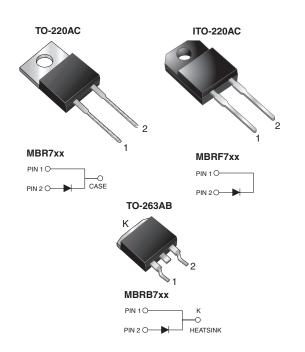


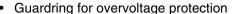
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Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS					
I _{F(AV)}	7.5 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





Low forward voltage drop

· High forward surge capability

High frequency operation

ROHS COMPLIANT

- 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 or 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	MBR735	MBR745	MBR750	MBR760	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V	
Working peak reverse voltage	V_{RWM}	35	45	50	60	٧	
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V	
Maximum average forward rectified current (Fig. 1)	I _{F(AV)}	7.5				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		.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		

MBR(F,B)735 thru MBR(F,B)760

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS SYMBOL ME		MBR735	MBR745	MBR750	MBR760	UNIT			
Maximum instantaneous forward voltage (1)	I⊏ = 15 A		V _F	- 0.57 0.84 0.72		0.75 0.65 - -		٧		
Maximum reverse current at DC blocking voltage		T _C = 25 °C T _C = 125 °C	I _R	0.1 15		-		0 5	.5 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						
Thermal resistance from junction to case	$R_{ heta JC}$	3.0	5.0	3.0	°C/W	

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
TO-220AC	MBR745-E3/45	1.80	45	50/tube	Tube			
ITO-220AC	MBRF745-E3/45	1.94	45	50/Tube	Tube			
TO-263AB	MBRB745-E3/45	1.33	45	50/Tube	Tube			
TO-263AB	MBRB745-E3/81	1.33	81	800/reel	Tape reel			
TO-220AC	MBR745HE3/45 ⁽¹⁾	1.80	45	50/tube	Tube			
ITO-220AC	MBRF745HE3/45 (1)	1.94	45	50/Tube	Tube			
TO-263AB	MBRB745HE3/45 (1)	1.33	45	50/Tube	Tube			
TO-263AB	MBRB745HE3/81 (1)	1.33	81	800/reel	Tape reel			

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

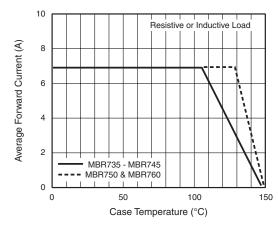


Figure 1. Forward Current Derating Curve

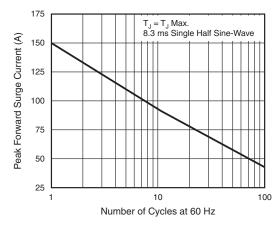


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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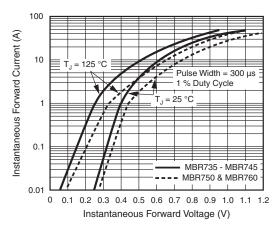


Figure 3. Typical Instantaneous Forward Characteristics

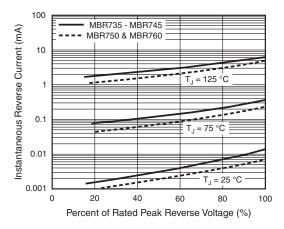


Figure 4. Typical Reverse Characteristics

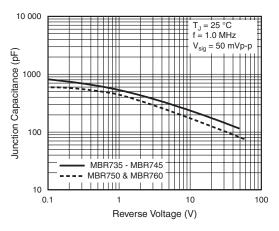


Figure 5. Typical Junction Capacitance

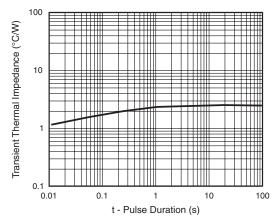


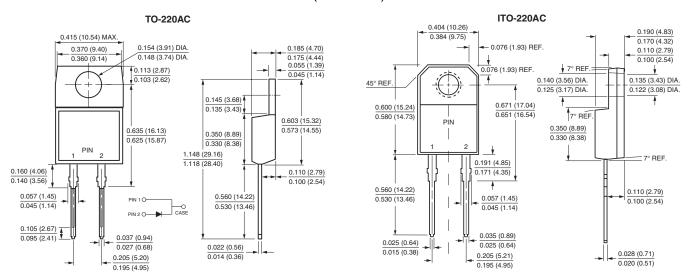
Figure 6. Typical Transient Thermal Impedance

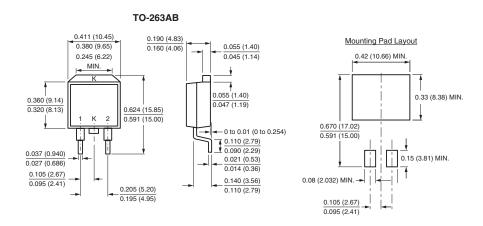
MBR(F,B)735 thru MBR(F,B)760

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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