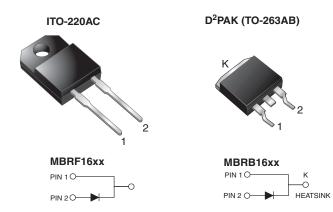


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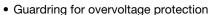
Schottky Barrier Rectifier



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				
Package	ITO-220AC, D ² PAK (TO-263AB)				
Circuit configuration	Single				

FEATURES

Power pack





- 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 D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for ITO-220AC package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

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: ITO-220AC, D2PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/NHE3_X - RoHS-compliant, AEC-Q101 qualified ("_X" denotes revision code, e.g. A, B, ...)

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	MBRB1635	MBRB1645	MBRB1660	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	60	V	
Working peak reverse voltage	V_{RWM}	35	45	60		
Maximum DC blocking voltage	V_{DC}	35	45	60		
Maximum average forward rectified current at T _C = 125 °C	I _{F(AV)}	16			А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150				
Peak repetitive reverse current at t _p = 2.0 μs, 1 kHz	I _{RRM}	1.0		0.5		
Voltage rate of change (rated V _R)	dV/dt	10 000			V/µs	
Operating junction temperature range	TJ	-65 to +150			°C	
Storage temperature range	T _{STG}	-65 to +175				
Isolation voltage (ITO-220AC only) from terminal to heatsink $t = 1$ min	V _{AC}	1500			٧	



MBRF16xx, MBRB16xx

Vishay General Semiconductor

ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	TEST CO	ONDITIONS	MBRB1635	MBRB1645	MBRB1660	UNIT	
Maximum instantaneous forward voltage	V _F ⁽¹⁾	I _F = 16 A	T _C = 25 °C	0.63		0.75	V	
		I _F = 16 A	T _C = 125 °C	0.57		0.65		
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	50	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	MBRF	MBRB	UNIT		
Typical thermal resistance from junction to case	$R_{ heta JC}$	3.0	1.5	°C/W		

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
ITO-220AC	MBRF1645-E3/45	1.94	45	50/tube	Tube		
TO-263AB	MBRB1645-E3/45 (2)	1.33	45	50/tube	Tube		
TO-263AB	MBRB1645-E3/81 (2)	1.33	81	800/reel	Tape and reel		
ITO-220AC	MBRF1645HE3_A/P (1)	1.94	Р	50/tube	Tube		
TO-263AB	MBRB1645HE3_B/P (1)(2)	1.33	Р	50/tube	Tube		
TO-263AB	MBRB1645HE3_B/I (1)(2)	1.33	I	800/reel	Tape and reel		

Note

(1) AEC-Q101 qualified

(2) 60 V available in D2PAK (TO-263AB) package only

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RATINGS AND CHARACTERISTICS CURVES (T_C = 25 °C unless otherwise noted)

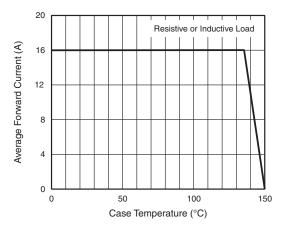


Fig. 1 - Forward Current Derating Curve

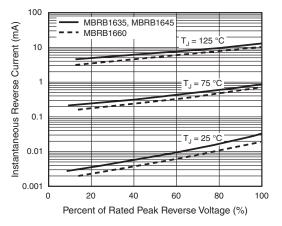


Fig. 4 - Typical Reverse Characteristics

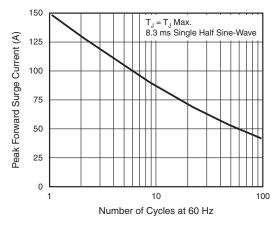


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

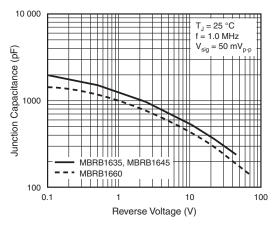


Fig. 5 - Typical Junction Capacitance

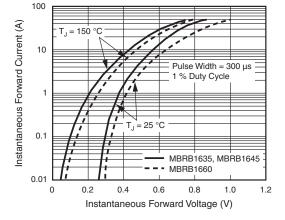


Fig. 3 - Typical Instantaneous Forward Characteristics

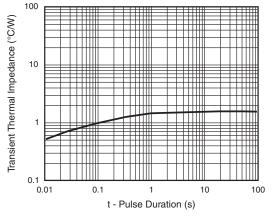


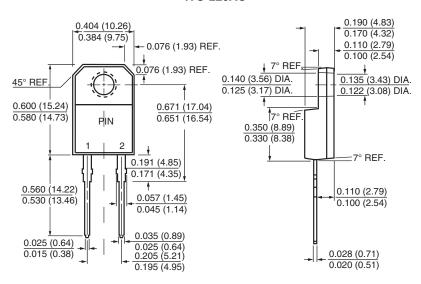
Fig. 6 - Typical Transient Thermal Impedance



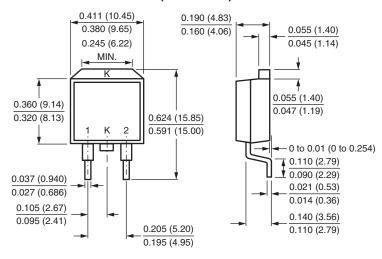
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

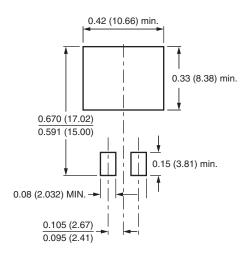
ITO-220AC



D²PAK (TO-263AB)



Mounting Pad Layout





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