MBR20H200CT, MBRF20H200CT, SB20H200CT-1

Dual Common Cathode High Voltage Schottky Rectifier

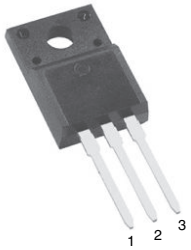
Low Leakage Current 5.0 µA

TO-220AB



MBR20H200CT

ITO-220AB



MBRF20H200CT

TO-262AA



SB20H200CT-1



FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High frequency operation
- Solder dip 275 °C max., 10 s per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency inverters, freewheeling, and polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, and TO-262AA
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
V_{RRM}	200 V
I_{FSM}	290 A
V_F	0.75 V
T_J max.	175 °C
Package	TO-220AB, ITO-220AB, TO-262AA
Diode variations	Common cathode

MAXIMUM RATINGS (T_C = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	200	V
Working peak reverse voltage		V_{RWM}	200	V
Maximum DC blocking voltage		V_{DC}	200	V
Maximum average forward rectified current	total device	$I_{F(AV)}$	20	A
	per diode		10	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	290	A
Peak repetitive reverse current per diode at t_p = 2 µs, 1 kHz		I_{RRM}	1.0	A
Peak non-repetitive reverse surge energy per diode (8/20 µs waveform)		E_{RSM}	20	mJ
Non-repetitive avalanche energy per diode at 25 °C, I_{AS} = 2.0 A, L = 10 mH		E_{AS}	20	mJ
Electrostatic discharge capacitor voltage human body model air discharge: C = 100 pF, R = 1.5 kΩ		V_C	25	kV
Voltage rate of change (rated V_R)		dV/dt	10 000	V/µs
Operating junction and storage temperature range		T_J, T_{STG}	- 65 to + 175	°C
Isolation voltage (ITO-220AB only) from terminals to heatsink t = 1 min		V_{AC}	1500	V

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ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage per diode	I_F = 10 A	T_C = 25 °C	V_F (1)	0.81	0.88	V
	I_F = 10 A	T_C = 125 °C		0.65	0.75	
	I_F = 20 A	T_C = 25 °C		0.87	0.97	
	I_F = 20 A	T_C = 125 °C		0.74	0.85	
Maximum reverse current per diode at working peak reverse voltage		T_J = 25 °C	I_R (1)	5.0		μA
		T_J = 125 °C		1.0		mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	250		pF

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)					
PARAMETER	**SYMBOL**	**MBR**	**MBRF**	**SB**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	2.0	4.0	2.0	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	MBR20H200CT-E3/45	2.06	45	50/tube	Tube
ITO-220AB	MBRF20H200CT-E3/45	2.20	45	50/tube	Tube
TO-262AA	SB20H200CT-1E3/45	1.58	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

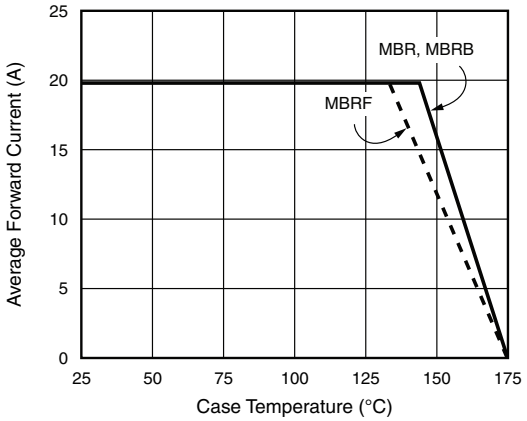


Fig. 1 - Forward Derating Curve (Total)

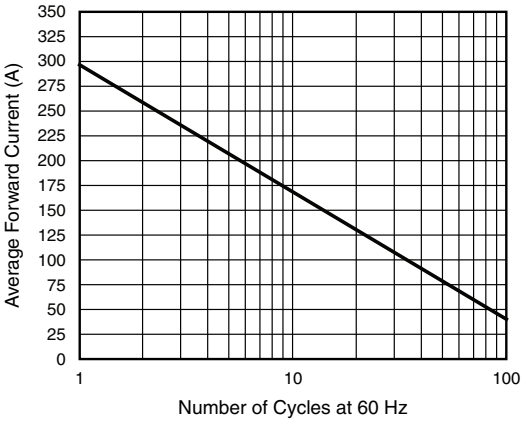


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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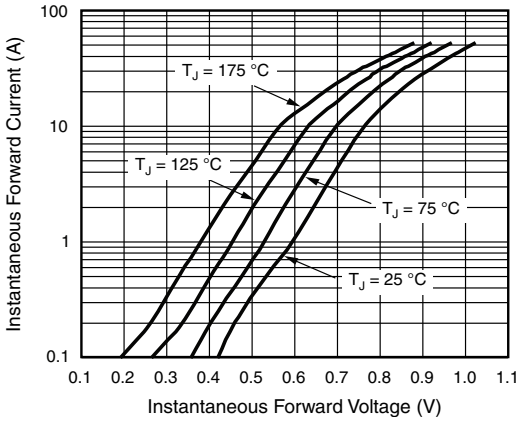


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

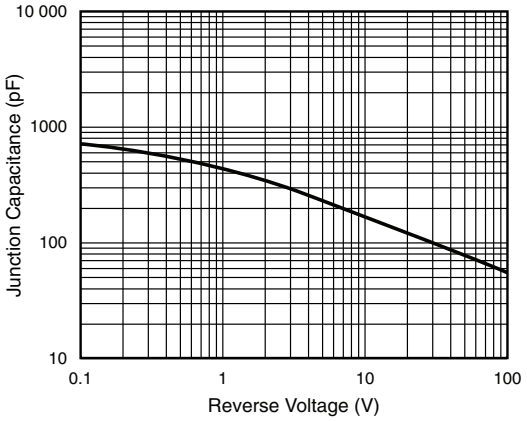


Fig. 5 - Typical Junction Capacitance Per Diode

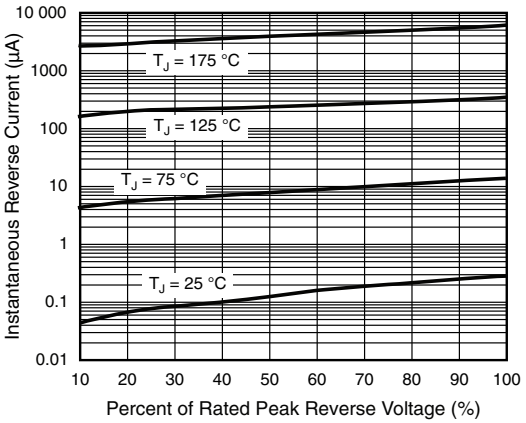


Fig. 4 - Typical Reverse Characteristics Per Diode

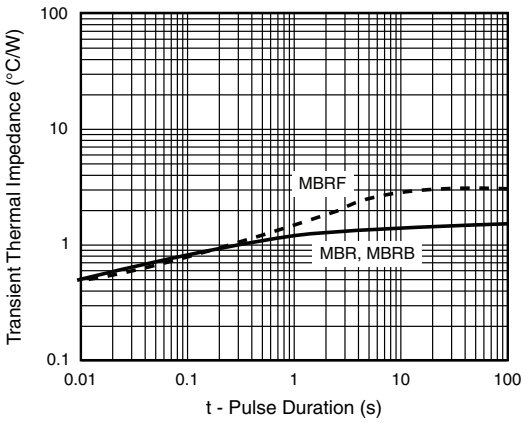
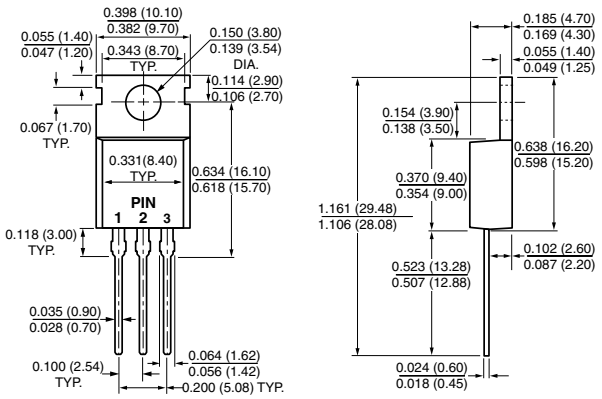


Fig. 6 - Typical Transient Thermal Impedance Per Diode

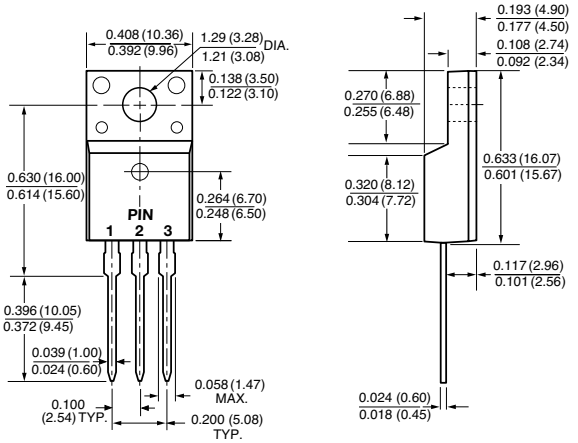
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

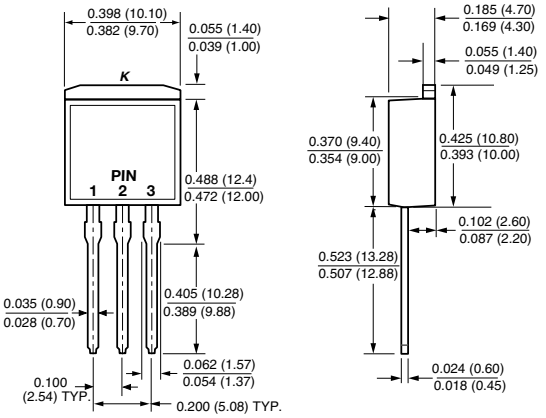
TO-220AB



ITO-220AB



TO-262AA



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