

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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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, TO-262AA

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Mounting Torque: 10 in-lbs maximum

Polarity: As marked

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
V_{RRM}	150 V
I_{FSM}	260 A
V_F	0.75 V
T_J	175 °C

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

PARAMETER	SYMBOL	MBR30H150CT	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 total device per diode	$I_{F(AV)}$	30 15	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	260	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, $I_{AS} = 2.0$ A, $L = 10$ mH	E_{AS}	20	mJ
Voltage rate of change (rated V_R)	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

MBR30H150CT, MBRF30H150CT & SB30H150CT-1

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	I _F = 15 A	T _C = 25 °C	V _F	0.90	V
	I _F = 15 A	T _C = 125 °C		0.75	
	I _F = 30 A	T _C = 25 °C		0.99	
	I _F = 30 A	T _C = 125 °C		0.86	
Maximum reverse current per diode at working peak reverse voltage ⁽¹⁾			I _R	5.0	μA
				1.0	mA

Note:

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

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	1.7	4.0	1.7	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR30H150CT-E3/45	2.06	45	50/tube	Tube
ITO-220AB	MBRF30H150CT-E3/45	2.20	45	50/tube	Tube
TO-262AA	SB30H150CT-1E3/45	1.58	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

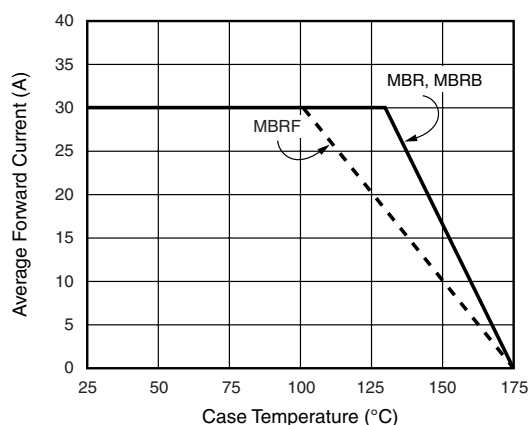


Figure 1. Forward Derating Curve (Total)

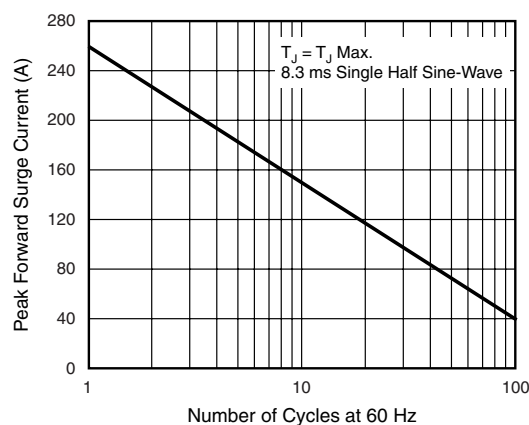


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

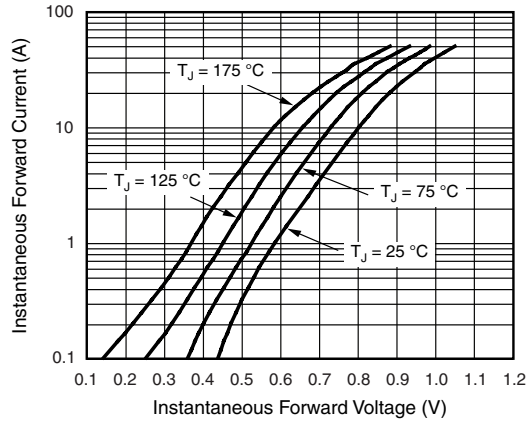


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

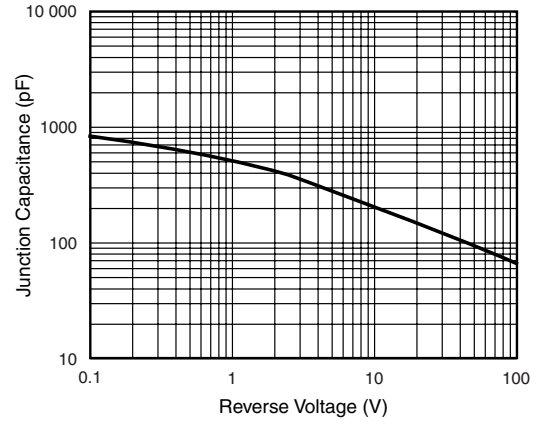


Figure 5. Typical Junction Capacitance Per Diode

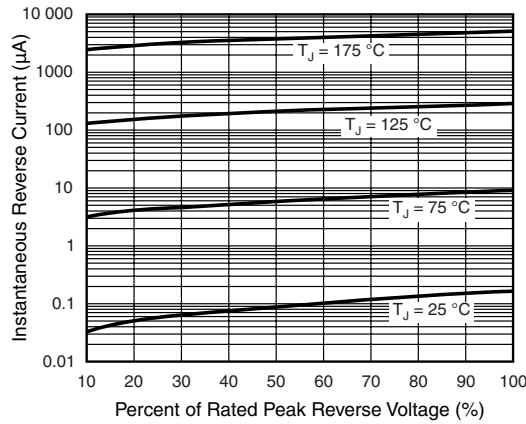


Figure 4. Typical Reverse Characteristics Per Diode

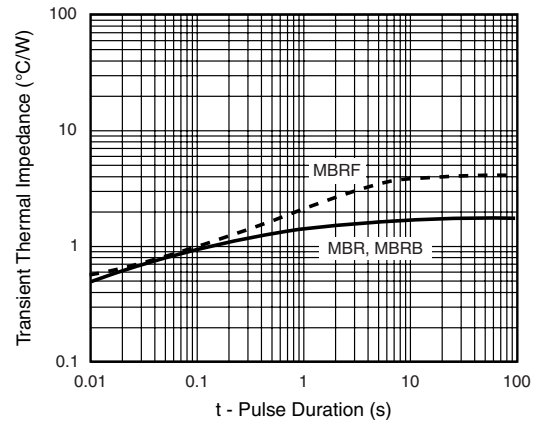


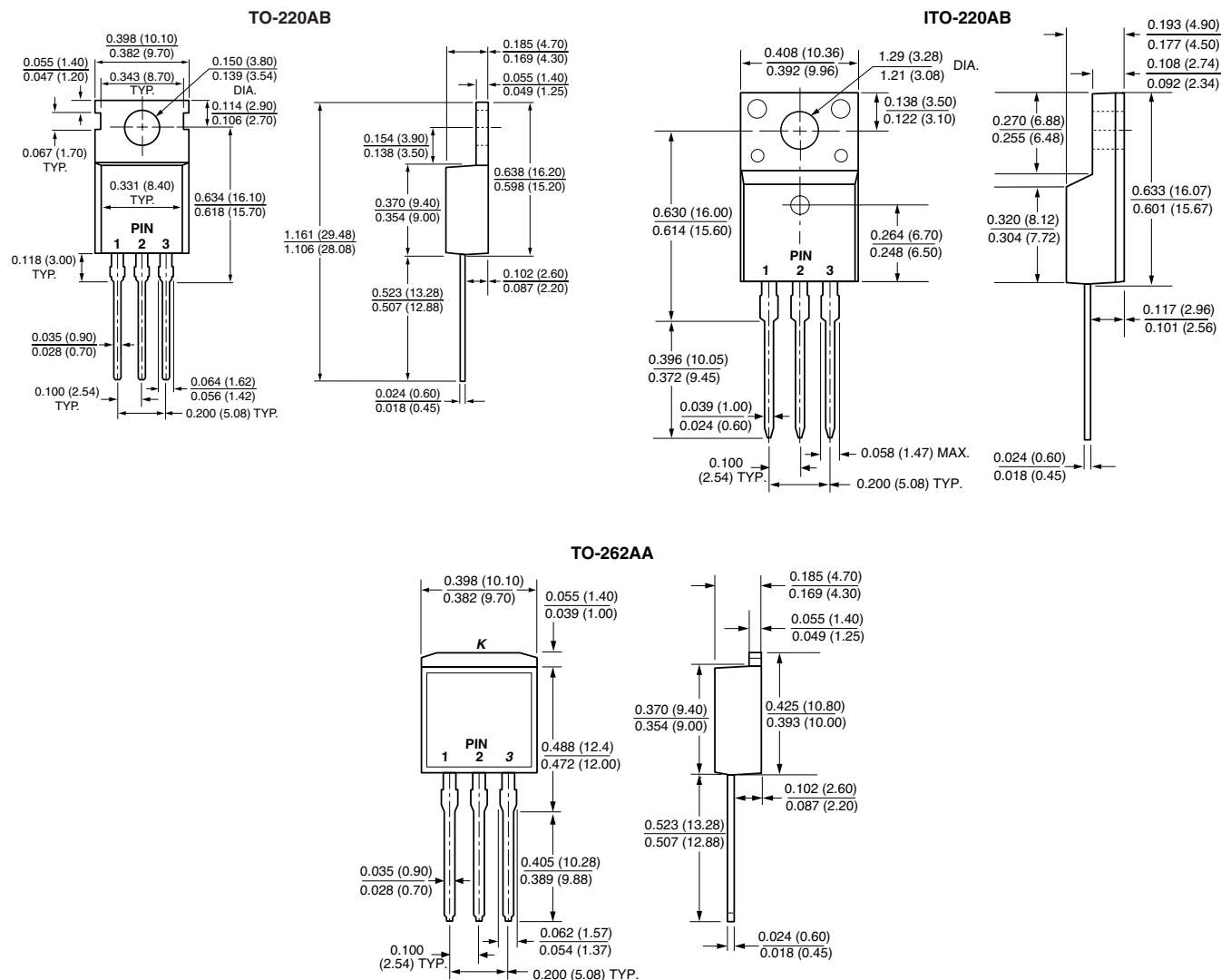
Figure 6. Typical Transient Thermal Impedance Per Diode

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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