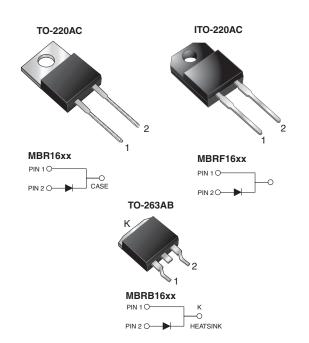
MBR(F,B)1635 thru MBR(F,B)1660

Vishay General Semiconductor

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

- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- · 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 bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-220AC, ITO-220AC, TO-263AB

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix

meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PARAMETER	SYMBOL	MBR1635	MBR1645	MBR1650	MBR1660	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60		
Working peak reverse voltage	V _{RWM}	35	45	50	60	V	
Maximum DC blocking voltage	V_{DC}	35	45	50	60		
Maximum average forward rectified current at $T_C = 125$ °C	I _{F(AV)}	16					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150				А	
Peak repetitive reverse current at $t_p = 2.0 \mu s$, 1 kHz	I _{RRM}	1.0 0.5			.5		
Voltage rate of change (rated V _R)	dV/dt	10 000				V/µs	
Operating junction temperature range	TJ	- 65 to + 150					
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)1635 thru MBR(F,B)1660

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	TEST CONDITIONS		MBR1635	MBR1645	MBR1650	MBR1660	UNIT
Maximum instantaneous forward voltage	V _F ⁽¹⁾	I _F = 16 A	T _C = 25 °C	0.63		0.75		V
waximum instantaneous forward voltage		I _F = 16 A	T _C = 125 °C	0.57		0.65		v
Maximum instantaneous reverse current at DC blocking voltage	I _R ⁽¹⁾	Rated V _R	T _C = 25 °C	0.2		1.0		mA
			T _C = 125 °C	4	0	5	0	IIIA

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms

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 and 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 and reel		

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

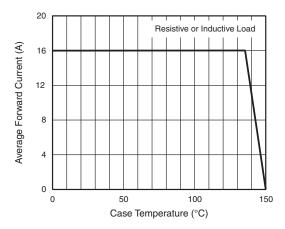


Fig. 1 - Forward Current Derating Curve

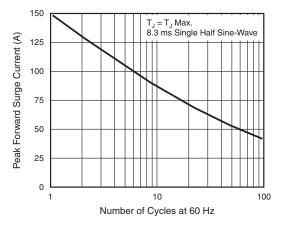


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

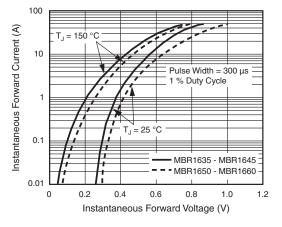


Fig. 3 - Typical Instantaneous Forward Characteristics

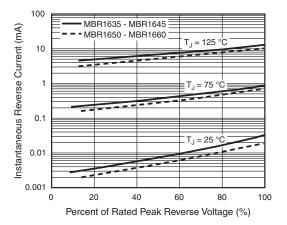


Fig. 4 - Typical Reverse Characteristics

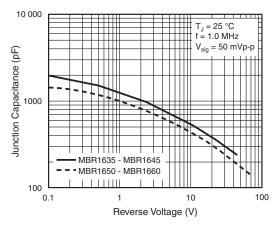


Fig. 5 - Typical Junction Capacitance

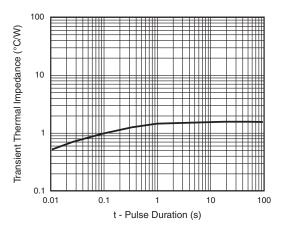


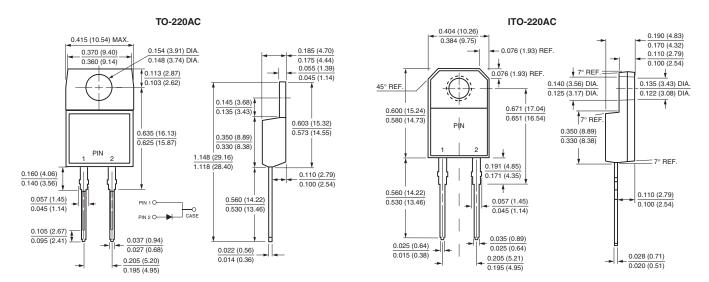
Fig. 6 - Typical Transient Thermal Impedance



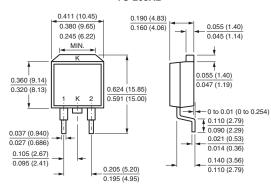
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



TO-263AB



0.42 (10.66) MIN. 0.47 (10.66) MIN. 0.33 (8.38) MIN. 0.670 (17.02) 0.591 (15.00) 0.008 (2.032) MIN. 0.105 (2.67) 0.095 (2.41)



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Revision: 02-Oct-12 Document Number: 91000