

# MBRF3035CT - MBRF30150CT

## Isolated 30.0 AMPS. Schottky Barrier Rectifiers

### ITO-220AB

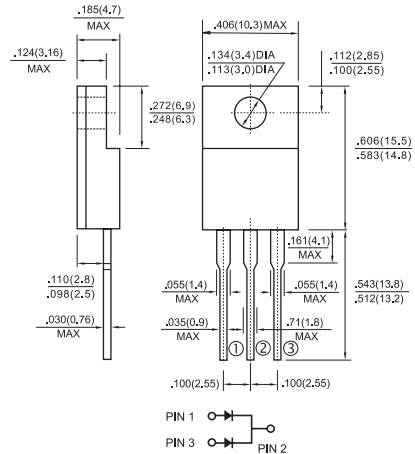


## Features

- ✧ 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: ITO-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	MBRF 3035 CT	MBRF 3045 CT	MBRF 3050 CT	MBRF 3060 CT	MBRF 3090 CT	MBRF 30100 CT	MBRF 30150 CT	Units	
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	V	
Maximum Working Peak Reverse 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 $T_c=130^\circ\text{C}$ Total device Per Leg	$I_{(AV)}$	30 15								A
Peak Repetitive Forward Current Per leg (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) $I_F=15\text{A}, T_c=25^\circ\text{C}$ $I_F=15\text{A}, T_c=125^\circ\text{C}$ $I_F=30\text{A}, T_c=25^\circ\text{C}$ $I_F=30\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.70 0.60 0.82 0.73		0.75 0.65 — —		0.84 0.70 0.94 0.82	0.95 0.80 1.05 0.92	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 20		0.2 15		0.2 10			mA mA	
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	1,000								V/ $\mu\text{s}$
Typical Junction Capacitance	$C_j$	580		480		360			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								$^\circ\text{C}$

- Notes:
1. 2.0us Pulse Width,  $f=1.0\text{ KHz}$
  2. Pulse Test: 300us Pulse Width, 1% Duty Cycle
  3. Thermal Resistance from Junction to Case Per Leg, with Heatsink size (4"x6"x0.25") Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBRF3035CT THRU MBRF30150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

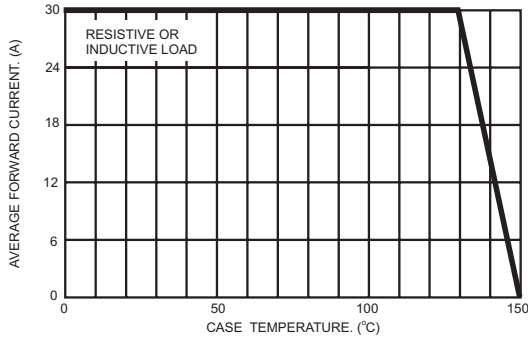


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

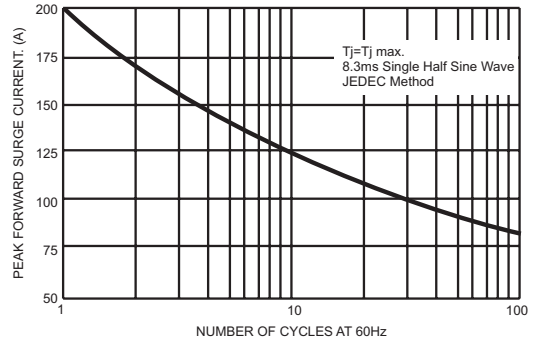


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

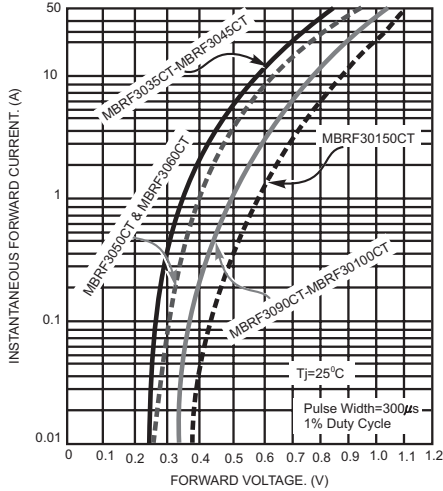


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

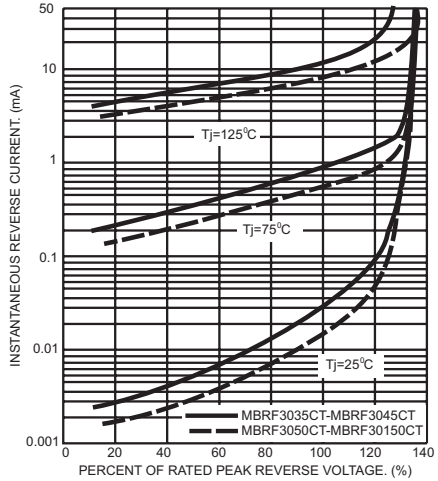


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

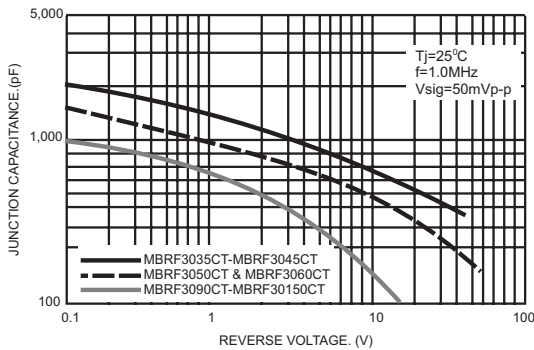


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

