

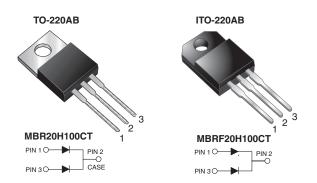


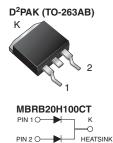
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Vishay General Semiconductor

Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance





DESIGN SUPPORT TOOLS

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PRIMARY CHARACTERISTICS						
2 x 10 A						
100 V						
250 A						
4.5 μA						
0.64 V						
175 °C						
TO-220AB, ITO-220AB, D ² PAK (TO-263AB)						
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 _A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	MBR20H100CT	UNIT		
Maximum repetitive peak reverse voltage		V_{RRM}	100			
Working peak reverse voltage		V_{RWM}	100	V		
Maximum DC blocking voltage		V_{DC}	100			
Maximum average forward rectified current	total device	I _{F(AV)}	20	A		
Maximum average forward rectilled current	per diode		10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load			250	А		
Peak repetitive reverse current per diode at t_p = 2.0 μ s, 1 kHz	I _{RRM}	1.0				
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-220AB only) from terminal to heatsink t = 1 min		V_{AC}	1500	V		

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MBR20H100CT, MBRF20H100CT, MBRB20H100CT

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	TEST CO	NDITIONS	VALUE	UNIT	
Maximum instantaneous forward voltage per diode	V _F ⁽¹⁾	I _F = 10 A	T _C = 25 °C	0.77		
		I _F = 10 A	T _C = 125 °C	0.64	V	
		I _F = 20 A	T _C = 25 °C	0.88		
		I _F = 20 A	T _C = 125 °C	0.73		
Maximum reverse current at working peak reverse voltage per diode	I _R ⁽²⁾	I _R ⁽²⁾ Rated V _R -	T _J = 25 °C	4.5	μΑ	
			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 _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT	
Typical thermal resistance per diode	$R_{ heta JC}$	2.0	5.8	2.0	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	MBR20H100CT-E3/45	1.85	45	50/tube	Tube		
ITO-220AB	MBRF20H100CT-E3/45	1.99	45	50/tube	Tube		
TO-263AB	MBRB20H100CT-E3/45	1.35	45	50/tube	Tube		
TO-263AB	MBRB20H100CT-E3/81	1.35	81	800/reel	Tape and reel		



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

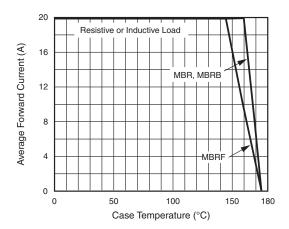


Fig. 1 - Forward Current Derating Curve

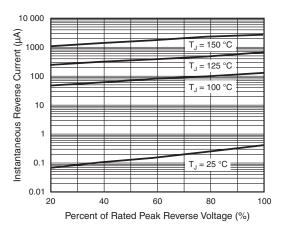


Fig. 4 - Typical Reverse Characteristics Per Diode

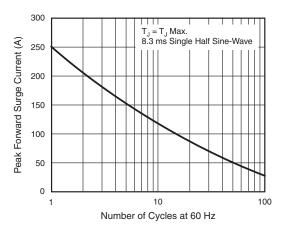


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

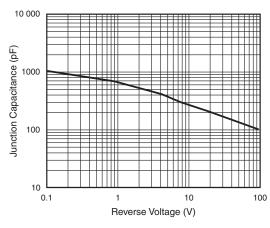


Fig. 5 - Typical Junction Capacitance Per Diode

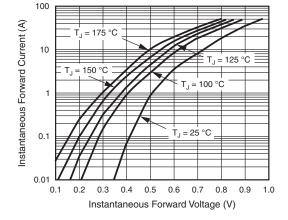


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

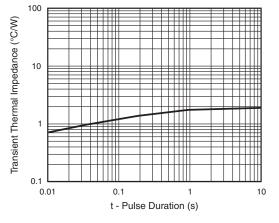


Fig. 6 - Typical Transient Thermal Impedance Per Diode

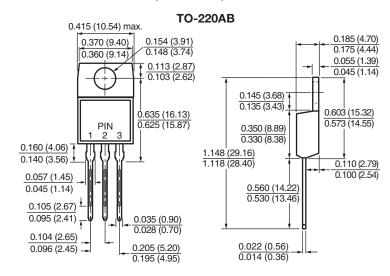


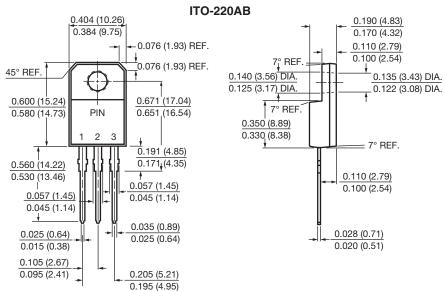


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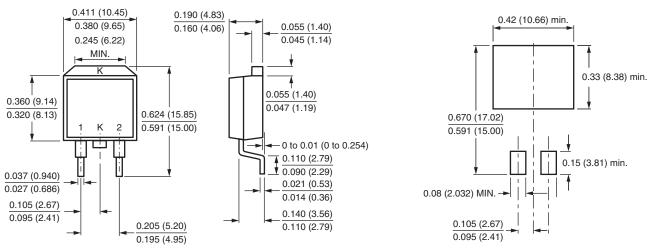
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





D²PAK (TO-263AB)

Mounting Pad Layout



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