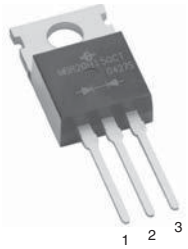
MBR10H150CT, MBRF10H150CT, SB10H150CT-1

Dual Common-Cathode High-Voltage Schottky Rectifier

Low Leakage Current 5.0 µA

TO-220AB



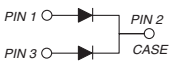
MBR10H150CT

ITO-220AB

MBRF10H150CT

TO-262AA

SB10H150CT-1



FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- 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, TO-262AA

Molding compound meets UL 94V-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 5 A
V_{RRM}	150 V
I_{FSM}	160 A
V_F	0.72 V
T_J max.	175 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	MBR10H150CT	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	150	V
Working peak reverse voltage		V_{RWM}	150	V
Maximum DC blocking voltage		V_{DC}	150	V
Maximum average forward rectified current (Fig.1)	total device	$I_{F(AV)}$	10	A
	per diode		5	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	160	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 waveform)		E_{RSM}	10	mJ
Non-repetitve avalanche energy per diode at 25 °C, I_{AS} = 1.5 A, L = 10 mH		E_{AS}	11.25	mJ
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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage per diode	V_F (1)	I_F = 5 A	T_J = 25 °C	0.88	-	V
		I_F = 5 A	T_J = 125 °C	0.72	-	
		I_F = 10 A	T_J = 25 °C	0.96	-	
		I_F = 10 A	T_J = 125 °C	0.80	-	
Maximum reverse current per diode at working peak reverse voltage	I_R (2)		T_J = 25 °C	5.0	-	µA
			T_J = 125 °C	1.0	-	mA

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)					
PARAMETER	**SYMBOL**	**MBR**	**MBRF**	**MBRB**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	2.4	4.5	2.4	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	MBR10H150CT-E3/45	2.06	45	50/tube	Tube
ITO-220AB	MBRF10H150CT-E3/45	2.20	45	50/tube	Tube
TO-262AA	SB10H150CT-E3/45	1.58	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

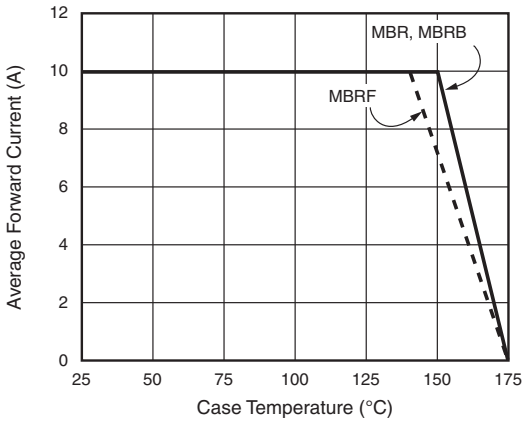


Fig. 1 - Forward Derating Curve (Total)

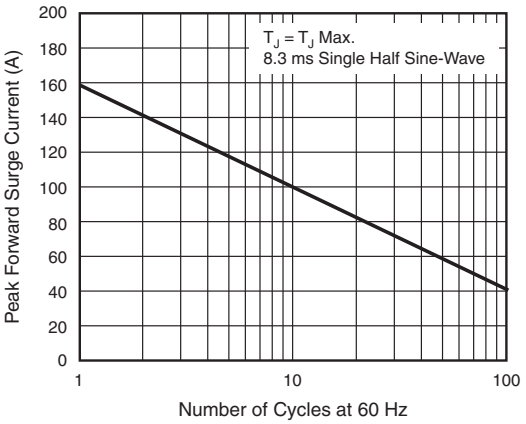


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

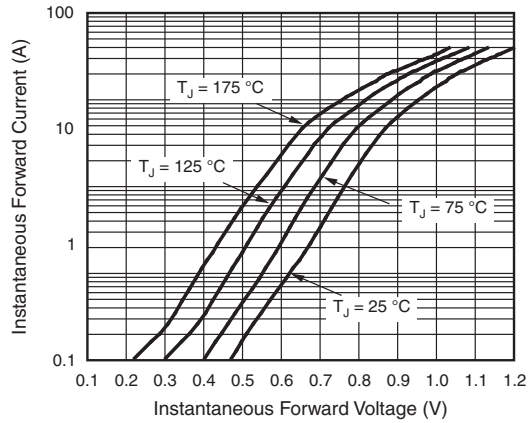


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

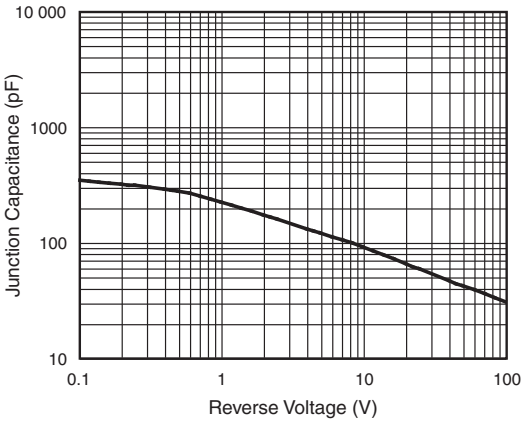


Fig. 5 - Typical Junction Capacitance Per Diode

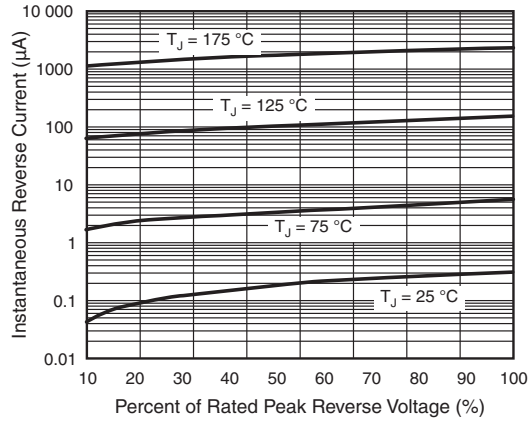


Fig. 4 - Typical Reverse Characteristics Per Diode

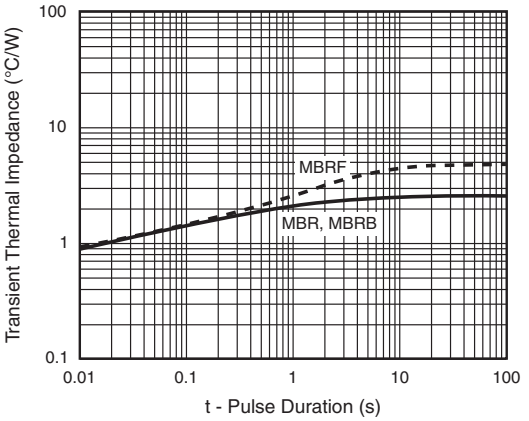
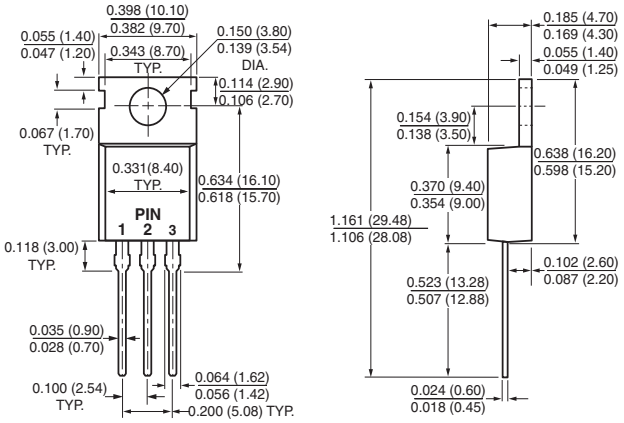


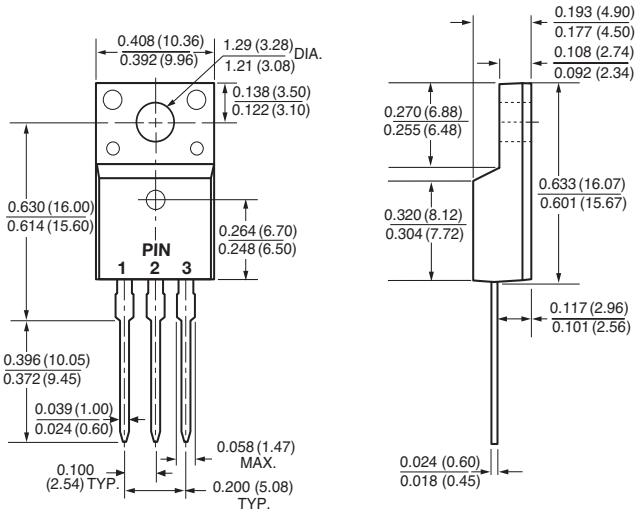
Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

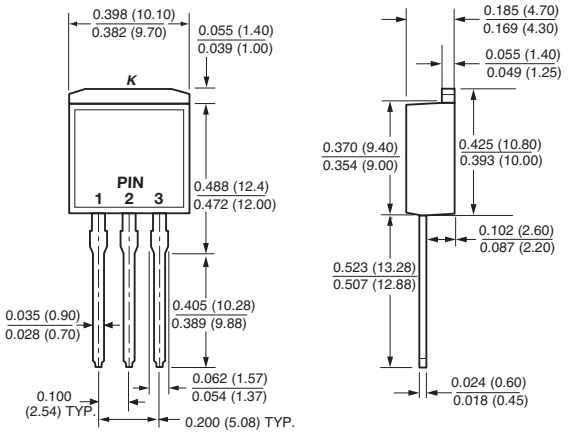
TO-220AB



ITO-220AB



TO-262AA



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