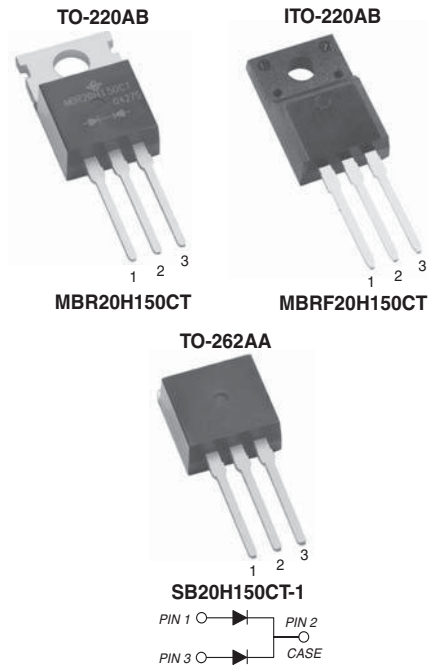




**THE DATASHEET OF
MBRF20H150CT-E3/45**



Dual Common-Cathode High-Voltage Schottky Rectifier

 Low Leakage Current 5.0 μ A


FEATURES

- 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
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

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 and 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}	150 V
I_{FSM}	200 A
V_F	0.75 V
T_J max.	175 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MBR20H150CT	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	$I_{F(AV)}$	per device 20	A
		per diode 10	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	200	A
Peak repetitive reverse current per diode at $t_p = 2$ μ s, 1 kHz	I_{RRM}	1.0	A
Peak non-repetitive reverse surge energy per diode (8/20 μ s waveform)	E_{RSM}	10	mJ
Non-repetitive 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_F)	dV/dt	10 000	V/ μ s
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	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage per diode	I _F = 10 A	T _C = 25 °C	V _F ⁽¹⁾	0.90	V
	I _F = 10 A	T _C = 125 °C		0.75	
	I _F = 20 A	T _C = 25 °C		0.99	
	I _F = 20 A	T _C = 125 °C		0.86	
Maximum reverse current per diode at working peak reverse voltage			I _R ⁽¹⁾	5.0	μA
				1.0	mA

Notes

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT
Typical thermal resistance per diode	R _{θJC}	2.2	4.2	2.2	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR20H150CT-E3/45	2.06	45	50/tube	Tube
ITO-220AB	MBRF20H150CT-E3/45	2.20	45	50/tube	Tube
TO-262AA	SB20H150CT-1E3/45	1.58	45	50/tube	Tube

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

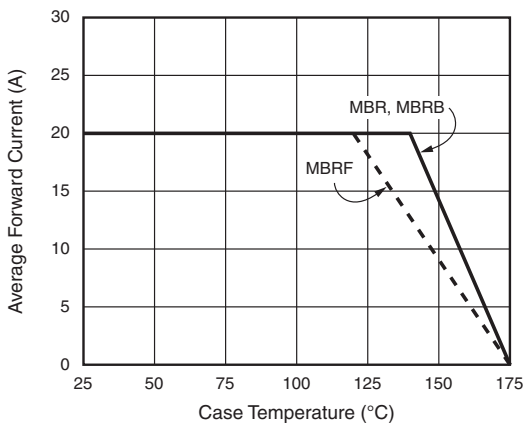


Fig. 1 - Forward Derating Curve (Total)

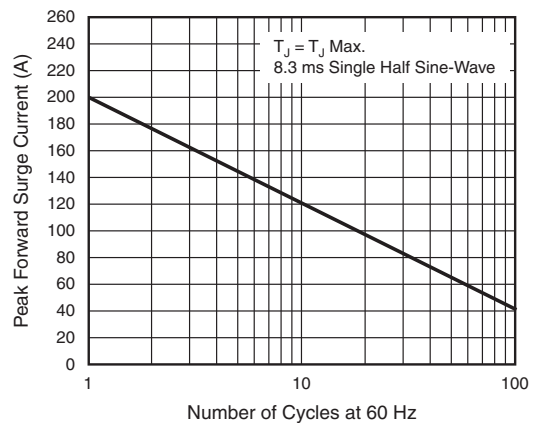


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

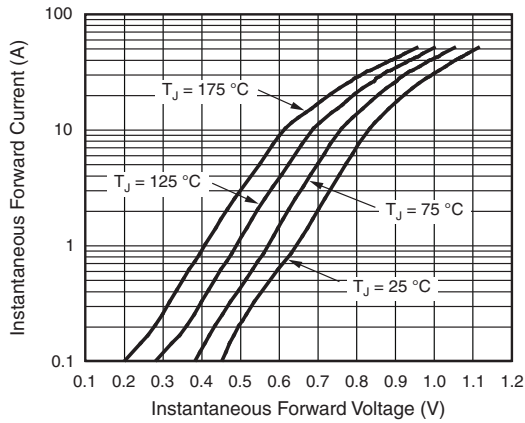


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

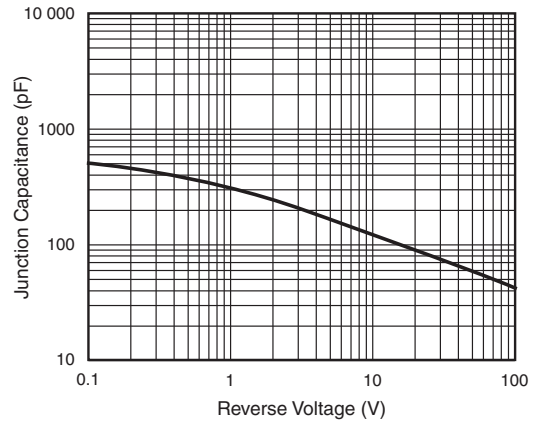


Fig. 5 - Typical Junction Capacitance Per Diode

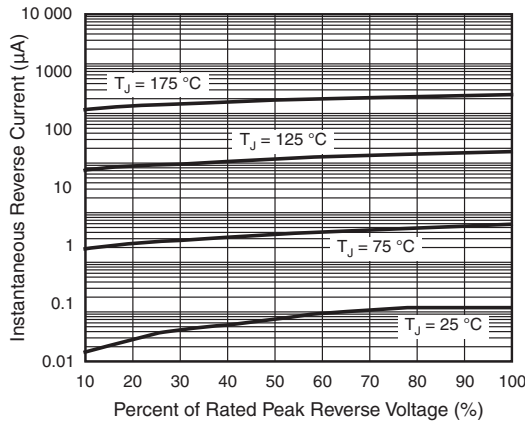


Fig. 4 - Typical Reverse Characteristics Per Diode

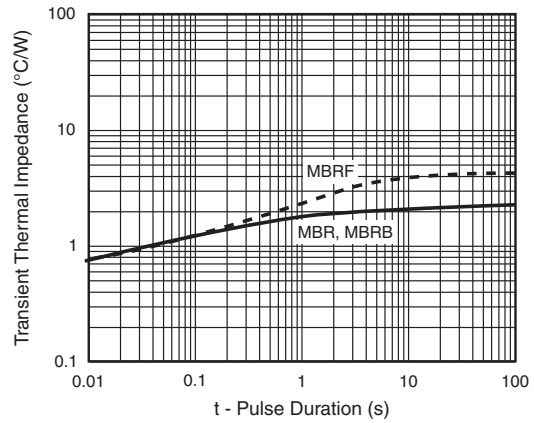
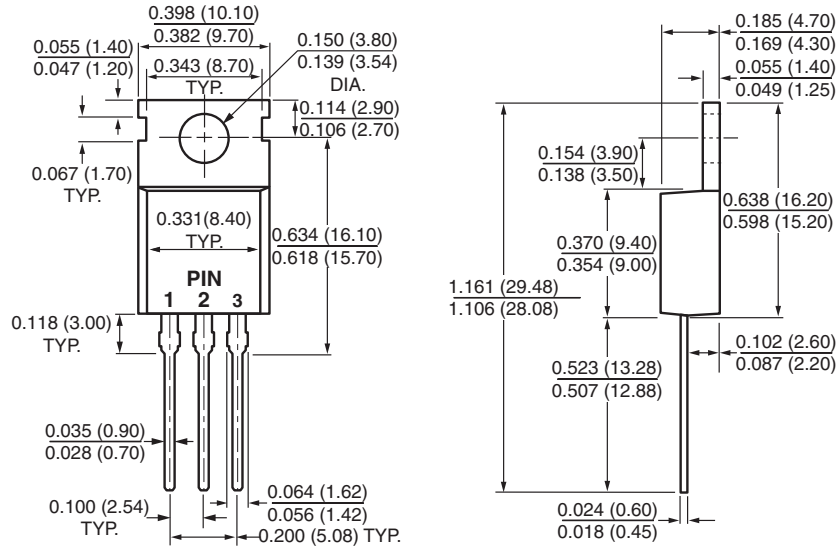


Fig. 6 - Typical Transient Thermal Impedance Per Diode

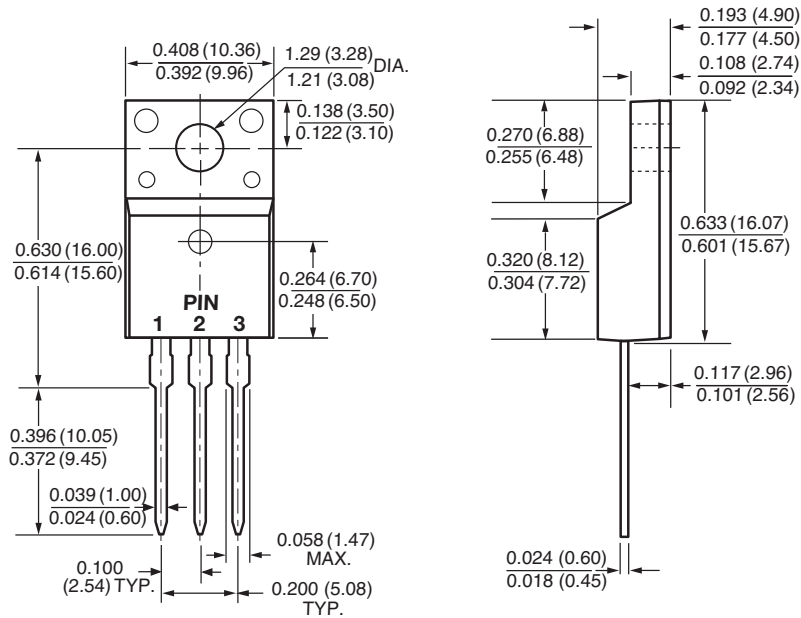


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

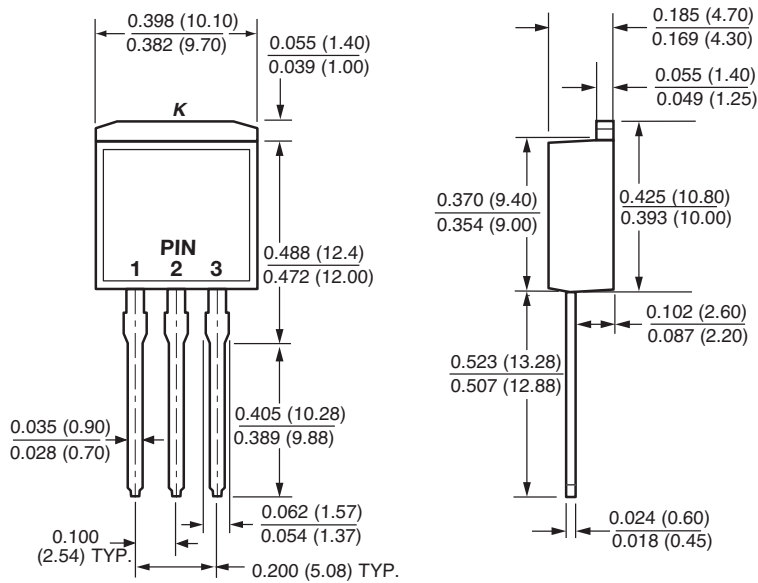
TO-220AB



ITO-220AB



TO-262AA





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