

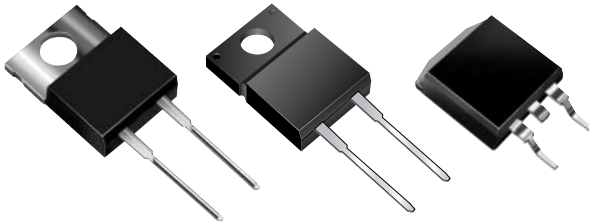


MBR16xx, MBRF16xx & MBRB16xx Series

Vishay Semiconductors
formerly General Semiconductor

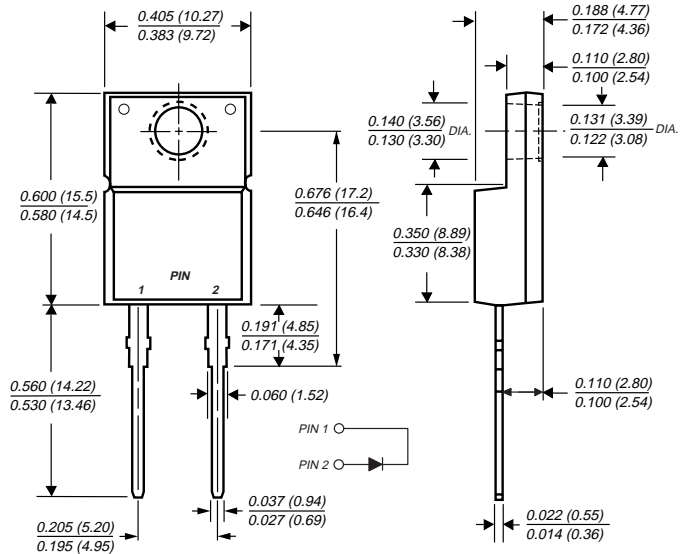
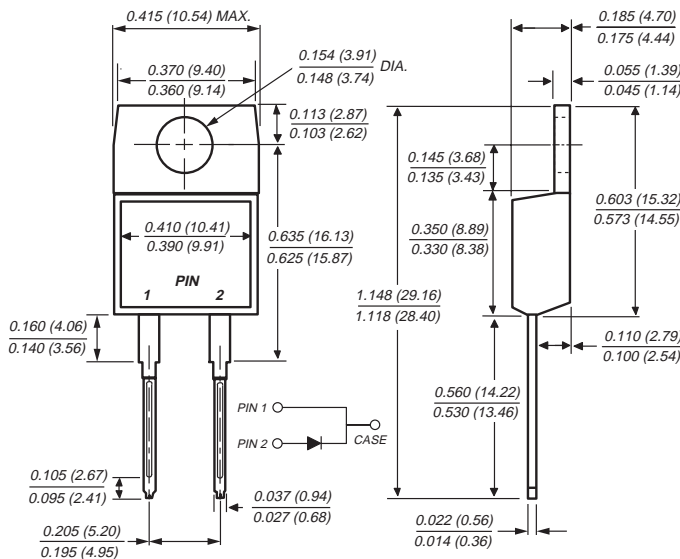
Schottky Barrier Rectifier

Reverse Voltage 35 to 60V
Forward Current 16A

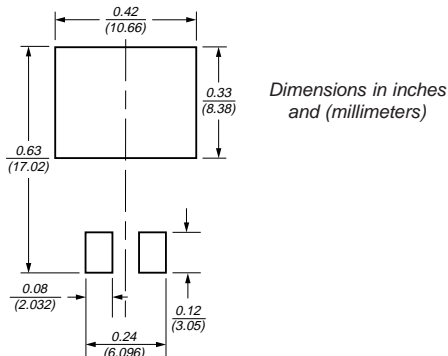


TO-220AC (MBR16xx)

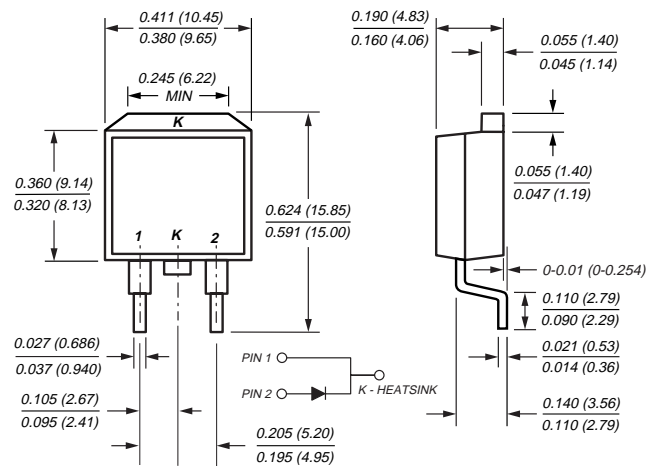
ITO-220AC (MBRF16xx)



Mounting Pad Layout TO-263AB



TO-263AB (MBRB16xx)



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 oz., 2.24 g

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Maximum Ratings (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR1635	MBR1645	MBR1650	MBR1660	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Working peak reverse voltage	V _{RWM}	35	45	50	60	V
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V
Maximum average forward rectified current at T _C = 125 °C	I _{F(AV)}	16				A
Peak repetitive forward current at T _C = 125°C (rated V _R , sq. wave, 20 KHz)	I _{FRM}	32				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	150				A
Peak repetitive reverse current 2.0μs, 1KHz	I _{RRM}	1.0		0.5		at t _p
Voltage rate of change (rated V _R)	dv/dt	10,000		1,000		V/μs
Operating junction temperature range	T _J	-65 to +150				°C
Storage temperature range	T _{STG}	-65 to +175				°C
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)				V

Electrical Characteristics (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR1635	MBR1645	MBR1650	MBR1660	Unit
Maximum instantaneous forward voltage (Note 4) at I _F = 16A, T _C = 25°C at I _F = 16A, T _C = 125°C	V _F	0.63		0.75		V
Maximum instantaneous reverse current T _C = 25°C at rated DC blocking voltage (Note 4) T _C = 125°C	I _R	0.2		1.0		mA
		40		50		

Thermal Characteristics (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Typical thermal resistance from junction to case	R _{θJC}	1.5	3.0	1.5	°C/W

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: 300μs pulse width, 1% duty cycle

Ordering Information

Product	Case	Package Code	Package Option
MBR1635 - MBR1660	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRF1635 - MBRF1660	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRB1635 - MBRB1660	TO-263AB	31	13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton
		81	Anti-Static 13" reel, 800/reel, 4.8K/carton



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

Fig. 1 - Forward Current Derating Curve

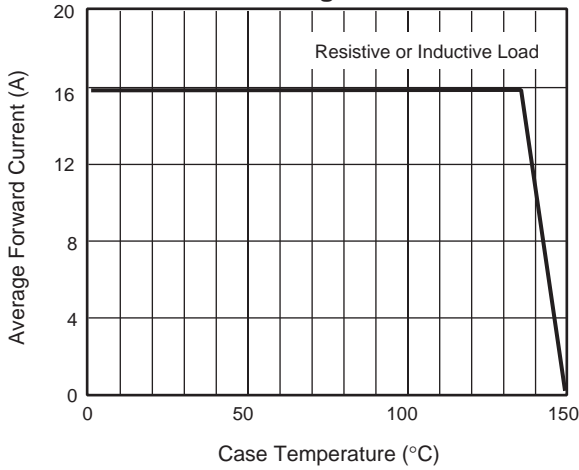


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

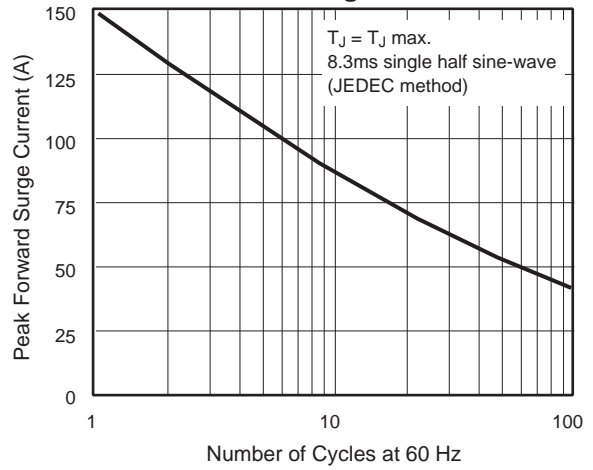


Fig. 3 - Typical Instantaneous Forward Characteristics

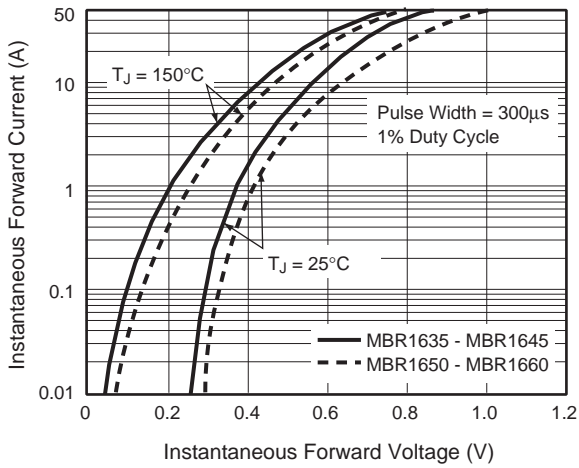


Fig. 4 - Typical Reverse Characteristics

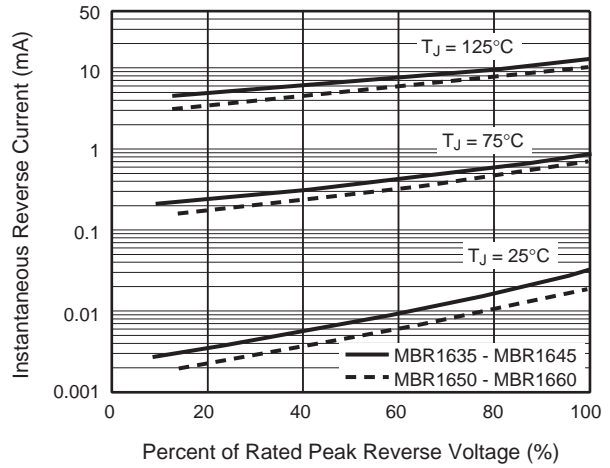


Fig. 5 - Typical Junction Capacitance

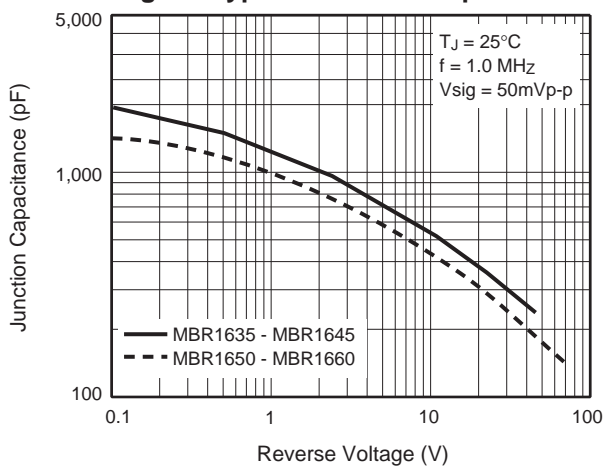


Fig. 6 - Typical Transient Thermal Impedance

