

MBRF2035CT - MBRF20150CT

Isolated 20.0 AMPS. Schottky Barrier Rectifiers

ITO-220AB

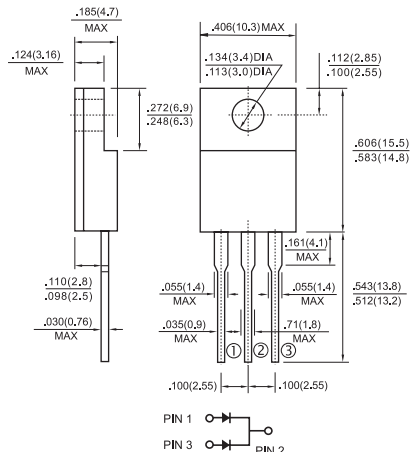


Features

- ✧ 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
- ✧ 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 2035 CT	MBRF 2045 CT	MBRF 2050 CT	MBRF 2060 CT	MBRF 2090 CT	MBRF 20100 CT	MBRF 20150 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 $T_C=135^{\circ}\text{C}$ Total device Per Leg	$I_{(AV)}$	20 10							A				
Peak Repetitive Forward Current Per leg (Rated V_R , Square Wave, 20KHz) at $T_C=135^{\circ}\text{C}$	I_{FRM}	20							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) $I_F=10\text{A}$, $T_C=25^{\circ}\text{C}$ $I_F=10\text{A}$, $T_C=125^{\circ}\text{C}$ $I_F=20\text{A}$, $T_C=25^{\circ}\text{C}$ $I_F=20\text{A}$, $T_C=125^{\circ}\text{C}$	V_F	- 0.57 0.84 0.72	0.80 0.70 0.95 0.85		0.85 0.75 0.95 0.85		0.95 0.85 1.05 0.95		V				
Maximum Instantaneous Reverse Current @ $T_C=25^{\circ}\text{C}$ at Rated DC Blocking Voltage @ $T_C=125^{\circ}\text{C}$	I_R	0.1 15	0.1 10		0.1 5.0				mA				
Voltage Rate of Change, (Rated V_R)	dV/dt	10,000								V/ μs			
Typical Junction Capacitance	C_j	400		310					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				
Typical Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.5							3.5			$^{\circ}\text{C}/\text{W}$	
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, $f=1.0$ 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 ≤ 4.9 mm (0.19")

RATINGS AND CHARACTERISTIC CURVES (MBRF2035CT THRU MBRF20150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

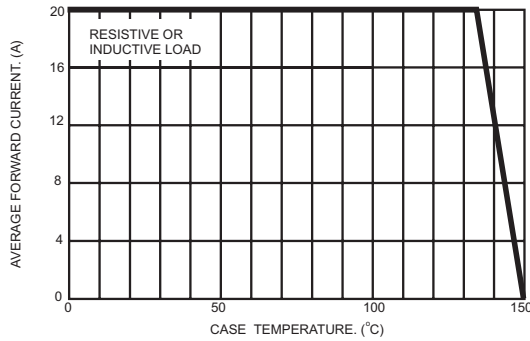


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

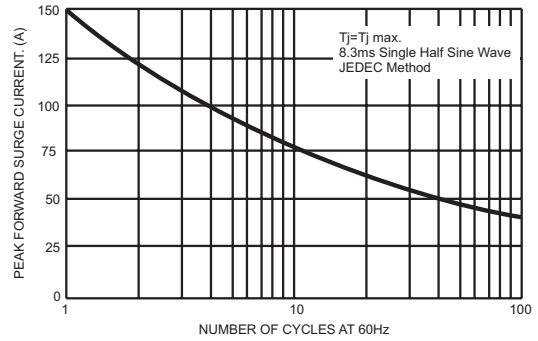


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

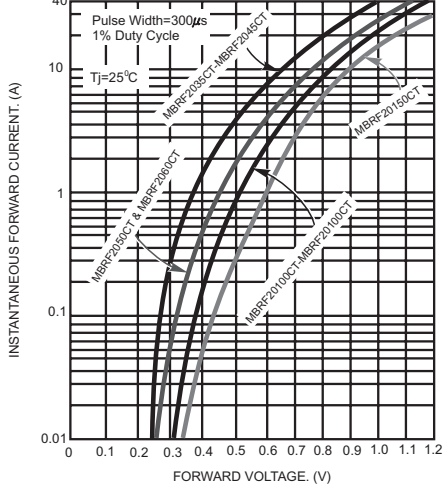


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

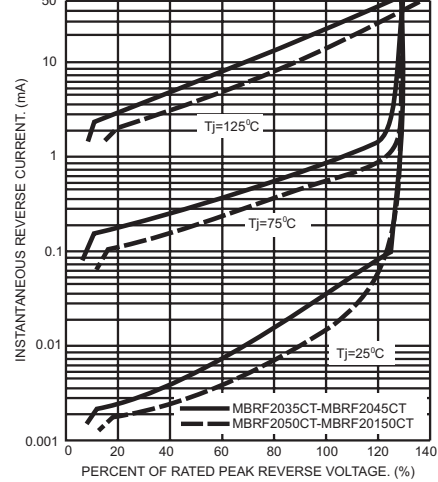


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

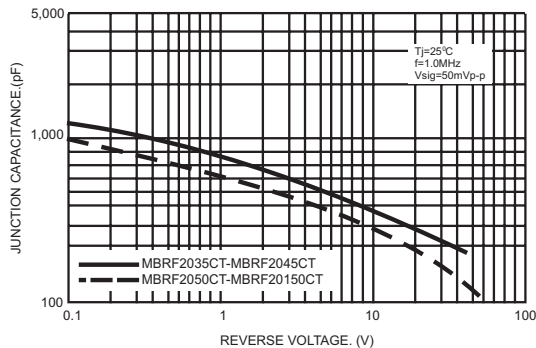


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

