

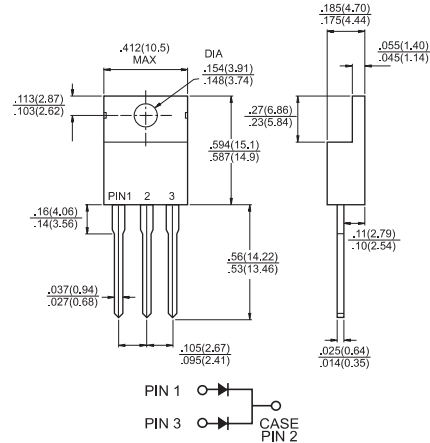


## Features

- ✦ 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
- ✦ 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 3035 CT	MBR 3045 CT	MBR 3050 CT	MBR 3060 CT	MBR 3090 CT	MBR 30100 CT	MBR 30150 CT	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 $T_c=130^\circ\text{C}$	$I_{(AV)}$	30								A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=130^\circ\text{C}$	$I_{FRM}$	30								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	200								A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0			0.5				A	
Maximum Instantaneous Forward Voltage at (Note 2) $I_F=15\text{A}, T_c=25^\circ\text{C}$ $I_F=15\text{A}, T_c=125^\circ\text{C}$ $I_F=30\text{A}, T_c=25^\circ\text{C}$ $I_F=30\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.7 0.6 0.82 0.73		0.77 0.67 — —		0.84 0.70 0.94 0.82		0.95 0.92 1.02 0.98	V	
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage Per Leg @ $T_c=125^\circ\text{C}$ (Note 2)	$I_R$	0.2 15		0.2 10		0.2 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	$C_j$	600		460		320			pF	
Maximum Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.0			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							$^\circ\text{C}$	

## RATINGS AND CHARACTERISTIC CURVES (MBR3035CT THRU MBR30150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

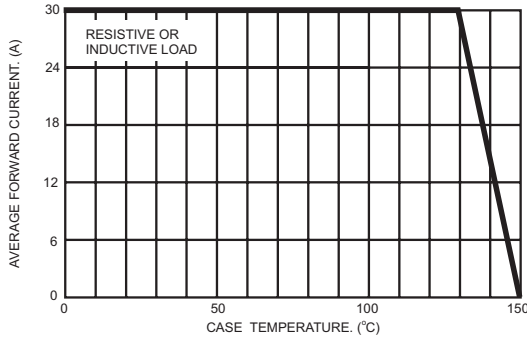


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

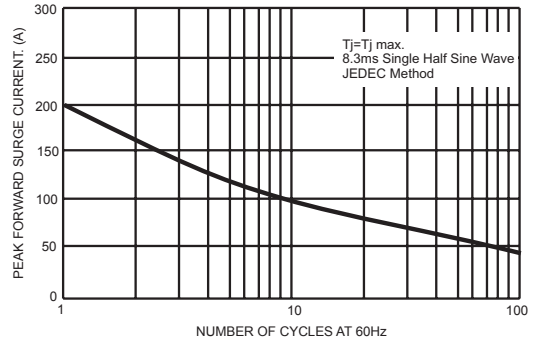


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

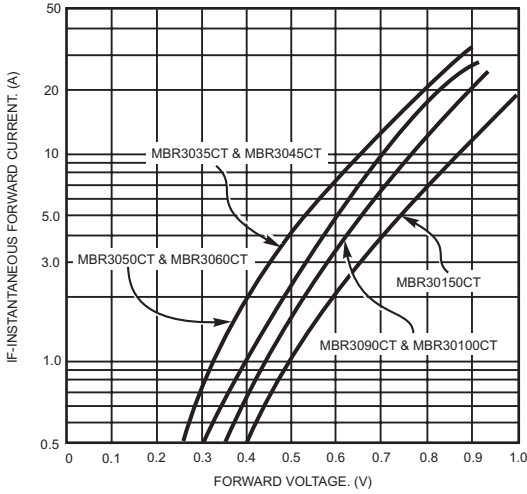


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

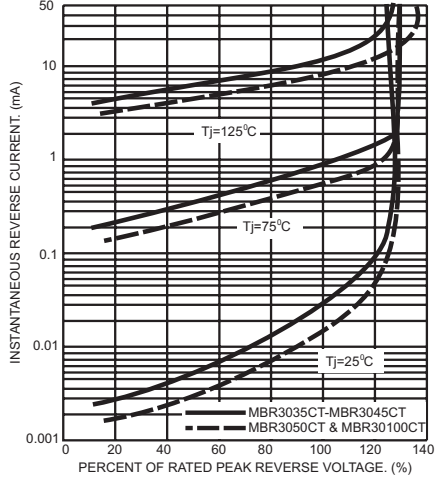


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

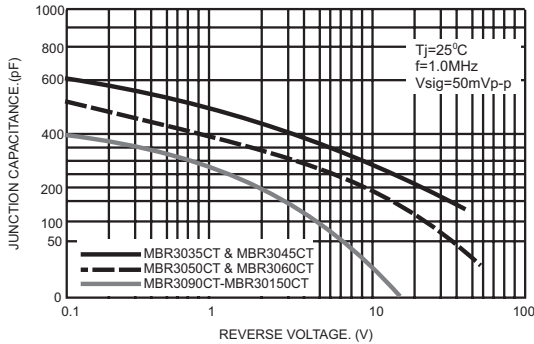


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

