

MBRF2035CT THRU MBRF20100CT
Isolation 20.0 AMPS. Schottky Barrier Rectifiers



Voltage Range
35 to 100 Volts
Current
20.0 Amperes

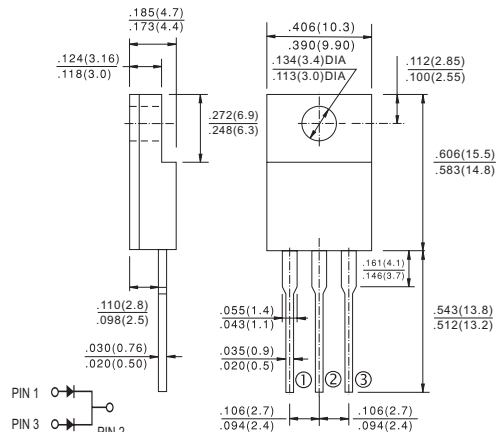
Features

- ✧ 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
- ✧ 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: 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

ITO-220AB



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 2035CT	MBRF 2045CT	MBRF 2050CT	MBRF 2060CT	MBRF 20100CT	Units
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	35	45	50	60	100	V
Maximum RMS Voltage	V _{RMS}	24	31	35	42	70	V
Maximum DC Blocking Voltage	V _{DC}	35	45	50	60	100	V
Maximum Average Forward Rectified Current at T _C =135°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°C	I _{FRM}	20.0					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}	1.0		0.5			A
Maximum Instantaneous Forward Voltage at (Note 2) I _F =10A, T _C =25°C I _F =10A, T _C =125°C I _F =20A, T _C =25°C I _F =20A, T _C =125°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	V
Maximum Instantaneous Reverse Current @ T _C =25°C at Rated DC Blocking Voltage @ T _C =125°C	I _R	0.1 15.0		0.15 150.0			mA mA
Voltage Rate of Change, (Rated V _R)	dV/dt	10,000					V/uS
Typical Thermal Resistance Per Leg (Note 3)	R _{θC}	1.5				3.5	°C/W
Typical Junction Capacitance	C _j	400		310			pF
RMS Isolation Voltage (MBRF Type Only) from Terminals to Heatsink with t=1.0 Second, RH ≤ 30%	V _{ISO}	4500 (Note 4) 3500 (Note 5) 1500 (Note 6)					V
Operating Junction Temperature Range	T _j	-65 to +150					°C
Storage Temperature Range	T _{STG}	-65 to +175					°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 MBRF20100CT)

FIG.1- FORWARD CURRENT DERATING CURVE

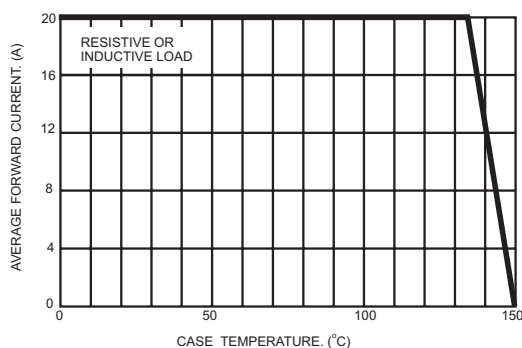


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

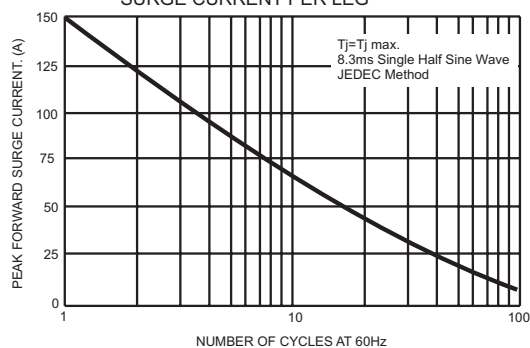


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

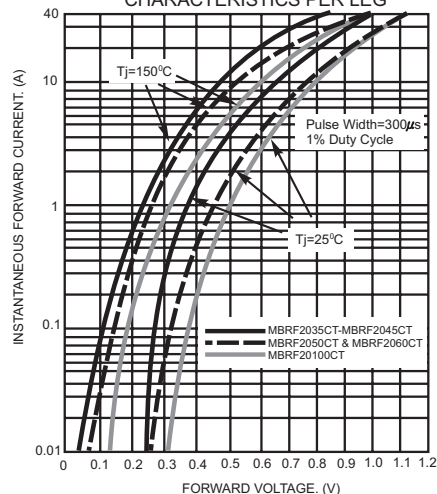


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

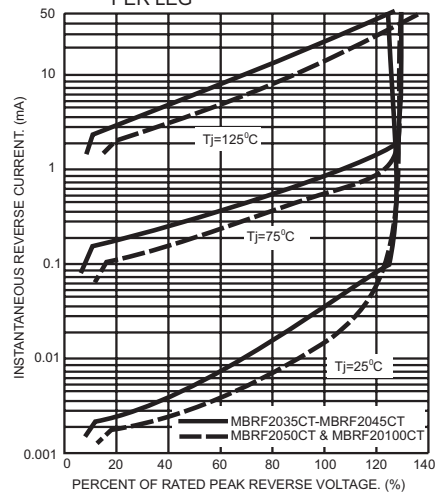


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

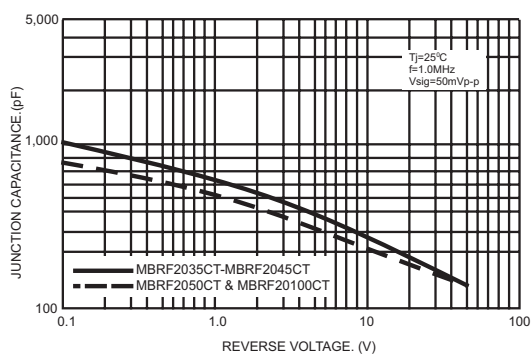


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

