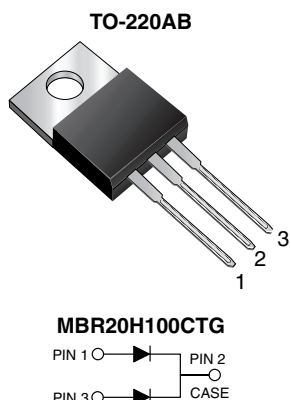


# Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



## FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max., 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** TO-220AB

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
$V_{RRM}$	100 V
$I_{FSM}$	150 A
$V_F$	0.70 V
$I_R$	3.5 $\mu$ A
$T_J$ max.	175 °C
Package	TO-220AB
Circuit configuration	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MBR20H100CTG	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Working peak reverse voltage	$V_{RWM}$	100	V
Maximum DC blocking voltage	$V_{DC}$	100	V
Maximum average forward rectified current $T_C = 150\text{ °C}$	$I_{F(AV)}$	20	A
		10	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	150	A
Peak repetitive reverse current per diode at $t_p = 2\text{ }\mu$ s, 1 kHz	$I_{RRM}$	0.5	A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000	V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175	°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	TEST CONDITIONS		TYP.	MAX.	UNIT
Maximum instantaneous forward voltage per diode	V <sub>F</sub> <sup>(1)</sup>	I <sub>F</sub> = 10 A	T <sub>J</sub> = 25 °C	0.80	0.85	V
		I <sub>F</sub> = 10 A	T <sub>J</sub> = 125 °C	0.64	0.70	
		I <sub>F</sub> = 20 A	T <sub>J</sub> = 25 °C	0.87	0.93	
		I <sub>F</sub> = 20 A	T <sub>J</sub> = 125 °C	0.74	0.80	
Maximum reverse current per diode at working peak reverse voltage	I <sub>R</sub> <sup>(1)</sup>		T <sub>J</sub> = 25 °C	-	3.5	μA
			T <sub>J</sub> = 125 °C	-	4.5	mA

**Note**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MBR	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR20H100CTG-E3/45	1.85	45	50/tube	Tube

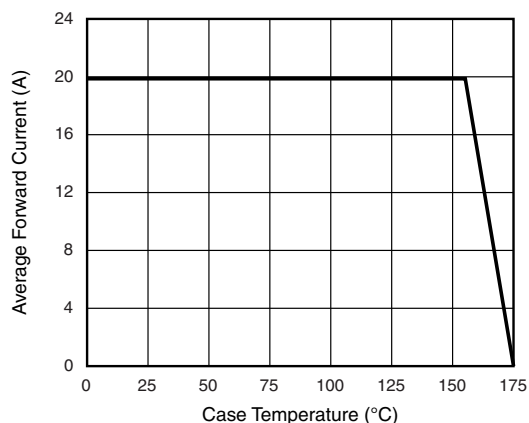
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Derating Curve

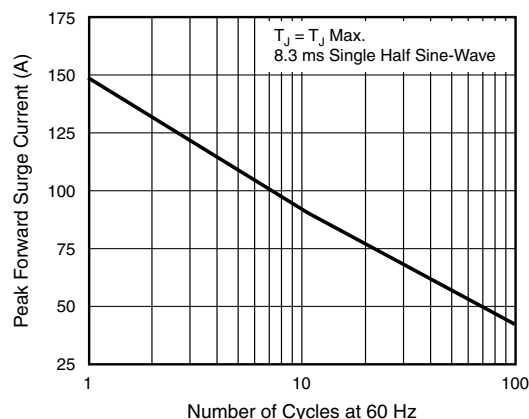


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

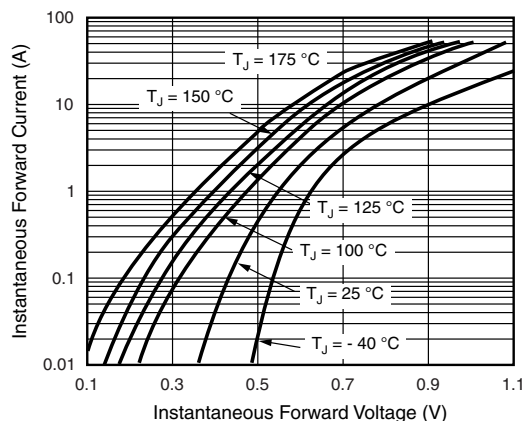


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

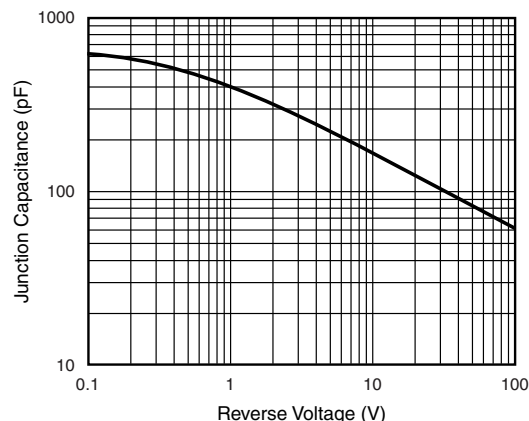


Fig. 5 - Typical Junction Capacitance Per Diode

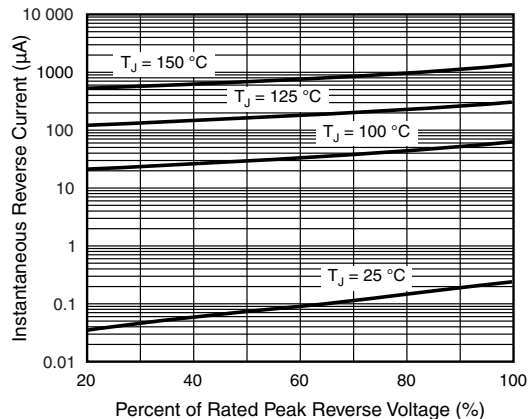


Fig. 4 - Typical Reverse Characteristics Per Diode

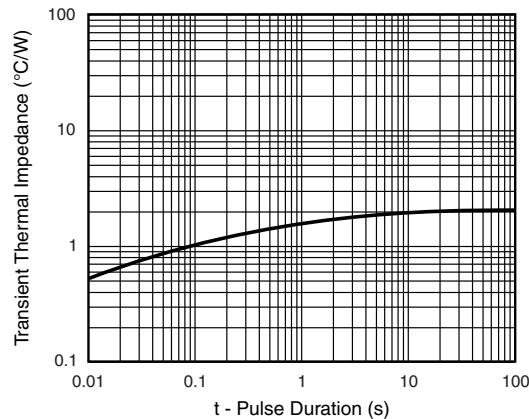
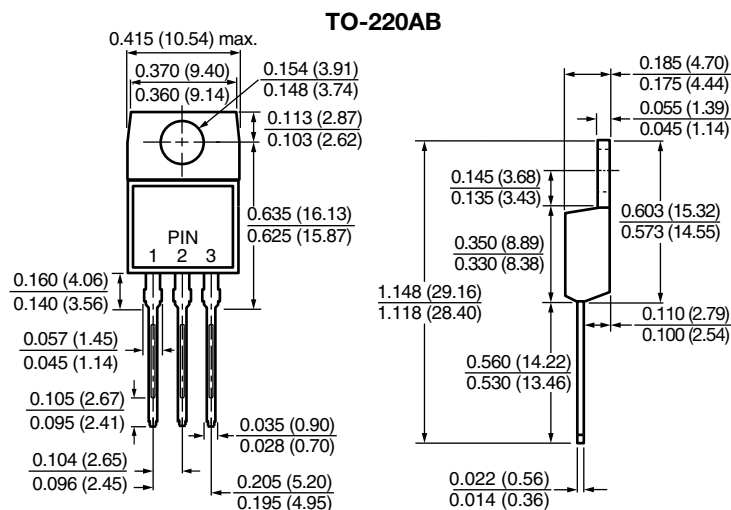


Fig. 6 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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