



MBRF1030CT THRU MBRF10200CT

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Isolation 10.0 AMPS. Schottky Barrier Rectifiers



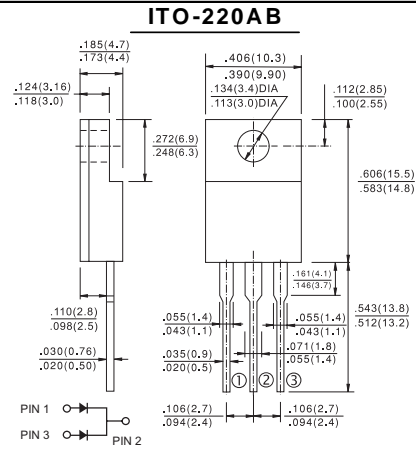
Voltage Range
30 to 200 Volts
Current
10.0 Amperes

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



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 1030 CT	MBRF 1035 CT	MBRF 1040 CT	MBRF 1045 CT	MBRF 1050 CT	MBRF 1060 CT	MBRF 10100 CT	MBRF 10150 CT	MBRF 10200 CT	Units
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 0.57				0.80 0.65		0.85 0.75 0.95 0.85	0.88 0.78	0.99 0.87	V
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						0.15 150			mA mA
Voltage Rate of Change, (Rated V_R)	dV/dt	10,000									V/ μS
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 μs Pulse Width, $f=1.0$ KHz

2. Pulse Test: 300 μs 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 ≤ 4.9 mm (0.19")

RATINGS AND CHARACTERISTIC CURVES (MBRF1030CT THRU MBRF10200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

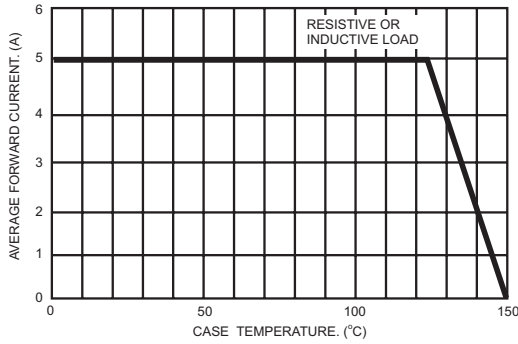


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

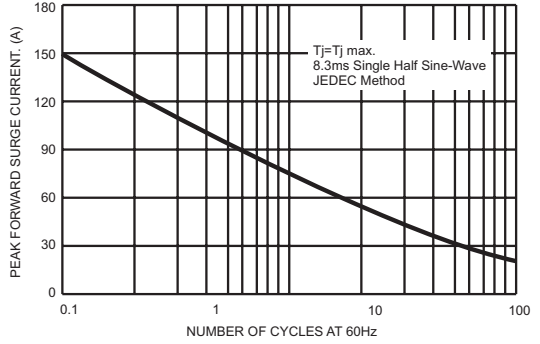


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

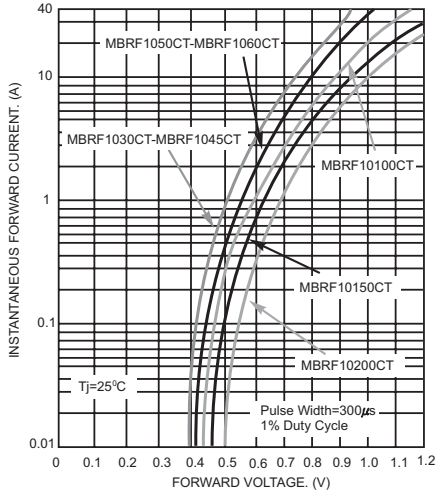


FIG.4- TYPICAL REVERSE CHARACTERISTICS

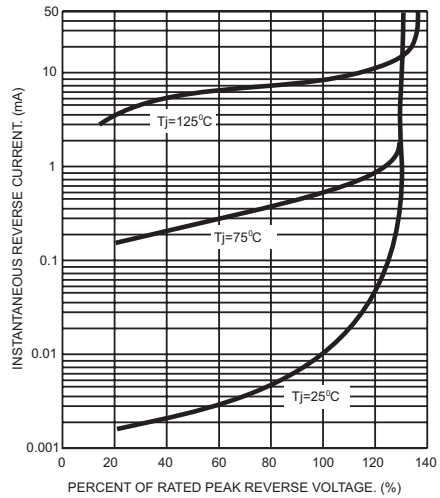


FIG.5- TYPICAL JUNCTION CAPACITANCE

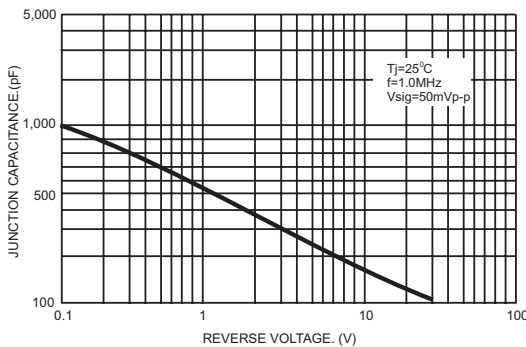


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG

