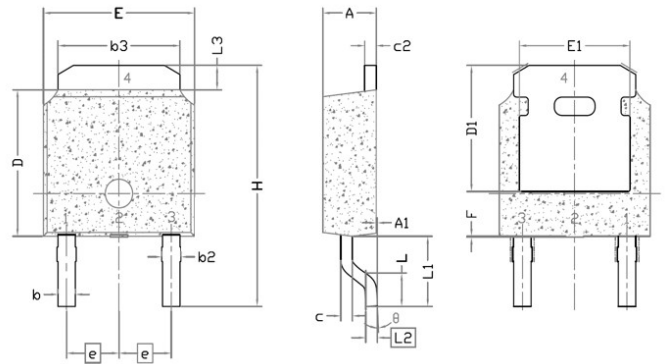
Typical Applications

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

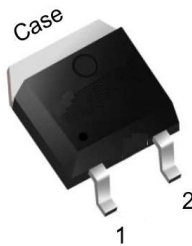
Graphic Symbol



Package Dimension

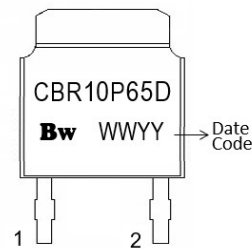


Package type : TO252-2L



REF.	Millimeter			REF.	Millimeter		
	Min.	Nom.	Max.		Min.	Nom.	Max.
E	6.4	6.6	6.731	e	2.286 BSC		
L	1.4	1.52	1.77	A	2.20	2.30	2.38
L1	2.743 Ref.			A1	0.00	--	0.127
L2	0.508 BSC			c	0.46	0.50	0.60
L3	0.89	--	1.27	c2	0.46	0.50	0.58
D	6.00	6.10	6.223	D1	5.21	--	--
H	9.40	10.00	10.40	E1	4.40	--	--
b	0.64	0.76	0.88	F	--	--	0.45
b2	0.77	0.84	1.14	b3	5.21	5.34	5.46

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	650	V
I _F	Maximum average forward rectified current @ T _c =25°C	29	A
	Maximum average forward rectified current @ T _c =150°C	10	A
I _{FSM}	Peak forward surge current (tp=8.3ms) @ T _c =25°C	80	A
	Peak forward surge current (tp=8.3ms) @ T _c =110°C	70	A
I _{FRM}	Repetitive peak forward surge current (tp=8.3ms) @ T _c =25°C	40	A
	Repetitive peak forward surge current (tp=8.3ms) @ T _c =110°C	27	A
I _{F Max}	Non-repetitive peak forward current (tp=10μs) @ T _c =25°C	575	A
P _{tot}	Power Dissipation	100	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	1.5	°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 =150°C	1.7	2.1	
		I _F =10A, T _J =175°C	1.8	2.25	
I _R	Maximum reverse current	V _R =650V, T _J =25°C	1.5	25	μA
		V _R =650V, T _J =175°C	36	250	
C	Total Capacitance	V _R =1V	419	-	pF
		V _R =200V	51	-	
		V _R =400V	43	-	
Q _C	Total Capacitive charge	V _R =400V, I _F =10A, di/dt=250A/μs	26	-	nC

NOTE:

1. Max. EAS is tested base on T_J=25°C, L=1.0mH, I_{AS}=11.58A, V=50V

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Typical Electrical Characteristics

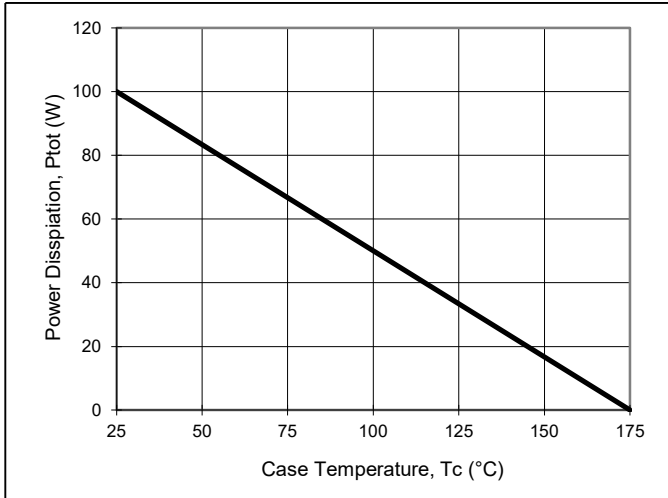


Fig1. Power Dissipation

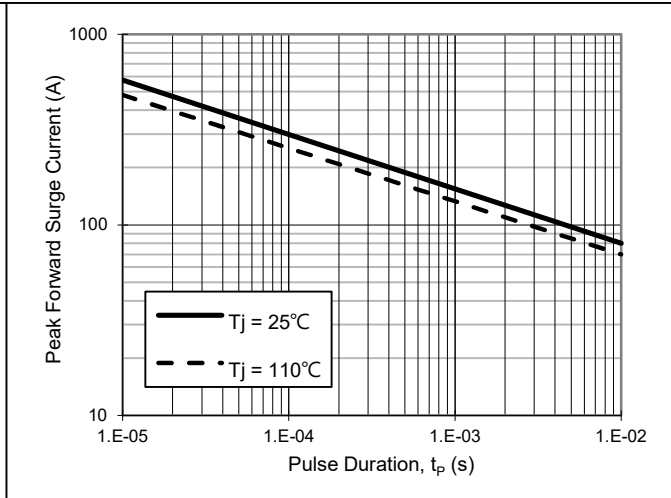


Fig2. Non-repetitive peak forward current vs. t_p

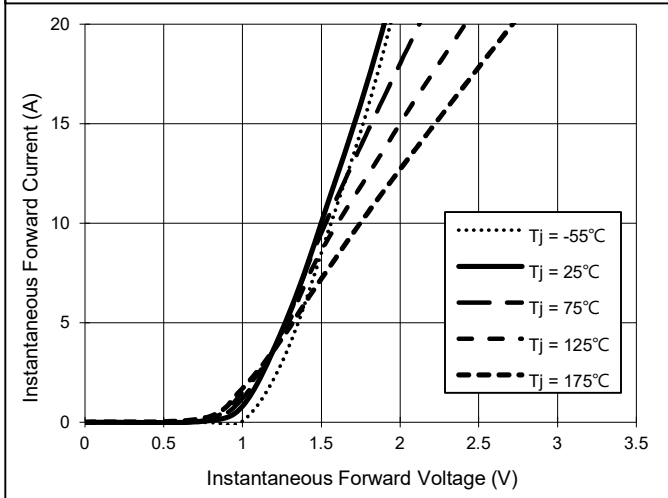


Fig3. Typical Forward Characteristics

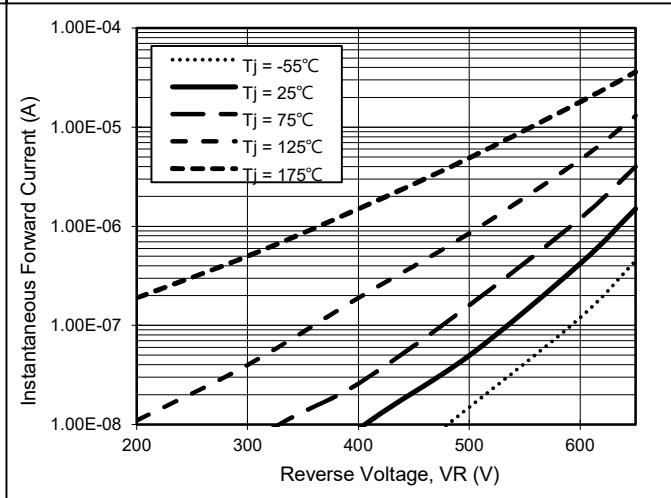


Fig4. Typical Reverse Characteristics

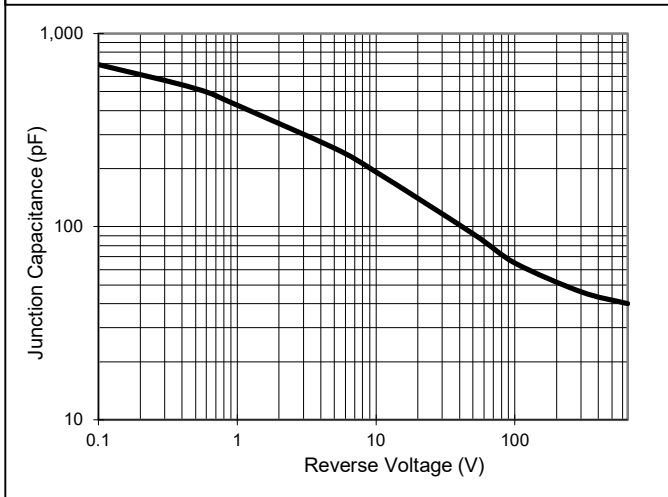


Fig5. Typical Junction Capacitance

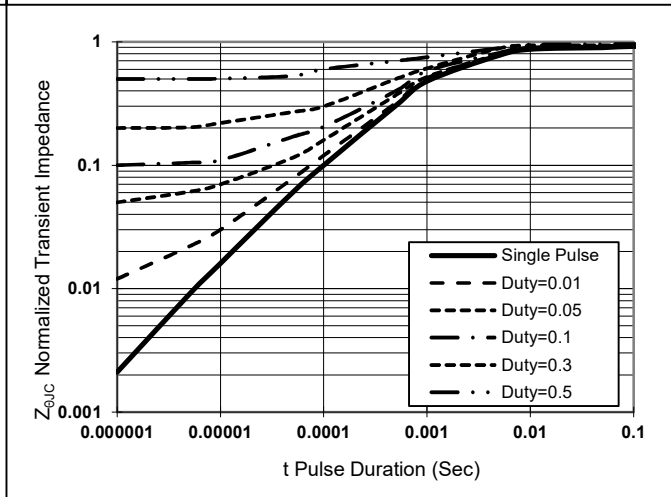


Fig6. Transient Thermal Impedance

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