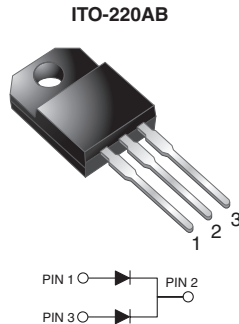


## Dual Common-Cathode High-Voltage Schottky Rectifier



### FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- 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 rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

### MECHANICAL DATA

**Case:** ITO-220AB

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

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	5.0 A x 2
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	120 A
$V_F$	0.75 V
$T_J$ max.	150 °C

MAXIMUM RATINGS ( $T_C = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	90	100	V
Working peak reverse voltage	$V_{RWM}$	90	100	V
Maximum DC blocking voltage	$V_{DC}$	90	100	V
Maximum average forward rectified current at $T_C = 105\text{ °C}$ total device per diode	$I_{F(AV)}$	10 5.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	120		A
Peak repetitive reverse current per diode at $t_p = 2\text{ }\mu\text{s}$ , 1 kHz	$I_{RRM}$	0.5		A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/ $\mu\text{s}$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 150		°C
Isolation voltage from terminal to heatsink with $t = 1\text{ min}$	$V_{AC}$	1500		V

ELECTRICAL CHARACTERISTICS ( $T_C = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 5.0\text{ A}$	$T_C = 125\text{ °C}$	$V_F$	0.75		V
	$I_F = 5.0\text{ A}$	$T_C = 25\text{ °C}$		0.85		
Maximum reverse current per diode at working peak reverse voltage <sup>(1)</sup>		$T_J = 25\text{ °C}$ $T_J = 100\text{ °C}$	$I_R$	100		$\mu\text{A}$ mA
				6.0		

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	6.8		$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	MBRF10100CT-E3/45	1.99	45	50/tube	Tube

## RATINGS AND CHARACTERISTICS CURVES

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

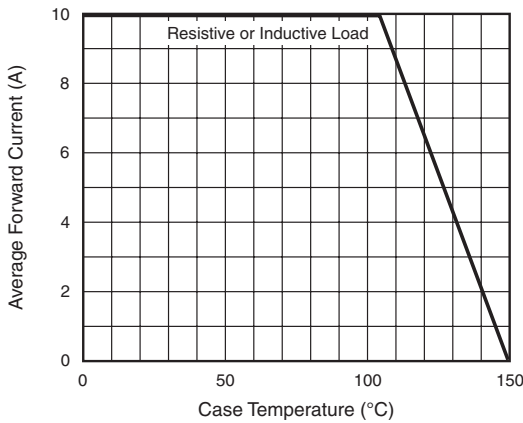


Figure 1. Forward Current Derating Curve

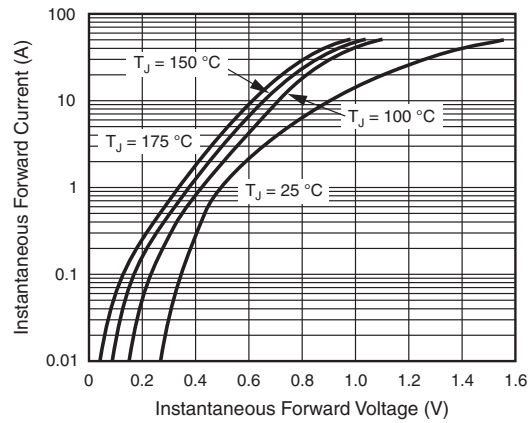


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

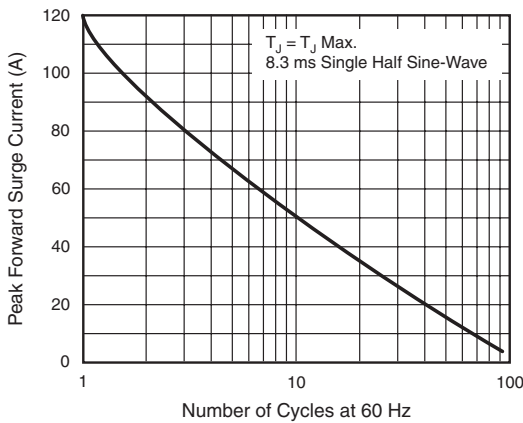


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

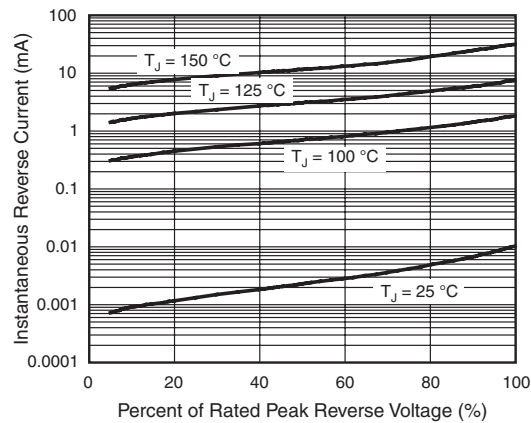


Figure 4. Typical Reverse Characteristics Per Diode

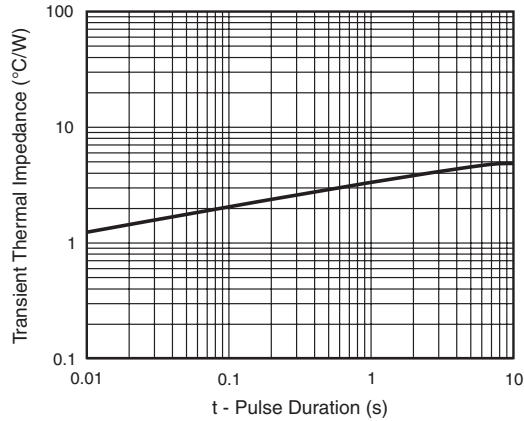


Figure 5. Typical Transient Thermal Impedance Per Diode

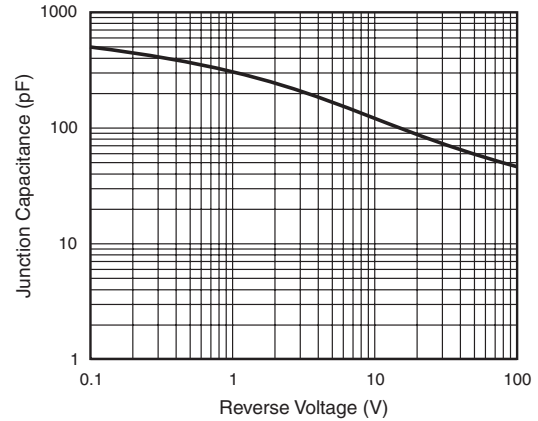
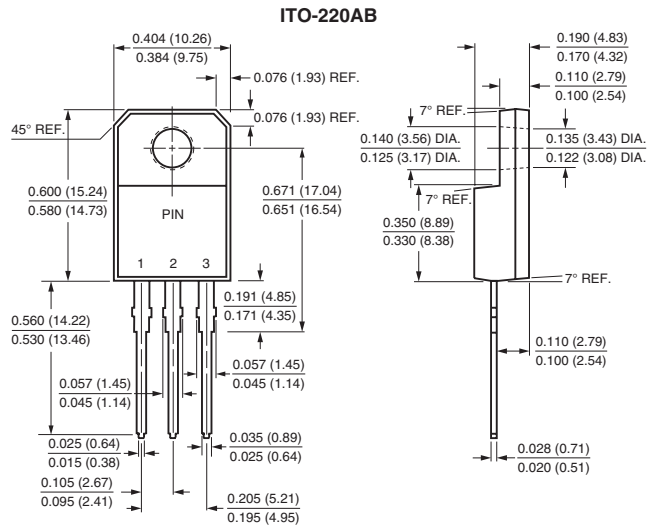


Figure 6. Typical Junction Capacitance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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