



# MBRF1030CT THRU MBRF10200CT

## Isolation 10.0 AMPS. Schottky Barrier Rectifiers



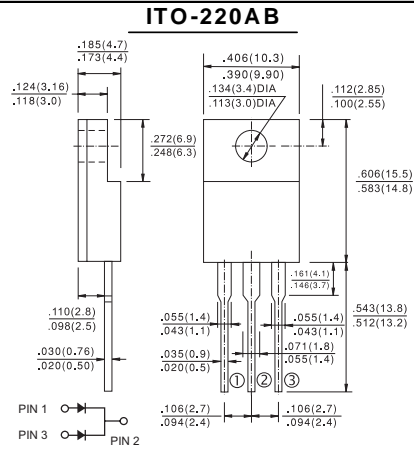
Voltage Range  
30 to 200 Volts  
Current  
10.0 Amperes

### 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
- ✦ Guarding 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: Leads 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	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	Units	
		1030 CT	1035 CT	1040 CT	1045 CT	1050 CT	1060 CT	10100 CT	10150 CT	10200 CT		
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	30	35	40	45	50	60	100	150	200	V	
Maximum RMS Voltage	$V_{RMS}$	21	24	28	31	35	42	70	105	140	V	
Maximum DC Blocking Voltage	$V_{DC}$	30	35	40	45	50	60	100	150	200	V	
Maximum Average Forward Rectified Current at $T_c=133^\circ\text{C}$	$I_{(AV)}$	10									A	
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=133^\circ\text{C}$	$I_{FRM}$	10.0									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)	$I_{RRM}$	0.5									A	
Maximum Instantaneous Forward Voltage at (Note 2) $I_F=5\text{A}, T_c=25^\circ\text{C}$ $I_F=5\text{A}, T_c=125^\circ\text{C}$ $I_F=10\text{A}, T_c=25^\circ\text{C}$ $I_F=10\text{A}, T_c=125^\circ\text{C}$	$V_F$		0.70			0.80	0.85	0.88	0.99		V	
			0.57			0.65	0.75	0.78	0.87			
							0.95					
							0.85					
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage @ $T_c=25^\circ\text{C}$ @ $T_c=125^\circ\text{C}$	$I_R$	0.1			15			0.15			mA mA	
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	10,000									V/ $\mu\text{S}$	
RMS Isolation Voltage ( $t=1.0$ second, R.H. $\leq 30\%$ , $T_A=25^\circ\text{C}$ ) (Note 4) (Note 5) (Note 6)	$V_{ISO}$					4500	3500	1500				V
Typical Thermal Resistance Per Leg (Note3)	$R \theta_{JC}$	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 +150									$^\circ\text{C}$	

Notes: 1. 2.0 $\mu\text{s}$  Pulse Width,  $f=1.0$  KHz

2. Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle

3. Thermal Resistance from Junction to Case Per Leg.

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 (MBRF1030CT THRU MBRF10200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

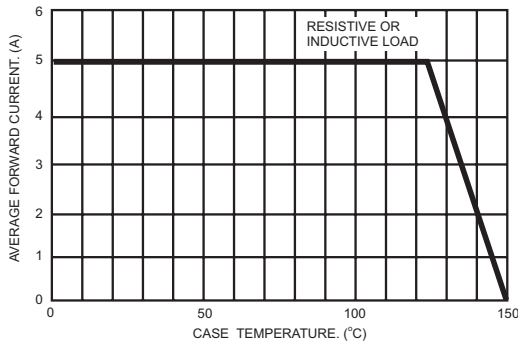


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

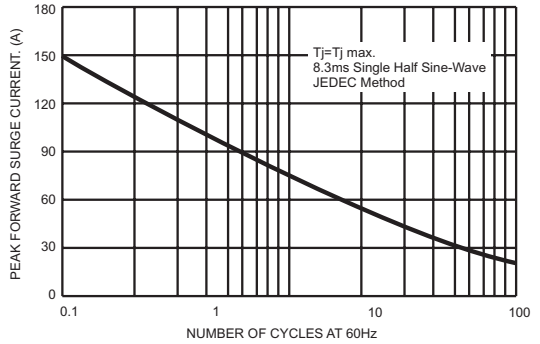


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

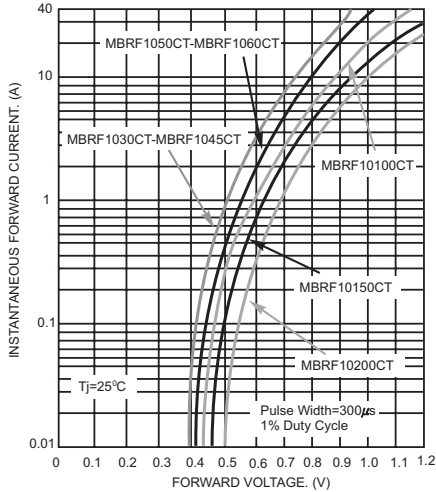


FIG.4- TYPICAL REVERSE CHARACTERISTICS

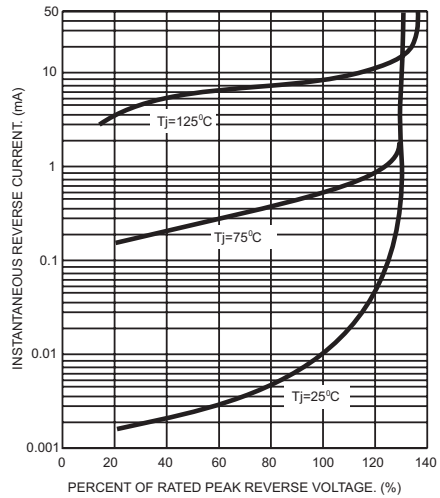


FIG.5- TYPICAL JUNCTION CAPACITANCE

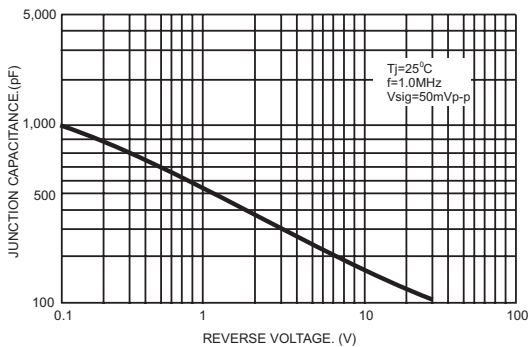


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG

