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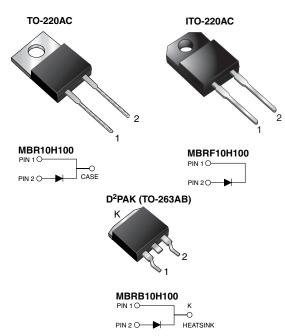
Vishay General Semiconductor

HALOGEN

FREE

High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS						
I _{F(AV)}	10 A					
V_{RRM}	100 V					
I _{FSM}	250 A					
V_{F}	0.64 V					
I _R	4.5 μA					
T _J max.	175 °C					
Package	TO-220AC, ITO-220AC, D ² PAK (TO-263AB)					
Circuit configurations	Single					

FEATURES

- Power pack
- · Guardring for overvoltage protection
- · Low power loss, high efficiency
- Low forward voltage drop
- · Low leakage current
- 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)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

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

MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - RoHS-compliant, halogen-free, commercial

grade

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)					
PARAMETER		MBR10H100 MBRB10H100 MBRF10H100	UNIT		
Maximum repetitive peak reverse voltage	V_{RRM}	100			
Working peak reverse voltage	V_{RWM}	100	V		
Maximum DC blocking voltage	V_{DC}	100	1		
Maximum average forward rectified current	I _{F(AV)}	10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	250	Α		
Peak repetitive reverse current at t _p = 2.0 µs, 1 kHz	I _{RRM}	0.5	1		
Voltage rate of change (rated V _R)	dV/dt	10 000	V/µs		
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +175	°C		
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V _{AC}	1500	V		



MBR10H100, MBRF10H100, MBRB10H100

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	TEST CO	NDITIONS	VALUE	UNIT	
Maximum instantaneous forward voltage	V _F (1)	I _F = 10 A	T _C = 25 °C	0.77	V	
		I _F = 10 A	T _C = 125 °C	0.64		
		I _F = 20 A	T _C = 25 °C	0.88		
		I _F = 20 A	T _C = 125 °C	0.73		
Maximum reverse current	I _R ⁽²⁾	Rated V _R	T _J = 25 °C	4.5	μA	
			T _J = 125 °C	6.0	mA	

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	MBR10H100	MBRF10H100	MBRB10H100	UNIT
Typical thermal resistance	$R_{ heta JC}$	2.7	5.8	2.7	°C/W

ORDERING INFORMATION						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AC	MBR10H100-E3/45	1.80	45	50/tube	Tube	
ITO-220AC	MBRF10H100-E3/45	1.94	45	50/tube	Tube	
D ² PAK (TO-263AB)	MBRB10H100-M3/I	1.33	I	800/reel	Tape and reel	



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

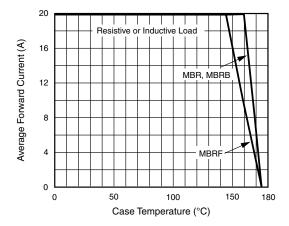


Fig. 1 - Forward Current Derating Curve

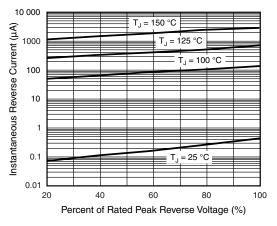


Fig. 4 - Typical Reverse Characteristics

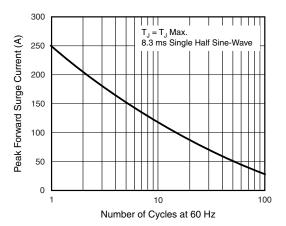


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

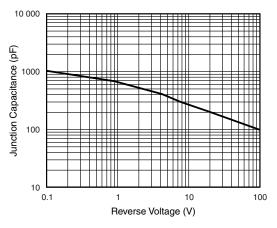


Fig. 5 - Typical Junction Capacitance

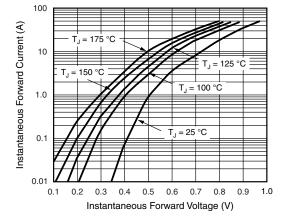


Fig. 3 - Typical Instantaneous Forward Characteristics

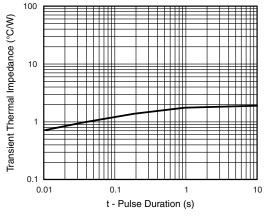


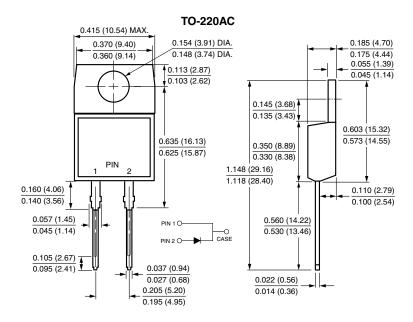
Fig. 6 - Typical Transient Thermal Impedance



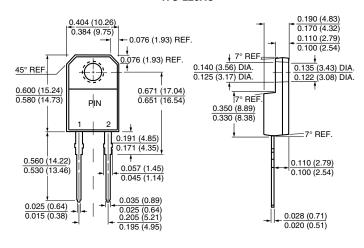


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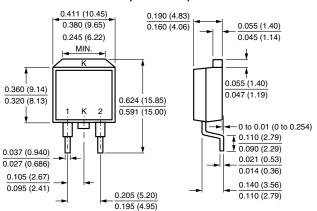
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



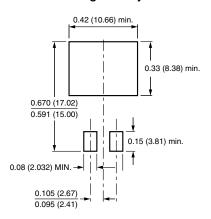
ITO-220AC



D²PAK (TO-263AB)



Mounting Pad Layout





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