

# MBR1535CT - MBR15150CT

## 15.0 AMPS. Schottky Barrier Rectifiers

### TO-220AB

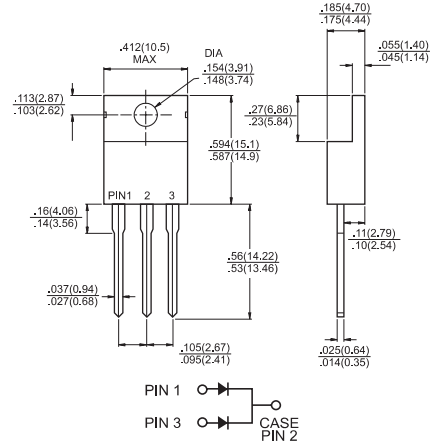


## Features

- ◇ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ◇ Metal silicon junction, majority carrier conduction
- ◇ Low power loss, high efficiency
- ◇ High current capability, low forward voltage drop
- ◇ High surge capability
- ◇ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◇ Guardring for overvoltage protection
- ◇ High temperature soldering guaranteed: 260°C/10 seconds, 0.25"(6.35mm) from case

## Mechanical Data

- ◇ Cases: JEDEC TO-220AB molded plastic body
- ◇ Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Mounting position: Any
- ◇ Mounting torque: 5 in. - lbs. max
- ◇ Weight: 0.08 ounce, 2.24 grams



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	MBR 1535CT	MBR 1545CT	MBR 1550CT	MBR 1560CT	MBR 1590CT	MBR 15100CT	MBR 15150CT	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	105	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	150	V
Maximum Average Forward Rectified Current at $T_C=105^\circ\text{C}$	$I_{(AV)}$	15							A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=105^\circ\text{C}$	$I_{FRM}$	15							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	150							A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0		0.5				A	
Maximum Instantaneous Forward Voltage at: (Note 2) $I_F=7.5\text{A}, T_C=25^\circ\text{C}$ $I_F=7.5\text{A}, T_C=125^\circ\text{C}$ $I_F=15\text{A}, T_C=25^\circ\text{C}$ $I_F=15\text{A}, T_C=125^\circ\text{C}$	$V_F$	0.57 0.84 0.72 —	— 0.65 — —	0.75 0.65 — —	— — — —	0.92 0.82 — —	— — — —	1.05 0.92 — —	V
Maximum Instantaneous Reverse Current @ $T_C=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_C=125^\circ\text{C}$ (Note 2)	$I_R$	0.5 10	— —	0.3 7.5	— —	— —	0.1 5.0	— —	mA mA
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	1,000							V/ $\mu\text{S}$
Typical Junction Capacitance	$C_j$	400				200			pF
Maximum Typical Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JC}$	10 1.5							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-65 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +175							$^\circ\text{C}$

- Notes:
1. 2.0 $\mu\text{s}$  Pulse Width,  $f=1.0\text{KHz}$
  2. Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle
  3. Mount on Heatsink Size of 2" x 3" x 0.25" Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBR1535CT THRU MBR15150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

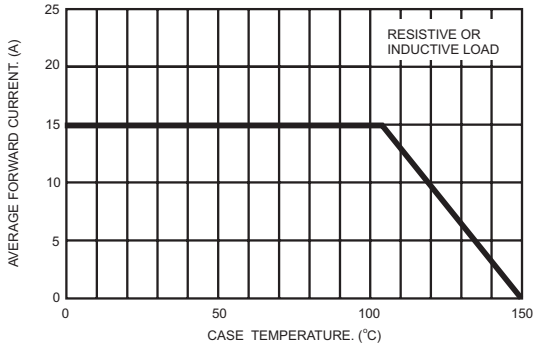


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

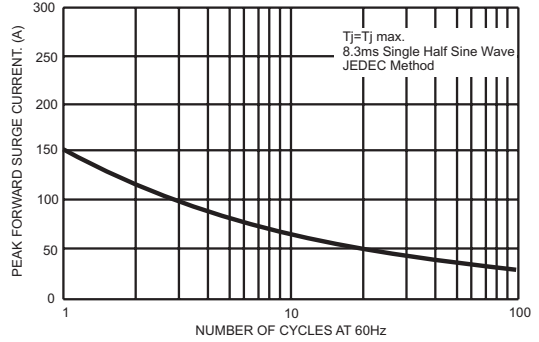


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

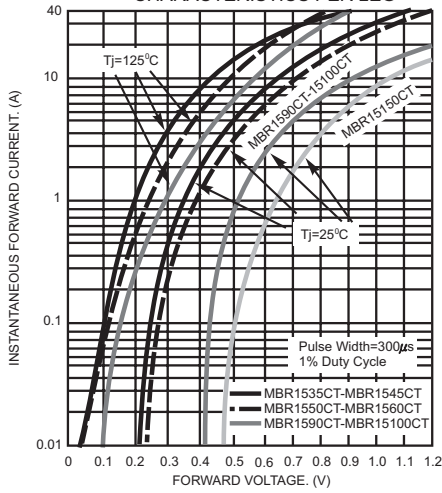


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

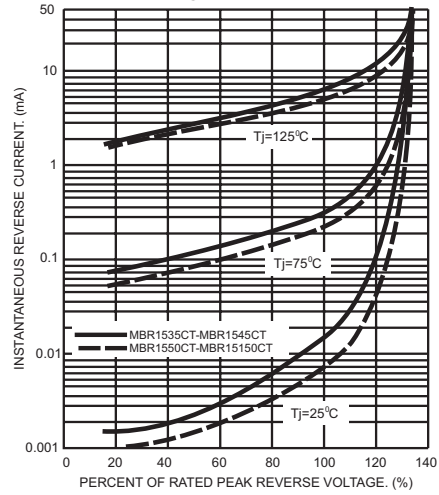


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

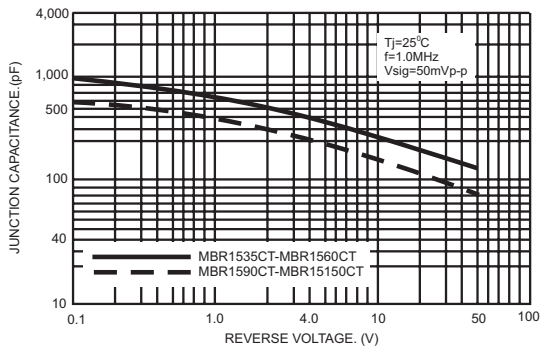


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG

