

# MBRF2535CT - MBRF25150CT

## Isolated 25.0 AMPS. Schottky Barrier Rectifiers

### ITO-220AB

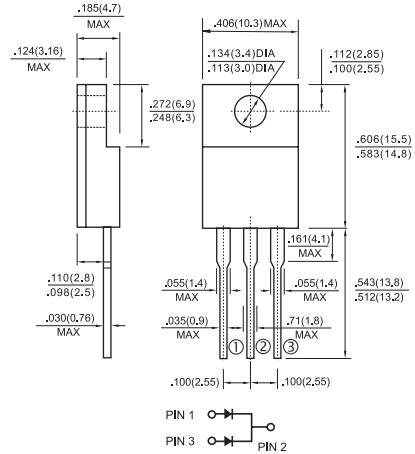


### Features

- ✦ 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 2535 CT	MBRF 2545 CT	MBRF 2550 CT	MBRF 2560 CT	MBRF 2590 CT	MBRF 25100 CT	MBRF 25150 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	$I_{(AV)}$				25 12.5				A
Peak Repetitive Forward Current Per leg (Rated $V_R$ , Square Wave, 20KHz) at $T_c=130^\circ\text{C}$	$I_{FRM}$				25				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) $I_F=12.5\text{A}, T_c=25^\circ\text{C}$ $I_F=12.5\text{A}, T_c=125^\circ\text{C}$ $I_F=25\text{A}, T_c=25^\circ\text{C}$ $I_F=25\text{A}, T_c=125^\circ\text{C}$	$V_F$	—	—	0.75 0.65	—	0.85 0.75	0.95 0.92	—	V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage Per Leg @ $T_c=125^\circ\text{C}$	$I_R$	0.2 15	—	0.2 10	—	0.1 7.5	0.1 5	—	mA mA
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$				1,000				V/ $\mu\text{s}$
Typical Junction Capacitance	$C_j$	580			480				pF
RMS Isolation Voltage (MBRF Type only) from Terminals to Heatsink with $t=1.0$ second, $RH \leq 30\%$	$V_{ISO}$				4500 (Note 4) 3500 (Note 5) 1500 (Note 6)				V
Maximum Thermal Resistance Per Leg (Note 3)	$R_{\theta JA}$ $R_{\theta JC}$				8.0 1.0				$^\circ\text{C}/\text{W}$
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,  $f=1.0$  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.
  4. Clip Mounting (on case), where lead does not overlap heatsink with 0.110" offset.
  5. Clip Mounting (on case), where leads do overlap heatsink.
  6. Screw Mounting with 4-40 screw, where washer diameter is  $\leq 4.9$  mm (0.19").

## RATINGS AND CHARACTERISTIC CURVES (MBRF2535CT THRU MBRF25150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

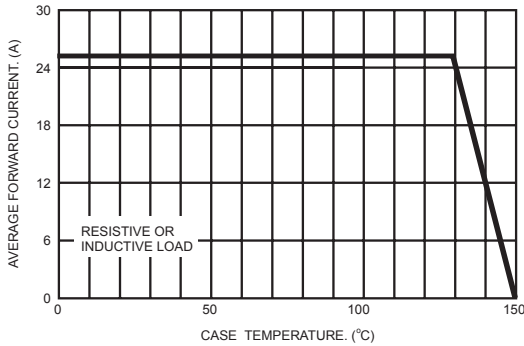


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

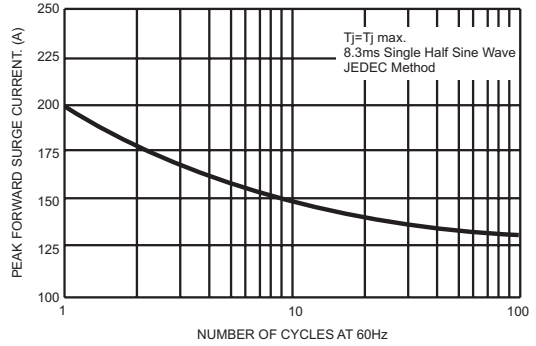


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

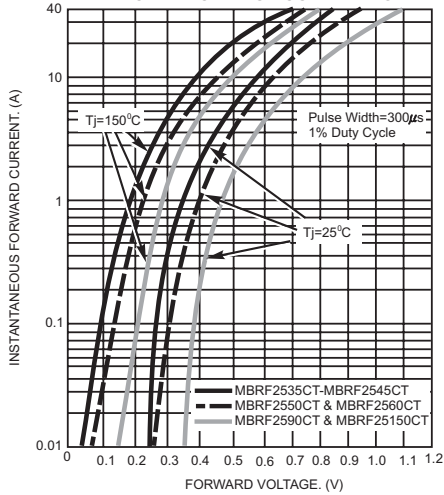


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

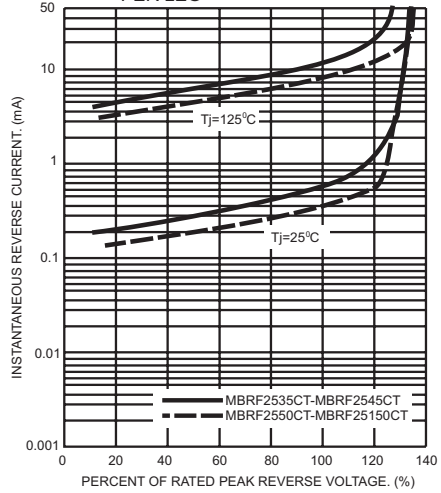


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

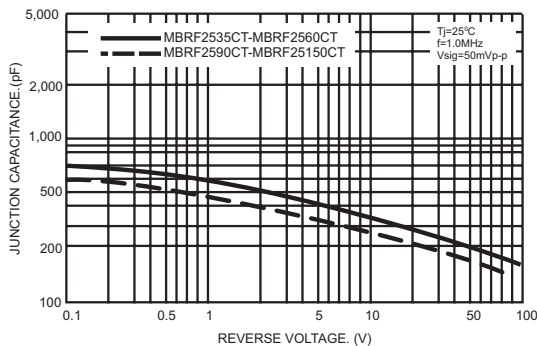


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

