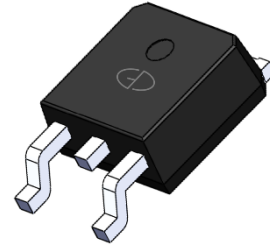


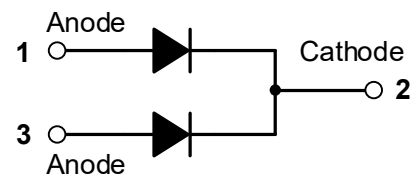
20A,45V Schottky Barrier Rectifier

Features

- Low forward voltage, low power loss
- Low leakage current
- High surge current
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-252 (D-PAK)



Applications

- SMPS
- Adapter
- Server Power

Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 2500 units per reel

Maximum Ratings & Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	MBRD2045CT	Unit
Maximum repetitive peak reverse voltage	VRRM	45	V
Maximum RMS voltage	VRMS	32	V
Maximum DC blocking voltage	VDC	45	V
Maximum average forward	IF(AV)	20	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	IFSM	150	A
Operating junction temperature range	TJ	-55 to +150	°C
Storage temperature range	TSTG	-55 to +150	°C

Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage (Note1)	V_F	$I_F=10\text{A}, T_J=25^{\circ}\text{C}$	0.58	0.60	V
		$I_F=10\text{A}, T_J=125^{\circ}\text{C}$	-	0.53	
		$I_F=20\text{A}, T_J=25^{\circ}\text{C}$	-	-	
		$I_F=20\text{A}, T_J=125^{\circ}\text{C}$	-	-	
Reverse leakage current @VR (Note2)	I_R	$T_J=25^{\circ}\text{C}$	-	200	μA
		$T_J=100^{\circ}\text{C}$	-	15	mA

Thermal-Mechanical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4.0	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C}/\text{W}$

Note:

1. Pulse test with $PW=0.3\text{ms}$, duty cycle=2%
2. Pulse test with $PW=30\text{ms}$

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

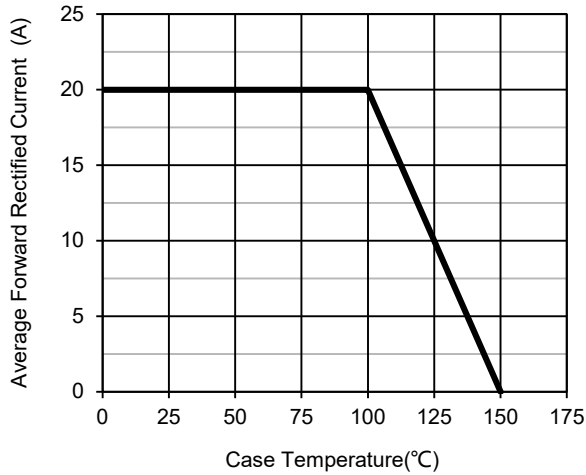


Fig.1 – Forward Current Derating Curve

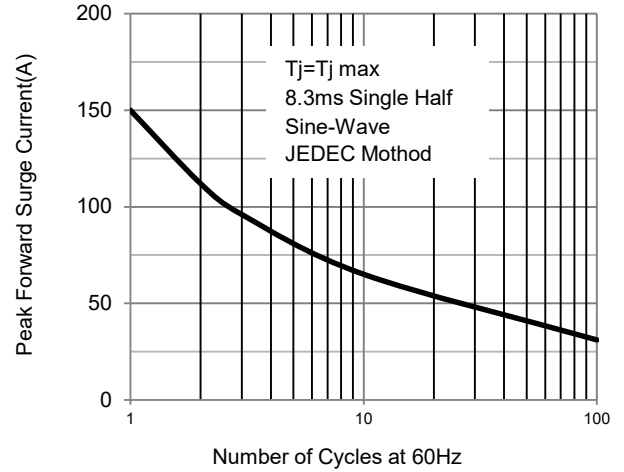


Fig.2 – Maximum Non-Repetitive Surge Current

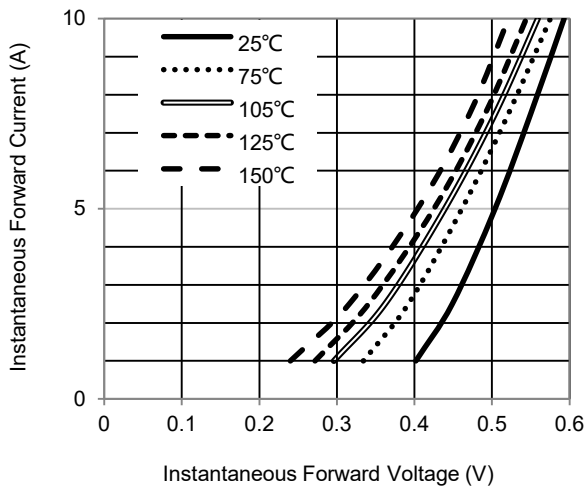


Fig.3 – Typical Forward Voltage Characteristics

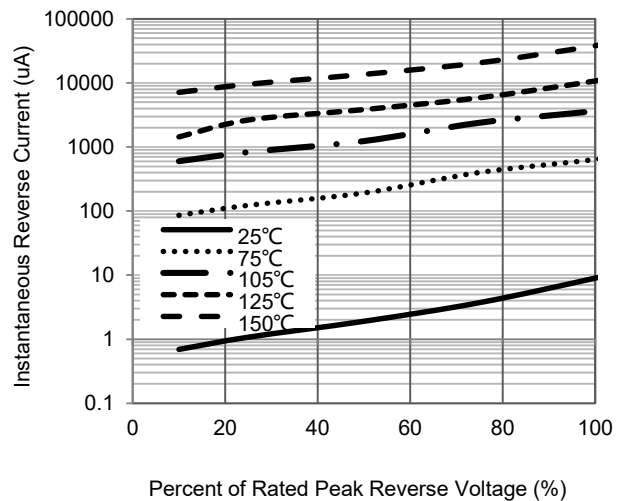


Fig.4 – Typical Reverse Current Characteristics

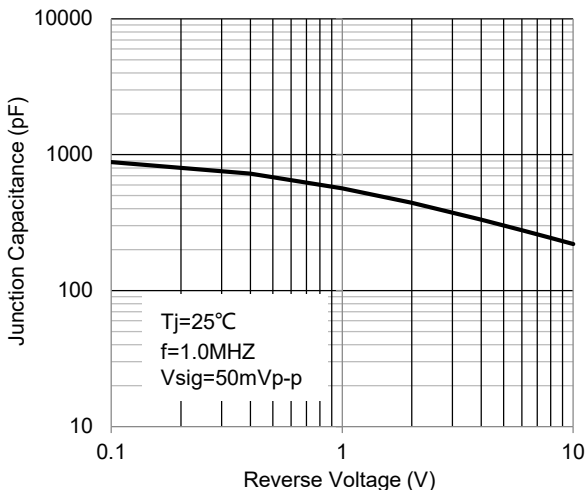
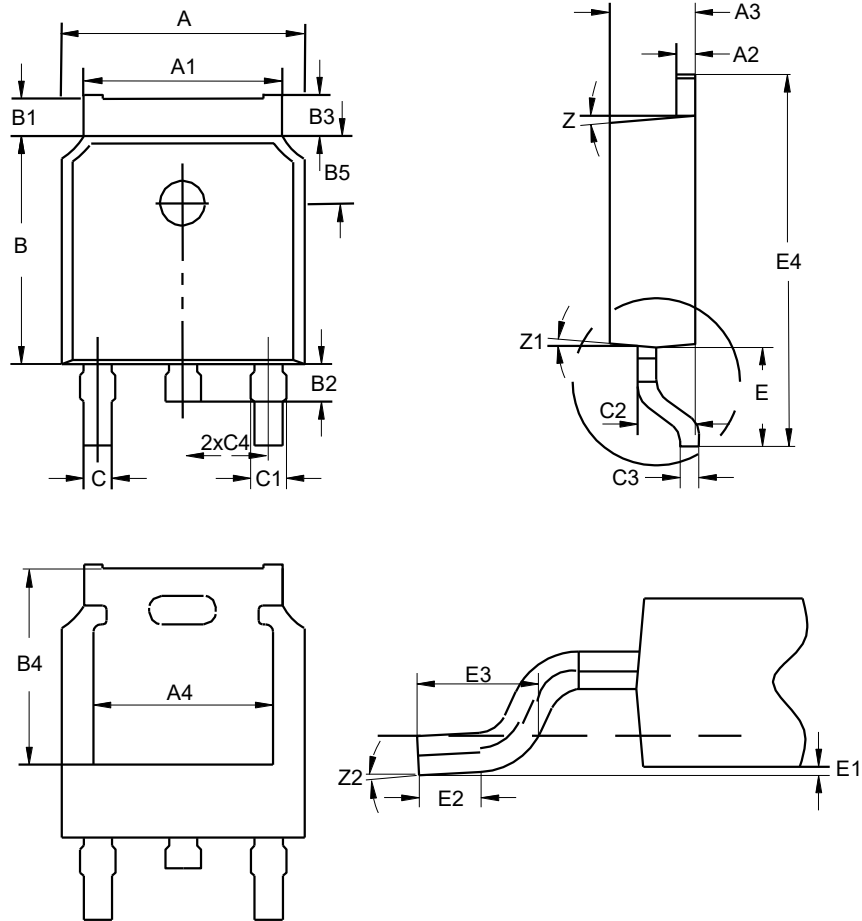


Fig.5 – Typical Junction Capacitance

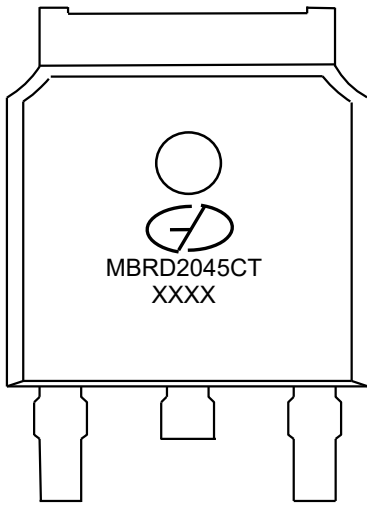
Package Outline Dimensions (Unit: millimeters)


TO-252 (D-PAK)



TO-252							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	6.34	6.54	6.74	C1	0.65	0.85	1.05
A1	5.1	5.3	5.5	C2	1.34	1.54	1.74
A2	0.4	0.5	0.6	C3	0.4	0.5	0.6
A3	2.08	2.28	2.48	C4	2.09	2.29	2.49
A4	4.6	4.8	5.0	E	2.6	2.9	3.2
B	5.8	6.1	6.4	E1	0		0.15
B1	0.82	1.02	1.22	E2	0.7		
B2	0.8	1	1.2	E3	1.3	1.6	1.9
B3	0.9	1.1	1.3	E4	9.8	10.1	10.4
B4	5.05	5.25	5.45	Z		7°	
B5	7.83	8.03	8.23	Z1		7°	
C	0.56	0.76	0.96	Z2	0°		10°

Marking Outline



1. Logo Mark: 
2. Part Name: MBRD2045CT
3. Date code: XXXX

Revision History

Document Version	Date of release	Description of changes
Rev.A	2013.12.18	Released Datasheet
Rev.B	2021.01.22	Modify document format
Rev.C	2022.04.29	Modify ratings and characteristics curves

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