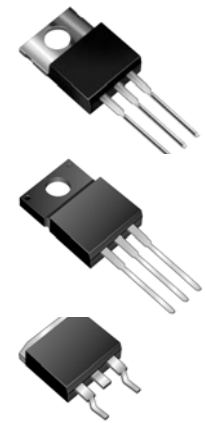
MBR/MBRF/MBRB 15xxCT

Schottky Barrier Rectifiers

Reverse Voltage 35 to 60 Volts Forward Current 15.0 Amperes

Features

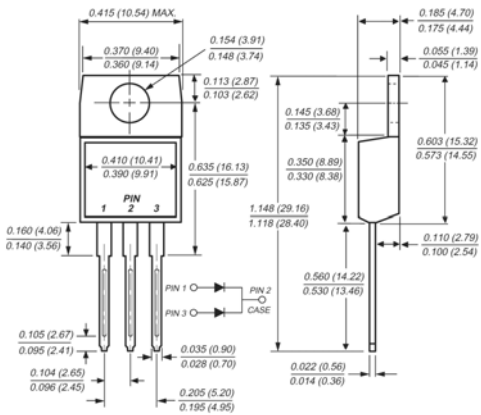
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Dual rectifier construction, positive center tap
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case



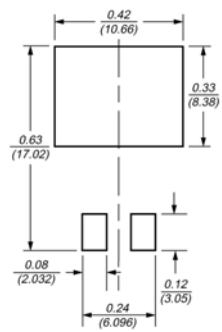
Mechanical Data

- Case: JEDEC TO-220AB, ITO-220AB & TO-263AB molded plastic body
- Terminals: Plated leads, solderable per MIL-STD-750, Method 2026
- Polarity: As marked
- Mounting Position: Any
- Mounting Torque: 10 in-lbs maximum
- Weight: 0.08 ounce, 2.24 grams

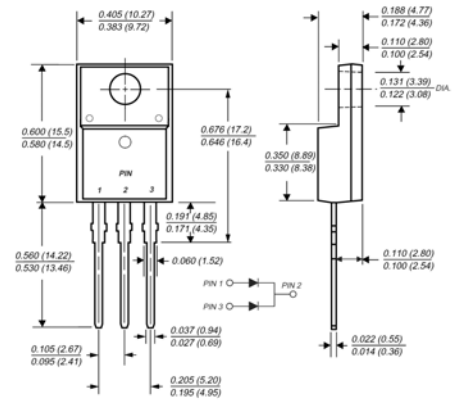
TO-220AB



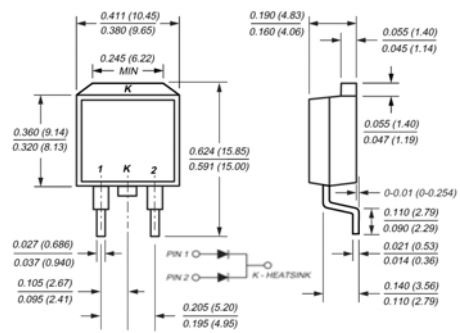
Mounting Pad Layout TO-263AB



ITO-220AB



TO-263AB(D²PAK)



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

(T_C = 25ºC unless otherwise noted)

Parameter	Symbol	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	50	60	Volts
Working peak reverse voltage	V_{RWM}	35	45	50	60	Volts
Maximum DC blocking voltage	V_{DC}	35	45	50	60	Volts
Maximum average forward rectified current at T_C=105ºC — Total device / Per leg	$I_{F(AV)}$	15 7.5				Amps
Peak repetitive forward current at (rated V_R, sq. wave, 20KHz) at T_C=105ºC	I_{FRM}	15				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150				Amps
Peak repetitive reverse surge current per leg at t_p = 2.0us, 1KHz	I_{RRM}	1.0		0.5		Amps
Voltage rate of change (rated V_R)	dv/dt	10,000				V/us
Maximum instantaneous forward voltage per leg (Note 4)						
at I_F=7.5A, T_C=25ºC	V_F	-		0.75		Volt
at I_F=7.5A, T_C=125ºC		0.57		0.65		
at I_F=15A, T_C=25ºC		0.84		-		
at I_F=15A, T_C=125ºC		0.72		-		
Maximum instantaneous reverse current at rated DC blocking voltage per leg (Note 4) — T_C=25ºC	I_R	0.1		1.0		mA
T_C=125ºC		15		50		
Maximum thermal resistance per leg	$R_{\theta JA}$ $R_{\theta JC}$	MBR 60 / MBRF --- / MBRB 60 MBR 3.0 / MBRF 5.0 / MBRB 3.0				ºC/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 temperature range	T_J	-55 to +150				ºC
Storage temperature range	T_{STG}	-55 to +150				ºC

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)

Fig. 1 – Forward Current Derating Curve

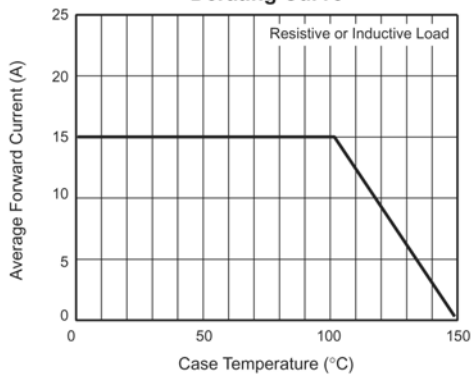


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

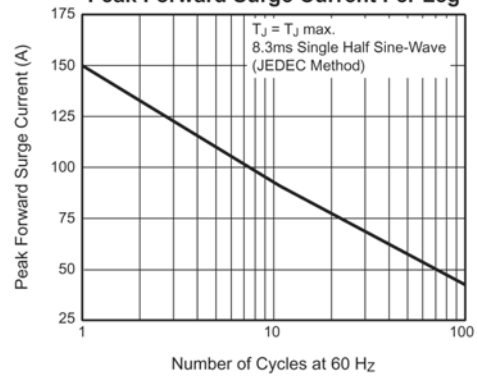


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

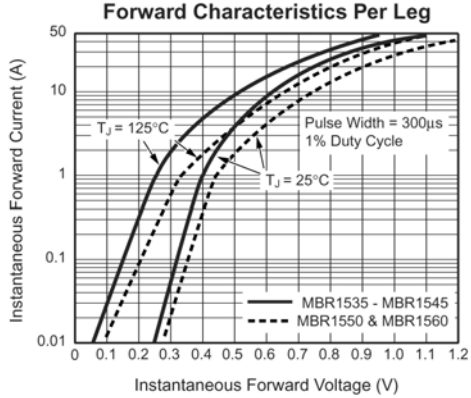


Fig. 4 – Typical Reverse Characteristics Per Leg

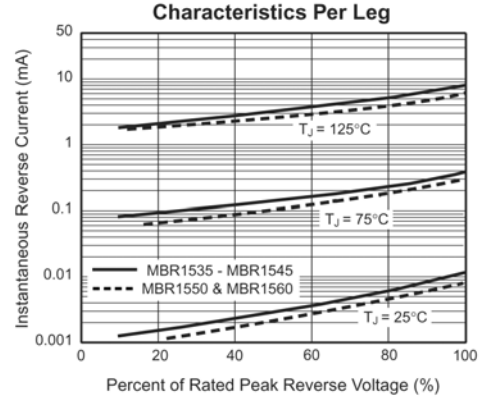


Fig. 5 – Typical Junction Capacitance Per Leg

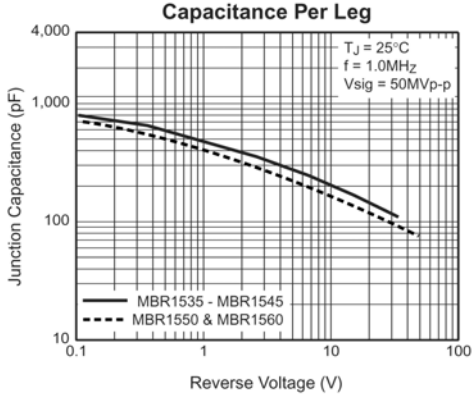


Fig. 6 – Typical Transient Thermal Impedance Per Leg