

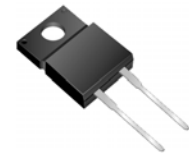
# Schottky Barrier Rectifiers

## 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



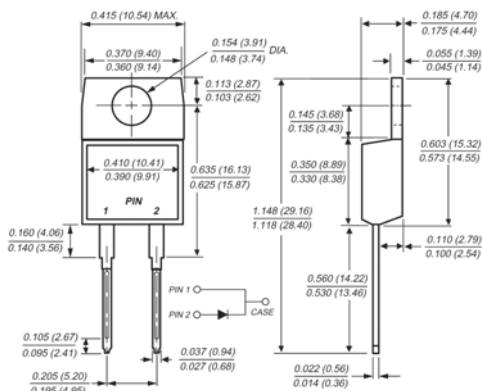
## MECHANICAL DATA

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

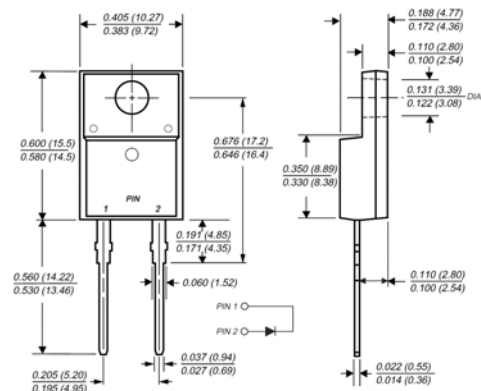


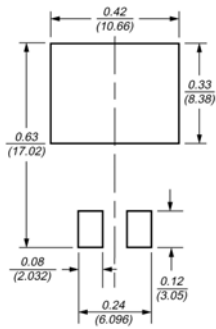
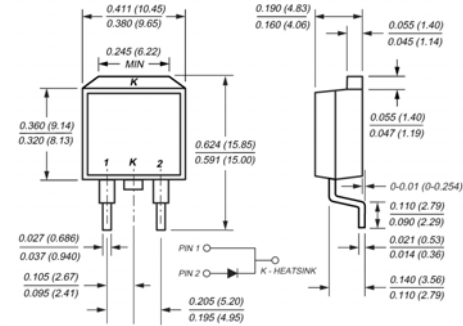
**Pb-free; RoHS-compliant**

**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

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

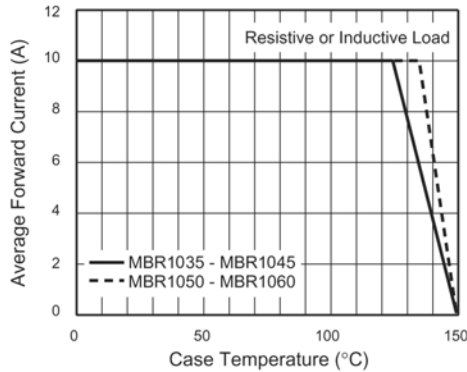
Parameter	Symbol	MBR1035	MBR1045	MBR1050	MBR1060	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	35	45	50	60	Volts
Working peak reverse voltage	$V_{RWM}$	35	45	50	60	Volts
Maximum DC blocking voltage	$V_{DC}$	35	45	50	60	Volts
Maximum average forward rectified current (See Fig. 1)	$I_{F(AV)}$	10				Amps
Peak repetitive forward current (sq. wave, 20KHz) at $T_C=135^{\circ}\text{C}$	$I_{FRM}$	20				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150				Amps
Peak repetitive reverse current at $t_p = 2.0\mu\text{s}$ , 1KHz	$I_{RRM}$	1.0		0.5		Amps
Voltage rate of change (rated $V_R$ )	dv/dt	10,000				V/ $\mu\text{s}$
Maximum instantaneous forward voltage (Note 4) at $I_F=10\text{A}$ , $T_C=25^{\circ}\text{C}$ at $I_F=10\text{A}$ , $T_C=125^{\circ}\text{C}$ at $I_F=20\text{A}$ , $T_C=25^{\circ}\text{C}$ at $I_F=20\text{A}$ , $T_C=125^{\circ}\text{C}$	$V_F$	-		0.80		Volts
Maximum instantaneous reverse current at rated DC blocking voltage (Note 4) $T_C=25^{\circ}\text{C}$ $T_C=125^{\circ}\text{C}$	$I_R$		0.10			mA
Maximum thermal resistance from junction to case	$R_{\theta JC}$	MBR 2.0 / MBRF 4.0 / MBRB 2.0				$^{\circ}\text{C}/\text{W}$
RMS Isolation voltage (MBRF type only) from terminals to heatsink with $t = 1.0$ second, $\text{RH} \leq 30\%$	$V_{ISOL}$		4500 (Note 1) 3500 (Note 2) 1500 (Note 3)			Volts
Operating junction temperature range	$T_J$	-55 to +150				$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150				$^{\circ}\text{C}$

- 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: 300 $\mu\text{s}$  pulse width, 1% duty cycle

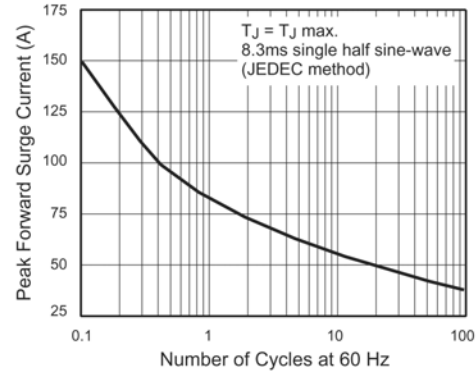
## RATINGS AND CHARACTERISTIC CURVES

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

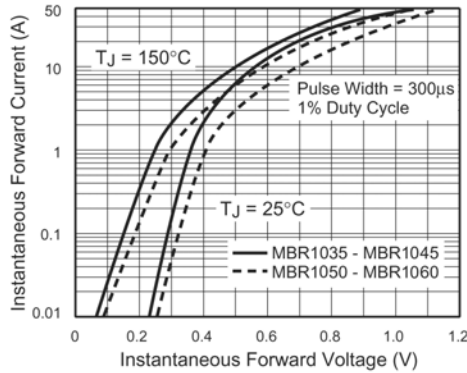
**Fig. 1 - Forward Current Derating Curve**



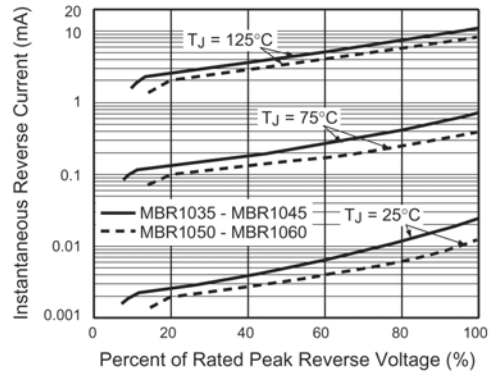
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



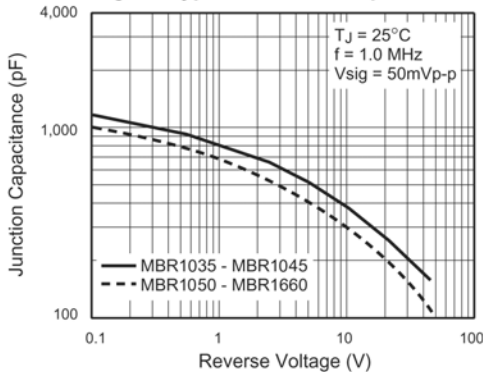
**Fig. 3 - Typical Instantaneous Forward Characteristics**



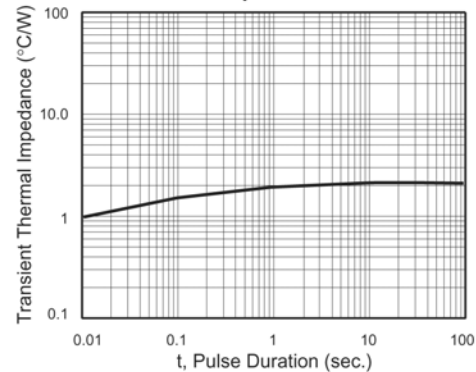
**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



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



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