

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



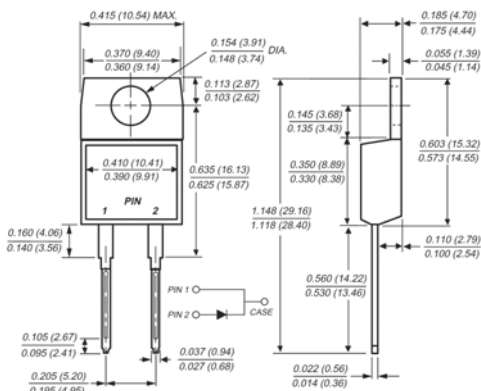
MECHANICAL DATA

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

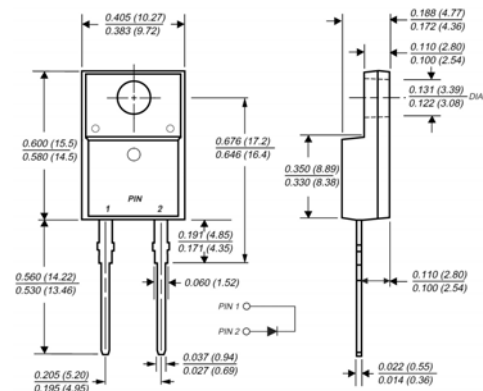


Pb-free; RoHS-compliant

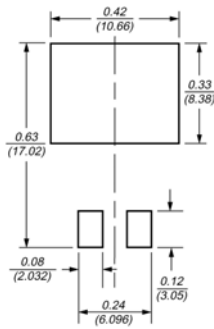
TO-220AC



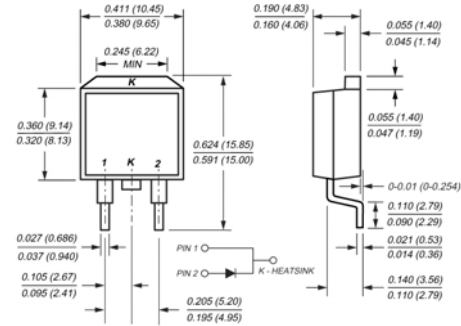
ITO-220AC



Mounting Pad Layout TO-263AB



TO-263AB(D²PAK)



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/ μs
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 μs pulse width, 1% duty cycle

RATINGS AND CHARACTERISTIC CURVES

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

Fig. 1 - Forward Current Derating Curve

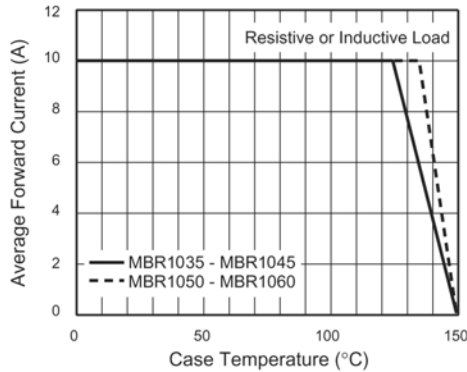


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

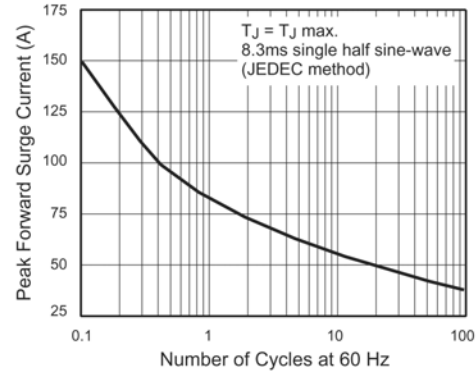


Fig. 3 - Typical Instantaneous Forward Characteristics

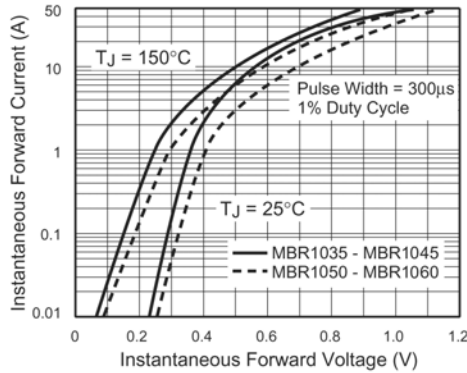


Fig. 4 - Typical Reverse Characteristics

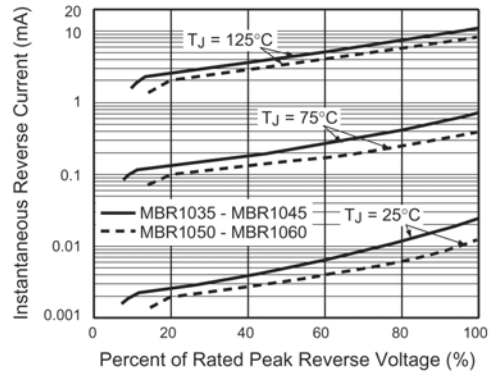


Fig. 5 - Typical Junction Capacitance

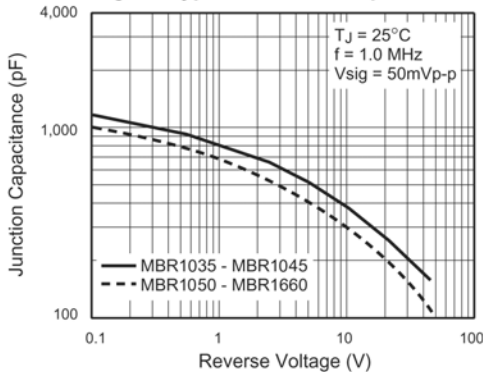
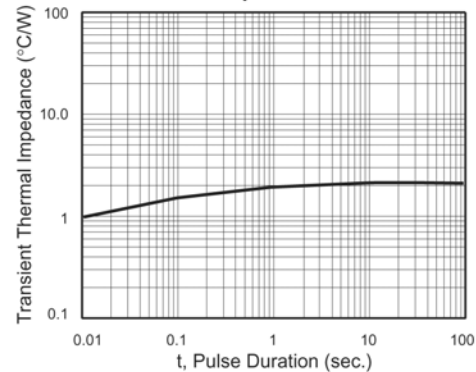


Fig. 6 - Typical Transient Thermal Impedance



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