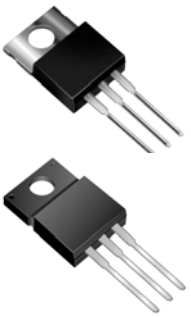
MBR10150CT, MBRF10150CT

Dual Common-Cathode High-Voltage Schottky Barrier Rectifiers
Reverse Voltage 150 Volts Forward Current 10.0 Amperes

Features

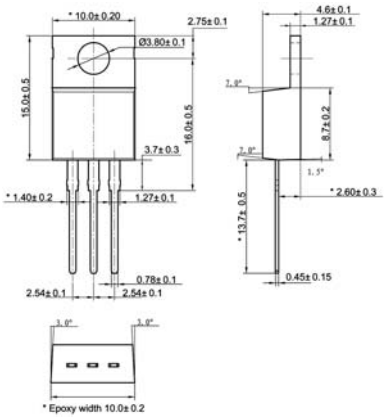
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High frequency operation
- Solder Dip 260 °C, 40 seconds
- For use in high frequency inverters, free wheeling and polarity protection applications



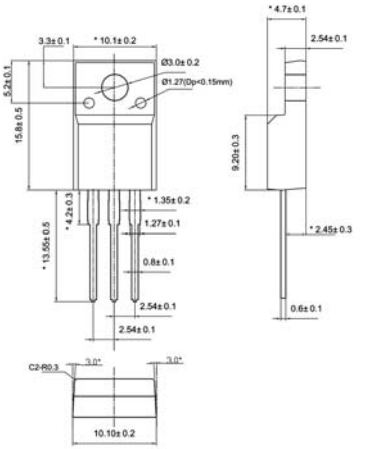
Mechanical Data

- Case: TO-220AB, ITO-220AB Epoxy meets UL-94V-0 Flammability rating
- Terminals: Matte Tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D
- Mounting Torque: 10 in-lbs maximum
- Polarity: As marked
- Weight: 0.08 ounce, 2.24 grams

TO-220AB



ITO-220AB



Dimensions in millimeters

Maximum Ratings and Electrical Characteristics

(T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR10150CT	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	150	Volts
Working peak reverse voltage	V_{RWM}	150	Volts
Maximum DC blocking voltage	V_{DC}	150	Volts
Maximum average forward rectified current (See Fig. 1) Total device Per leg	$I_{F(AV)}$	10 5.0	Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I_{FSM}	160	Amps
Peak repetitive reverse current per leg at t_p = 2.0us, 1KHz	I_{RRM}	1.0	Amp
Voltage rate of change (rated V_R)	dv/dt	10,000	V/us
Maximum instantaneous forward voltage per leg (Note 4)			
at I_F=5.0A, T_J=25°C	V_F	0.88	Volts
at I_F=5.0A, T_J=125°C		0.72	
at I_F=10A, T_J=25°C		0.96	
at I_F=10A, T_J=125°C		0.80	
Maximum reverse current per leg at working peak reverse voltage (Note 4) T_J=25°C	I_R	5.0	uA
T_J=125°C		1.0	mA
Typical thermal resistance per leg	$R_{\theta JC}$	MBR 2.4 / MBRF 4.5	°C/W
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V_{ISOL}	4500 (Note 1) 3500 (Note 2) 1500 (Note 3)	Volts
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Notes: 1. Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
2. Clip mounting (on case), where leads do overlap heatsink
3. Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
4. Pulse test: 300us pulse width, 1% duty cycle

RATINGS AND CHARACTERISTIC CURVES

(T_A = 25°C unless otherwise noted)

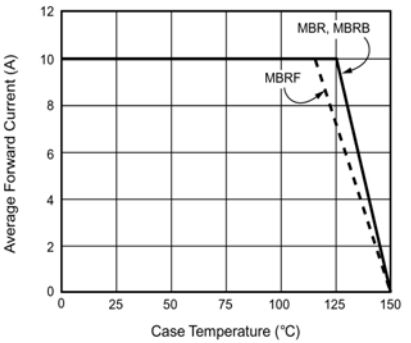


Figure 1. Forward Derating Curve (Total)

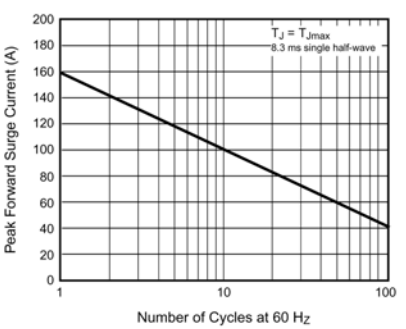


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

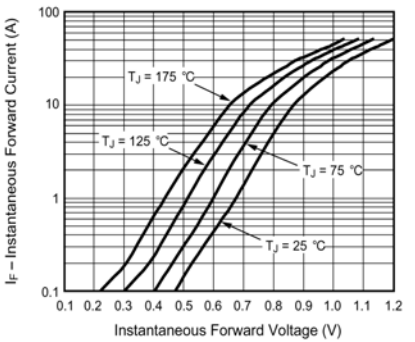


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

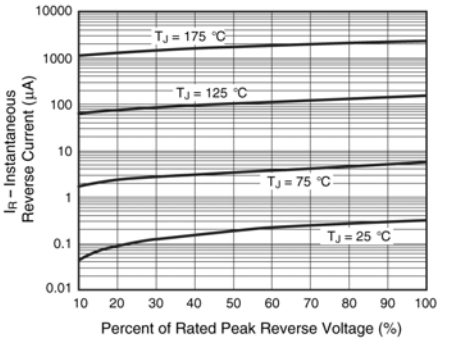


Figure 4. Typical Reverse Characteristics Per Leg

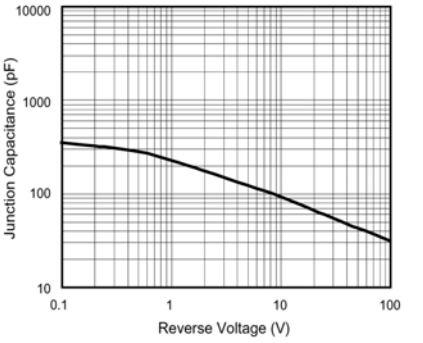


Figure 5. Typical Junction Capacitance Per Leg

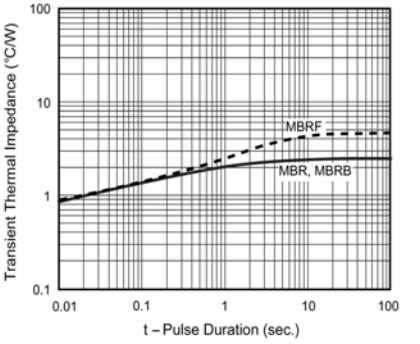


Figure 6. Typical Transient Thermal Impedance Per Leg