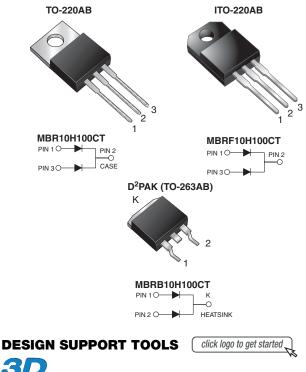
Vishay General Semiconductor

Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance





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 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-220AB and ITO-220AB 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, 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 ($T_C = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER			MBR10H100CT	UNIT		
Maximum repetitive peak reverse voltage	V _{RRM}	100				
Working peak reverse voltage			100	V		
Maximum DC blocking voltage	V _{DC}	100				
Maximum average forward rectified current	total device	I =	10	Α		
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	~		
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 reverse current per diode	I _R ⁽¹⁾	Rated V _R	T _J = 25 °C	3.5	μA	
			T _J = 100 °C	4.5	mA	

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 per diode	$R_{ ext{ heta}JC}$	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)

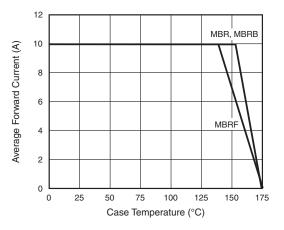


Fig. 1 - Forward Current Derating Curve Per Diode

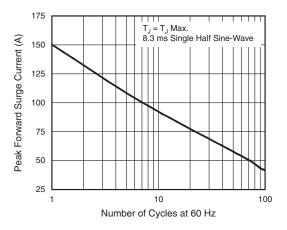


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



MBR10H100CT, MBRF10H100CT, MBRB10H100CT

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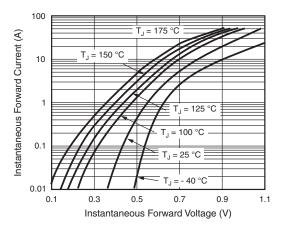


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

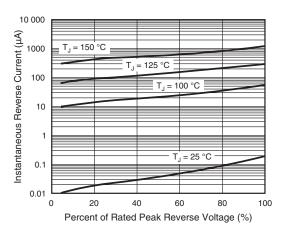


Fig. 4 - Typical Reverse Characteristics Per Diode

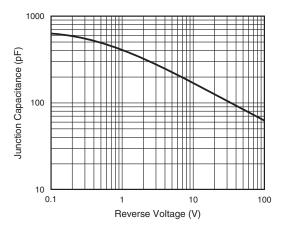


Fig. 5 - Typical Junction Capacitance Per Diode

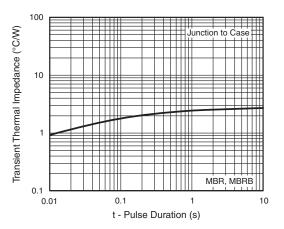


Fig. 6 - Typical Transient Thermal Impedance Per Diode

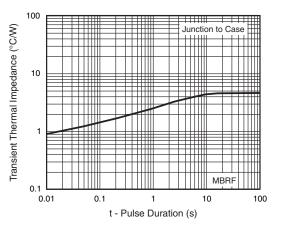


Fig. 7 - Typical Transient Thermal Impedance Per Diode

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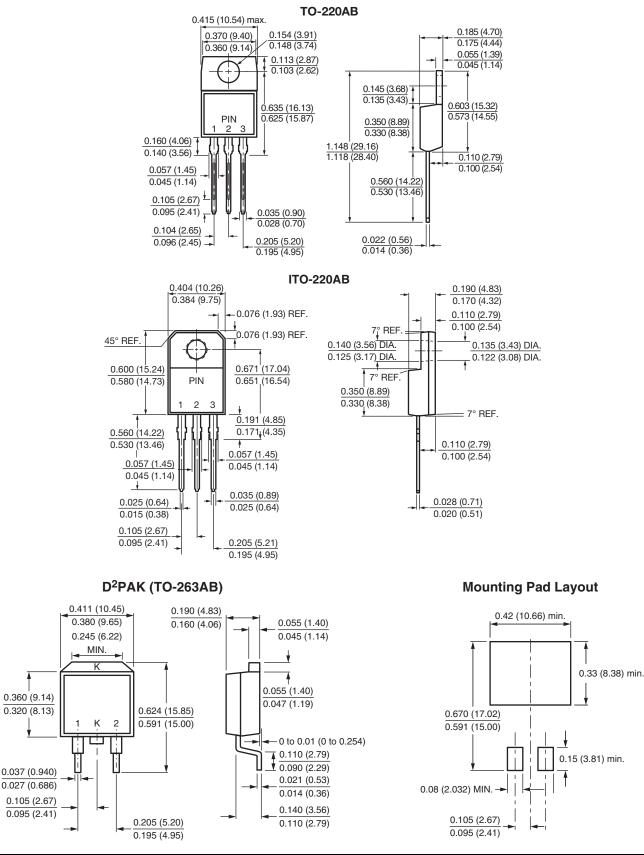
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters

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