

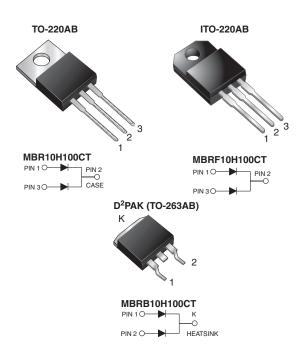
MBR10H100CT, MBRF10H100CT, MBRB10H100CT

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Vishay General Semiconductor

Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



DESIGN SUPPORT TOOLS

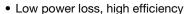
click logo to get started



PRIMARY CHARACTERISTICS						
I _{F(AV)}	2 x 5 A					
V_{RRM}	100 V					
I _{FSM} 150 A						
V _F	0.61 V					
I _R	3.5 μA					
T _J max.	175 °C					
Package	TO-220AC, ITO-220AC, D ² PAK (TO-263AB)					
Circuit configurations	Common cathode					

FEATURES

- Power pack
- · Guardring for overvoltage protection



- 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-220AB and ITO-220AB package)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MECHANICAL DATA

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

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

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 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			MBR10H100CT	UNIT		
Maximum repetitive peak reverse voltage		V_{RRM}	100			
Working peak reverse voltage			100	V		
Maximum DC blocking voltage			100			
Maximum average forward rectified current	total device	I	10	A		
at T _C = 105 °C	per diode	I _{F(AV)}	5.0			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode			150	4		
Peak repetitive reverse current per diode at t _p = 2.0 μs, 1 kHz			0.5			
Voltage rate of change (rated V _R)			10 000	V/µs		
Operating junction and storage temperature range			-65 to +175	°C		
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min		V_{AC}	1500	V		



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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	TEST CONDITIONS		VALUE	UNIT		
Maximum instantaneous forward voltage per diode	V _F ⁽¹⁾	I _F = 5 A	T _J = 25 °C	0.76	V		
		I _F = 5 A	T _J = 125 °C	0.61			
		I _F = 10 A	T _J = 25 °C	0.85			
		I _F = 10 A	T _J = 125 °C	0.71			
Maximum rayaraa ayyrant par diada	I _R ⁽¹⁾	Rated V _R	T _J = 25 °C	3.5	μA		
Maximum reverse current per diode			T _J = 100 °C	4.5	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	MBR	MBRF	MBRB	UNIT
Typical thermal resistance per diode	$R_{ heta JC}$	2.2	5.2	2.2	°C/W

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	MBR10H100CT-E3/45	1.85	45	50/tube	Tube		
ITO-220AB	MBRF10H100CT-E3/45	1.79	45	50/tube	Tube		
TO-263AB	MBRB10H100CT-E3/45	1.35	45	50/tube	Tube		
TO-263AB	MBRB10H100CT-E3/81	1.35	81	800/reel	Tape and reel		

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

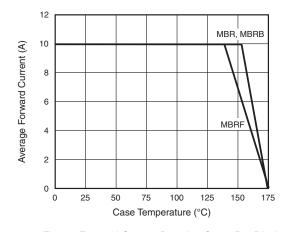


Fig. 1 - Forward Current Derating Curve Per Diode

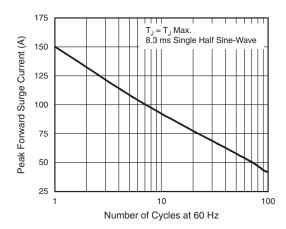


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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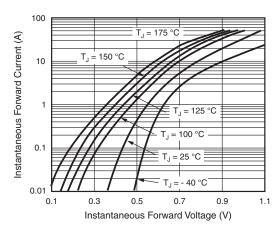
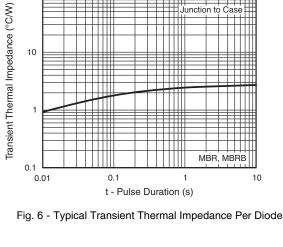


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



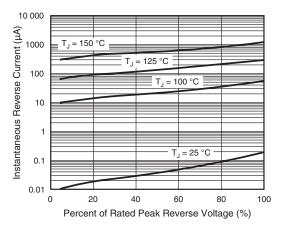


Fig. 4 - Typical Reverse Characteristics Per Diode

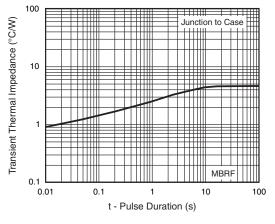


Fig. 7 - Typical Transient Thermal Impedance Per Diode

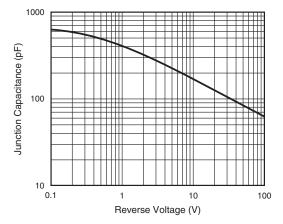


Fig. 5 - Typical Junction Capacitance Per Diode

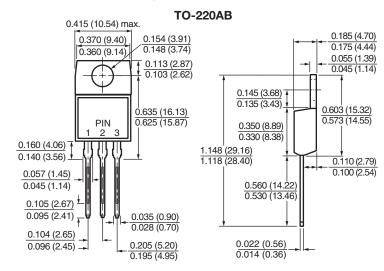


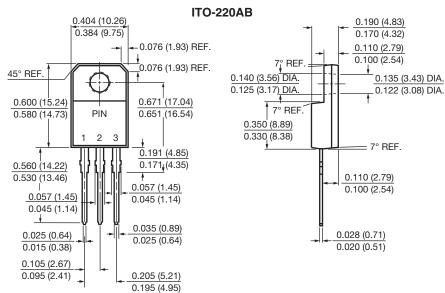


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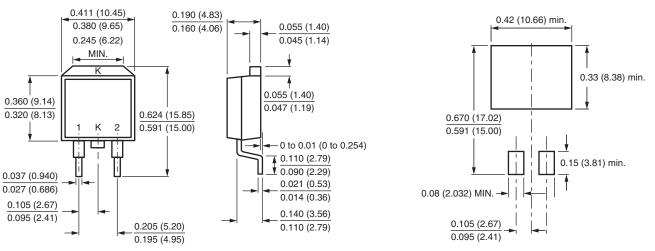
PACKAGE OUTLINE DIMENSIONS in inches (millimeters





D²PAK (TO-263AB)

Mounting Pad Layout



Revision: 08-Jun-2018 4 Document Number: 88668

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