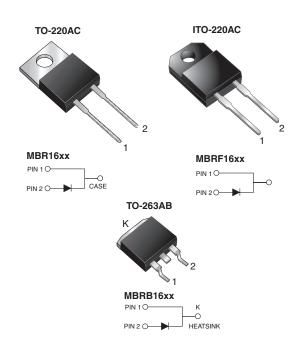


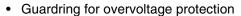
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Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS					
I _{F(AV)}	16 A				
V _{RRM}	35 V to 60 V				
I _{FSM}	150 A				
V _F	0.57 V, 0.65 V				
T _J max.	150 °C				

FEATURES





- Lower power losses, high efficiency
- Low forward voltage drop
- RoH9
- · High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AC and ITO-220AC package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters and polarity protection application.

MECHANICAL DATA

Case: TO-220AC, ITO-220AC, TO-263AB Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

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)}		Α				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150				Α	
Peak repetitive reverse current at t _p = 2.0 μs, 1 kHz	I _{RRM}	1.0 0.5			Α		
Voltage rate of change (rated V _R)	dV/dt	10 000			V/μs		
Operating junction temperature range	T_J	- 65 to + 150			°C		
Storage temperature range	T _{STG}	- 65 to + 175			°C		
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V _{AC}	1500			V		

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MBR(F,B)1635 thru MBR(F,B)1660

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)										
PARAMETER	TEST CO	ONDITIONS	SYMBOL MBR1635 MBR1645		MBR1650	MBR1660	UNIT			
Maximum instantaneous forward voltage (1)	I _F = 16 A I _F = 16 A	$T_C = 25 ^{\circ}C$ $T_C = 125 ^{\circ}C$	V _F	0.63 0.57					V	
Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾		T _C = 25 °C T _C = 125 °C	I _R	0.2 40		-		1 5	.0 0	mA

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT	
Typical thermal resistance from junction to case	$R_{\theta JC}$	1.5	3.0	1.5	°C/W	

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
TO-220AC	MBR1645-E3/45	1.80	45	50/tube	Tube			
ITO-220AC	MBRF1645-E3/45	1.94	45	50/tube	Tube			
TO-263AB	MBRB1645-E3/45	1.33	45	50/tube	Tube			
TO-263AB	MBRB1645-E3/81	1.33	81	800/reel	Tape reel			
TO-220AC	MBR1645HE3/45 (1)	1.80	45	50/tube	Tube			
ITO-220AC	MBRF1645HE3/45 (1)	1.94	45	50/tube	Tube			
TO-263AB	MBRB1645HE3/45 ⁽¹⁾	1.33	45	50/tube	Tube			
TO-263AB	MBRB1645HE3/81 (1)	1.33	81	800/reel	Tape reel			

Note:

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

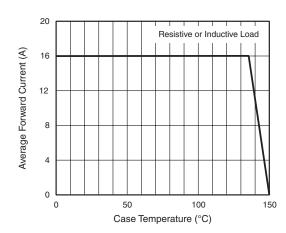


Figure 1. Forward Current Derating Curve

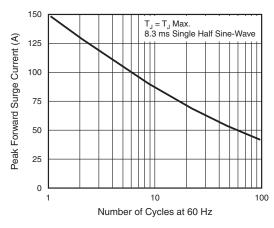


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

⁽¹⁾ Automotive grade AEC Q101 qualified





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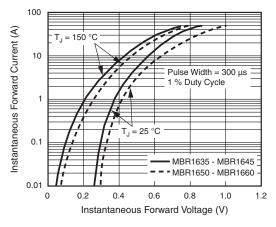


Figure 3. Typical Instantaneous Forward Characteristics

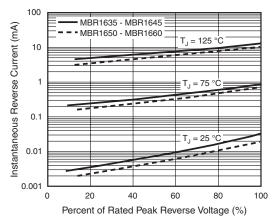


Figure 4. Typical Reverse Characteristics

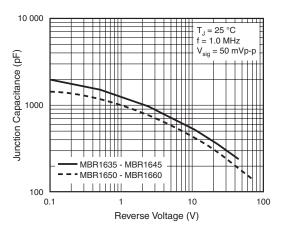


Figure 5. Typical Junction Capacitance

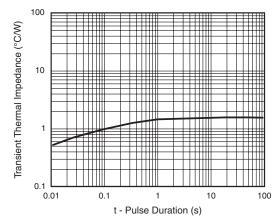


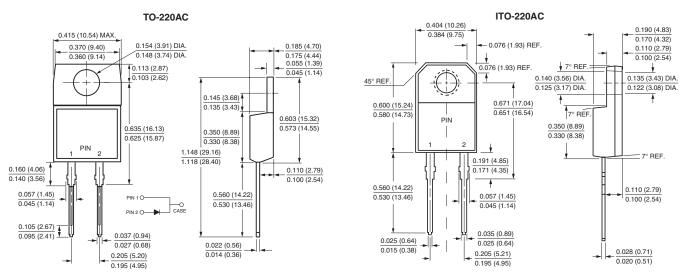
Figure 6. Typical Transient Thermal Impedance

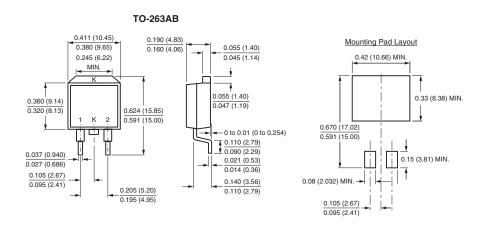
MBR(F,B)1635 thru MBR(F,B)1660

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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