

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: MBRF10H100CTHE3/45
Manufacturer: Vishay General Semiconductor - Diodes Division
Package: Tube
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/mbrf10h100cthe3-45.html>



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Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

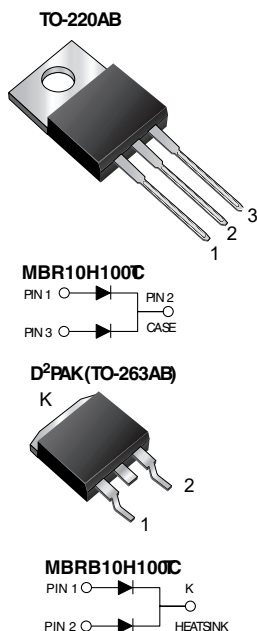
Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



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 package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
Available

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, 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 (for TO-220AB package)

LINKS TO ADDITIONAL RESOURCES



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 μ A
T_J max.	175 °C
Package	TO-220AB, D ² PAK (TO-263AB)
Circuit configurations	Common cathode

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	MBR10H100CT MBRB10H100CT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Working peak reverse voltage	V_{RWM}	100	
Maximum DC blocking voltage	V_{DC}	100	
Maximum average forward rectified current at $T_C = 105$ °C	total device	10	A
	per diode	5.0	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150	
Peak repetitive reverse current per diode at $t_p = 2.0$ μ s, 1 kHz	I_{RRM}	0.5	
Voltage rate of change (rated V_R)	dV/dt	10 000	V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175	°C

**ELECTRICAL CHARACTERISTICS** ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS		VALUE	UNIT
Maximum instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 5\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.76	V
		$I_F = 5\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.61	
		$I_F = 10\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.85	
		$I_F = 10\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.71	
Maximum reverse current per diode	$I_R^{(1)}$	Rated V_R	$T_J = 25\text{ }^{\circ}\text{C}$	3.5	μA
			$T_J = 100\text{ }^{\circ}\text{C}$	4.5	mA

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
 (2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	MBR10H100CT	MBRB10H100CT	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.2	2.2	$^{\circ}\text{C/W}$

ORDERING INFORMATION

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR10H100CT-E3/45	1.85	45	50/tube	Tube
D ² PAK (TO-263AB)	MBRB10H100CT-M3/I	1.35	I	800/reel	Tape and reel

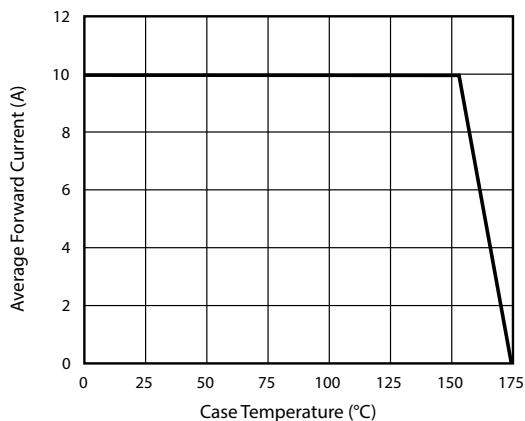
RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve Per Diode

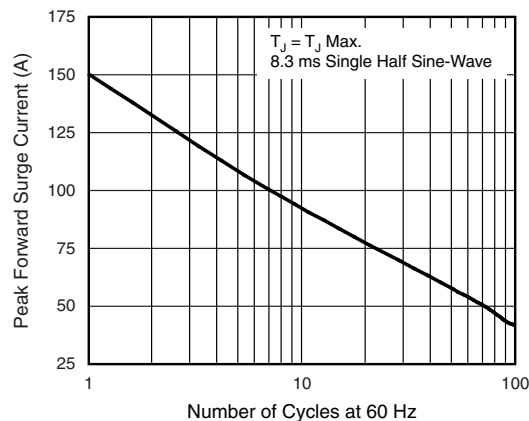


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

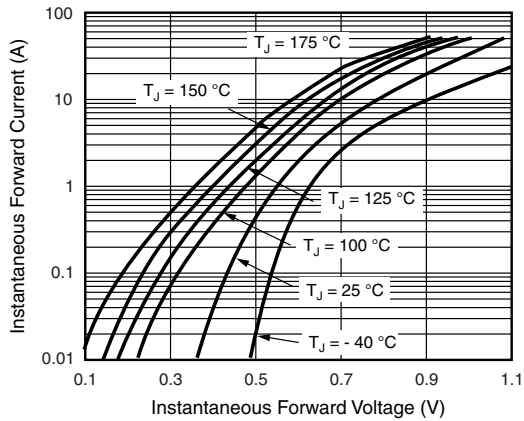


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

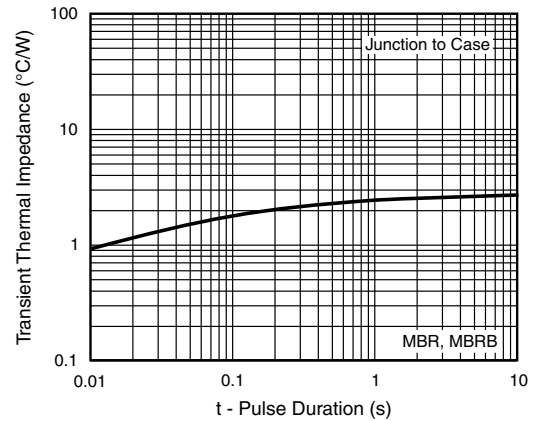


Fig. 6 - Typical Transient Thermal Impedance Per Diode

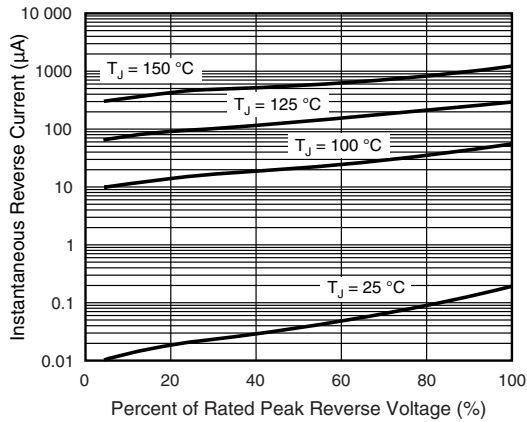


Fig. 4 - Typical Reverse Characteristics Per Diode

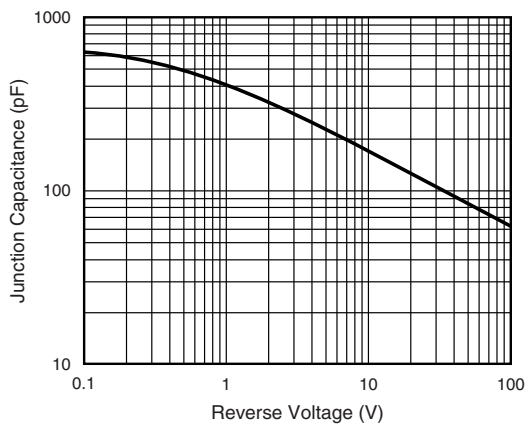
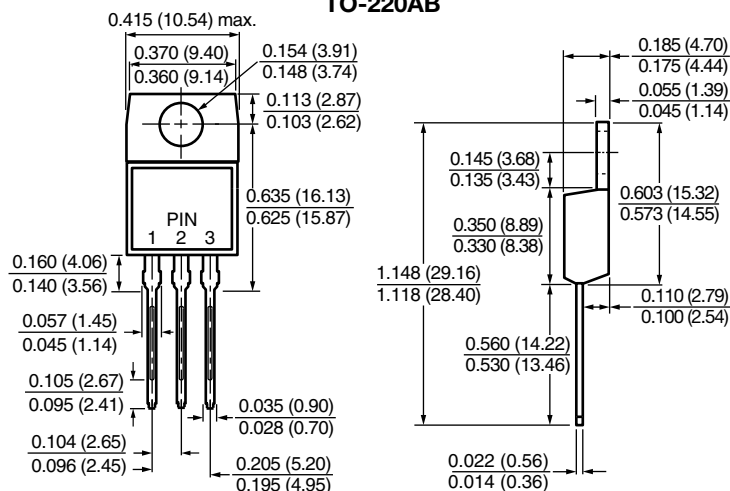


Fig. 5 - Typical Junction Capacitance Per Diode

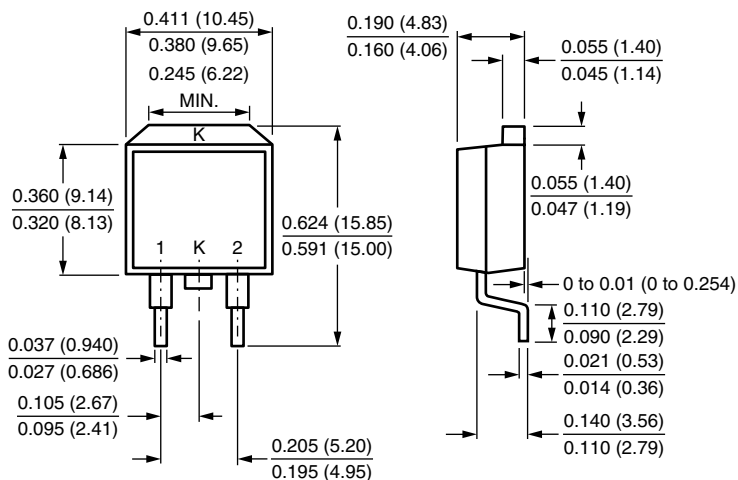


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

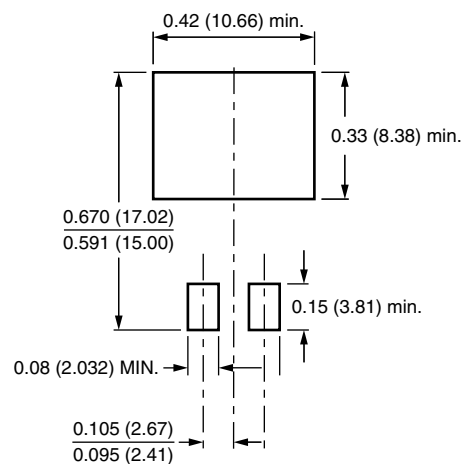
TO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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