



# MBR1090CT thru MBR10100CT

Dual High-Voltage Schottky Barrier Rectifiers  
Reverse Voltage 90 to 100 Volts Forward Current 10.0 Amperes

## Features

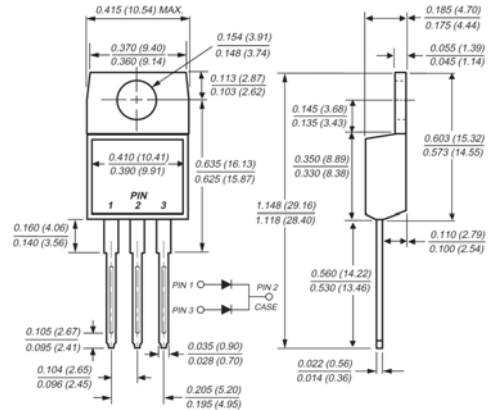
- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Dual rectifier construction, positive center tap
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Guardring for overvoltage protection
- ◆ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

## Mechanical Data

- ◆ Case: JEDEC TO-220AB molded plastic body over passivated chips
- ◆ Terminals: Plated leads, solderable per MIL-STD-750, Method 2026
- ◆ High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case
- ◆ Polarity: As marked
- ◆ Mounting Position: Any
- ◆ Mounting Torque: 10 in-lbs maximum
- ◆ Weight: 0.08 ounce, 2.24 grams



## TO-220AB



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

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

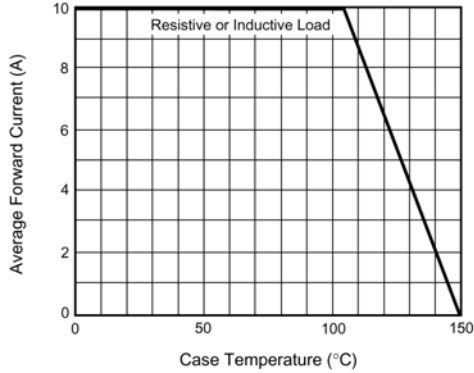
Parameter	Symbol	MBR1090CT	MBR10100CT	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	90	100	Volts
Working peak reverse voltage	$V_{RWM}$	90	100	Volts
Maximum DC blocking voltage	$V_{DC}$	90	100	Volts
Maximum average forward rectified current (See Fig. 1)	Total device Per leg $I_{F(AV)}$	10 5.0	10 5.0	Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	$I_{FSM}$		120	Amps
Peak repetitive reverse current per leg at $t_p = 2.0\mu\text{s}$ , 1KHz	$I_{RRM}$		0.5	Amps
Voltage rate of change (rated $V_R$ )	$dv/dt$		10,000	V/ $\mu\text{s}$
Maximum instantaneous forward voltage per leg (Note 4)	$V_F$	at $I_F=5.0\text{A}$ , $T_c=25^\circ\text{C}$	0.85	Volts
		at $I_F=5.0\text{A}$ , $T_c=125^\circ\text{C}$	0.75	
Maximum reverse current per leg at working peak reverse voltage (Note 4)	$I_R$	$T_j=25^\circ\text{C}$	100	$\mu\text{A}$
		$T_j=100^\circ\text{C}$	6.0	$\text{mA}$
Typical thermal resistance per leg	$R_{\theta JC}$		4.4	$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_j$		-55 to +150	$^\circ\text{C}$
Storage temperature range	$T_{STG}$		-55 to +150	$^\circ\text{C}$

- Notes:**
1. Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
  2. Clip mounting (on case), where leads do overlap heatsink
  3. Screw mounting with 4-40 screw, where washer diameter is < 4.9 mm (0.19")
  4. Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

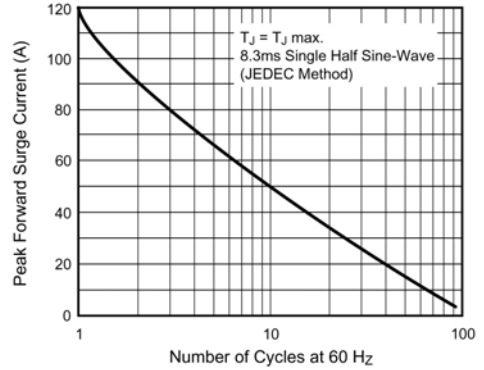
## RATINGS AND CHARACTERISTIC CURVES

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

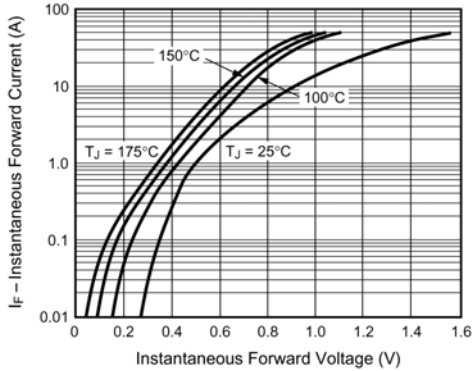
**Fig. 1 – Forward Current Derating Curve**



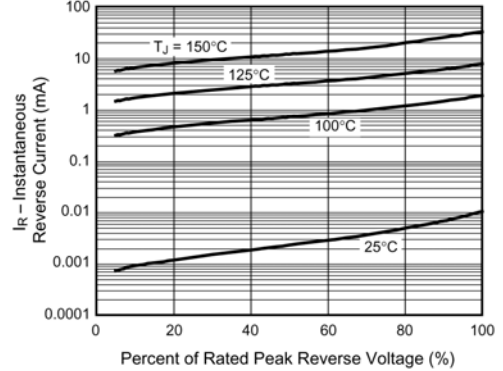
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



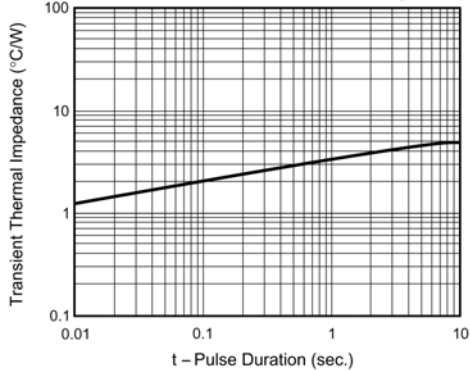
**Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg**



**Fig. 4 – Typical Reverse Characteristics Per Leg**



**Fig. 5 – Typical Transient Thermal Impedance Per Leg**



**Fig. 6 – Typical Junction Capacitance Per Leg**

