

# Schottky Barrier Rectifiers

## PRODUCT SUMMARY

Reverse Voltage 35 to 60 Volts

Forward current 10.0 Amperes

## FEATURES

Plastic package has Underwriters Laboratory Flammability

Classifications 94V-0

Metal silicon junction, majority carrier conduction

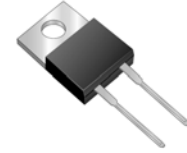
Low power loss, high efficiency

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-220AC, ITO-220AC & TO-263AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Polarity: As marked

Mounting Position: Any

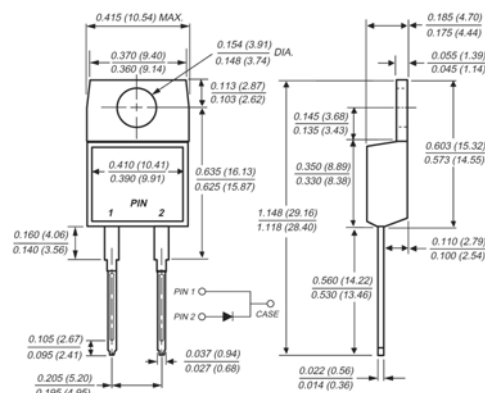
Mounting Torque: 10 in-lbs maximum

Weight: 0.08 ounce, 2.24 grams

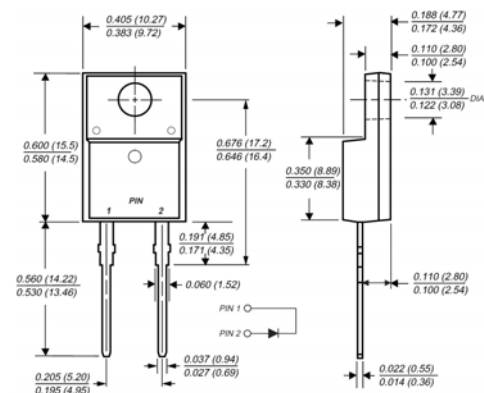


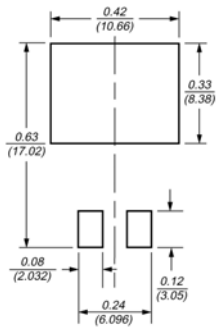
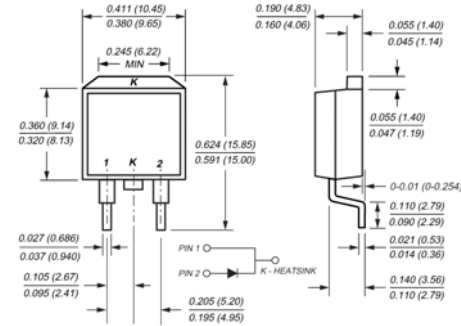
**Pb-free; RoHS-compliant**

**TO-220AC**



**ITO-220AC**



**Mounting Pad Layout TO-263AB**

**TO-263AB(D<sup>2</sup>PAK)**


Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(T<sub>C</sub>=25°C unless otherwise noted)

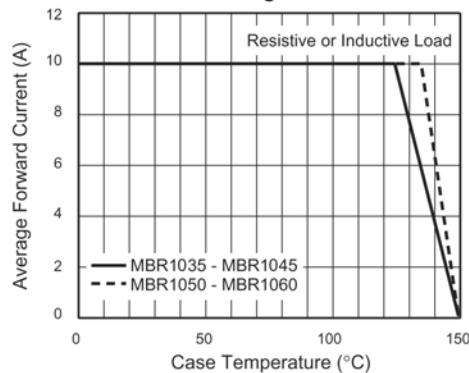
Parameter	Symbol	MBR1035	MBR1045	MBR1050	MBR1060	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	Volts
Working peak reverse voltage	V <sub>RWM</sub>	35	45	50	60	Volts
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	Volts
Maximum average forward rectified current (See Fig. 1)	I <sub>F(AV)</sub>	10				Amps
Peak repetitive forward current (sq. wave, 20KHz) at T <sub>C</sub> =135°C	I <sub>FRM</sub>	20				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	150				Amps
Peak repetitive reverse current at t <sub>p</sub> = 2.0us, 1KHz	I <sub>RRM</sub>	1.0		0.5		Amps
Voltage rate of change (rated V <sub>R</sub> )	dv/dt	10,000				V/us
Maximum instantaneous forward voltage (Note 4)  at I <sub>F</sub> =10A, T <sub>C</sub> =25°C at I <sub>F</sub> =10A, T <sub>C</sub> =125°C at I <sub>F</sub> =20A, T <sub>C</sub> =25°C at I <sub>F</sub> =20A, T <sub>C</sub> =125°C	V <sub>F</sub>	-  0.80 0.57 0.70 0.84 0.95 0.72 0.85				Volts
Maximum instantaneous reverse current at rated DC blocking voltage (Note 4) T <sub>C</sub> =25°C T <sub>C</sub> =125°C	I <sub>R</sub>	0.10 15				mA
Maximum thermal resistance from junction to case	R <sub>θJC</sub>	MBR 2.0 / MBRF 4.0 / MBRB 2.0				°C/W
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 (Note 1) 3500 (Note 2) 1500 (Note 3)				Volts
Operating junction temperature range	T <sub>J</sub>	-55 to +150				°C
Storage temperature range	T <sub>STG</sub>	-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

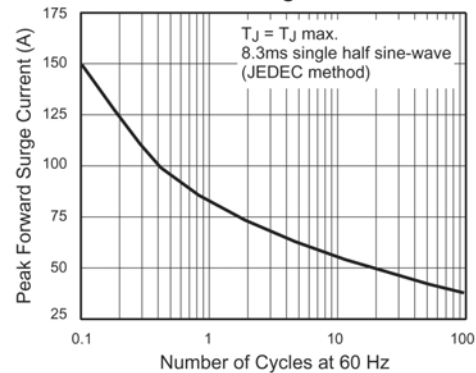
## RATINGS AND CHARACTERISTIC CURVES

( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

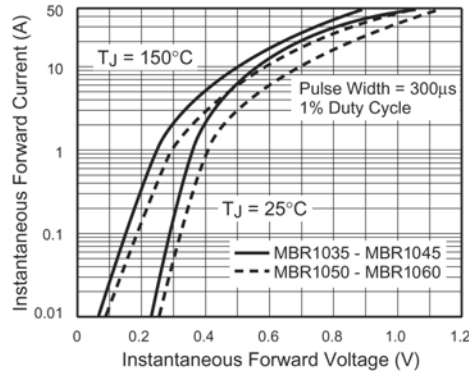
**Fig. 1 - Forward Current Derating Curve**



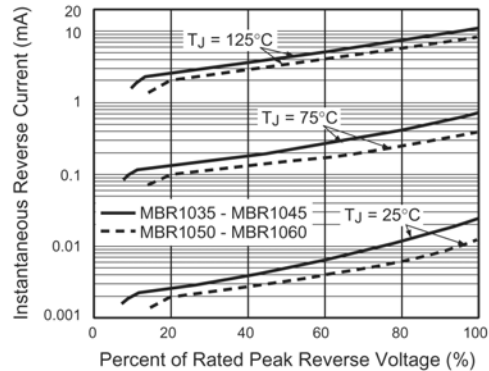
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



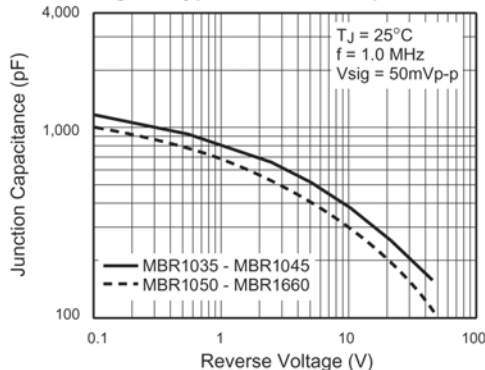
**Fig. 3 - Typical Instantaneous Forward Characteristics**



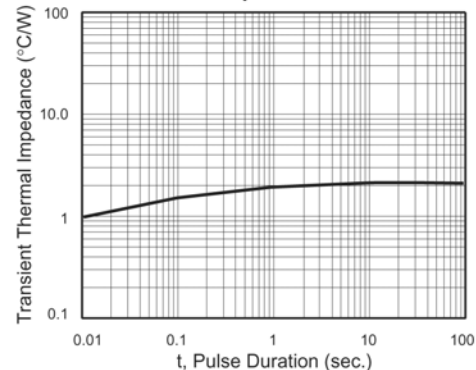
**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



**Fig. 6 - Typical Transient Thermal Impedance**



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