

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: MBRB15H60CTHE3/45
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/mbrb15h60cthe3-45.html>



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New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

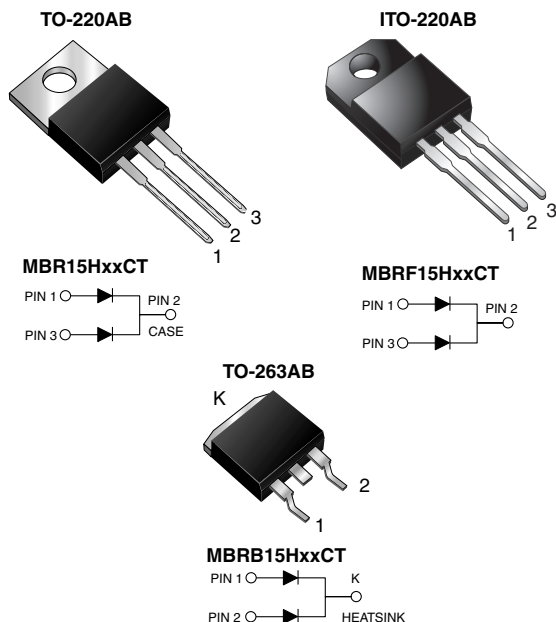
Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Dual Common Cathode 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 and ITO-220AB package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see 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, and polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 7.5 A
V_{RRM}	35 V to 60 V
I_{FSM}	150 A
V_F	0.55 V, 0.61 V
I_R	50 μ A
T_J max.	175 °C
Package	TO-220AB, ITO-220AB, TO-263AB
Diode variations	Common cathode

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

PARAMETER	SYMBOL	MBR15H35CT	MBR15H45CT	MBR15H50CT	MBR15H60CT	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Working peak reverse voltage	V _{RWM}	35	45	50	60	
Maximum DC blocking voltage	V _{DC}	35	45	50	60	
Maximum average forward rectified current (fig. 1) total device per diode	I _{F(AV)}	15				A
		7.5				
Non-repetitive avalanche energy at 25 °C, I _{AS} = 4 A, L = 10 mH per diode	E _{AS}	80				mJ
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	150				A
Peak repetitive reverse surge current per diode at t _p = 2.0 μs, 1 kHz	I _{RRM}	1.0		0.5		
Peak non-repetitive reverse energy (8/20 μs waveform)	E _{RSM}	20		10		mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 F, R = 1.5 kΩ	V _C	25				kV
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

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

PARAMETER	SYMBOL	TEST CONDITIONS		MBR15H35CT MBR15H45CT		MBR15H50CT MBR15H60CT		UNIT
				TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage per diode	V _F ⁽¹⁾	I _F = 7.5 A	T _J = 25 °C	-	0.63	-	0.73	V
		I _F = 7.5 A	T _J = 125 °C	0.50	0.55	0.58	0.61	
		I _F = 15 A	T _J = 25 °C	-	0.75	-	0.87	
		I _F = 15 A	T _J = 125 °C	0.61	0.66	0.68	0.72	
Maximum reverse current per diode	I _R ⁽²⁾	Rated V _R	T _J = 25 °C	-	50	-	50	μA
			T _J = 125 °C	3.0	10	2.0	10	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	MBR	MBRF	MBRB	UNIT
Maximum thermal resistance per diode	$R_{\theta JC}$	3.0	5.0	3.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR15H45CT-E3/45	1.85	45	50/tube	Tube
ITO-220AB	MBRF15H45CT-E3/45	1.99	45	50/tube	Tube
TO-263AB	MBRB15H45CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	MBRB15H45CT-E3/81	1.35	81	800/reel	Tape and reel
TO-220AB	MBR15H45CTHE3/45 ⁽¹⁾	1.85	45	50/tube	Tube
ITO-220AB	MBRF15H45CTHE3/45 ⁽¹⁾	1.99	45	50/tube	Tube
TO-263AB	MBRB15H45CTHE3/45 ⁽¹⁾	1.35	45	50/tube	Tube
TO-263AB	MBRB15H45CTHE3/81 ⁽¹⁾	1.35	81	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified



RATINGS AND CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

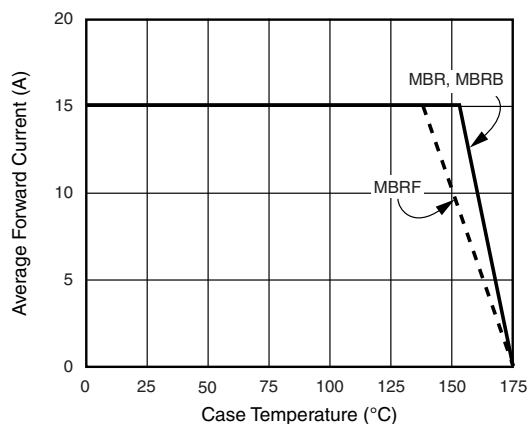


Fig. 1 - Forward Derating Curve Per Diode

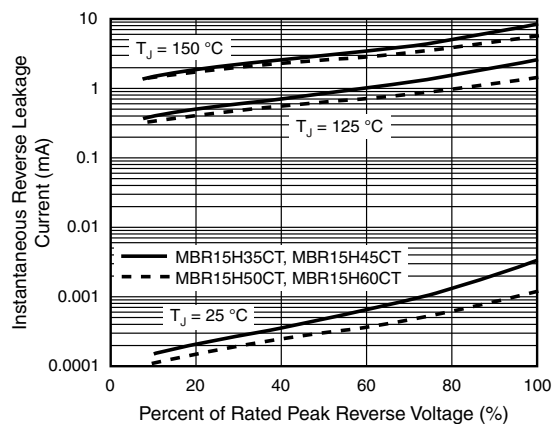


Fig. 4 - Typical Reverse Characteristics Per Diode

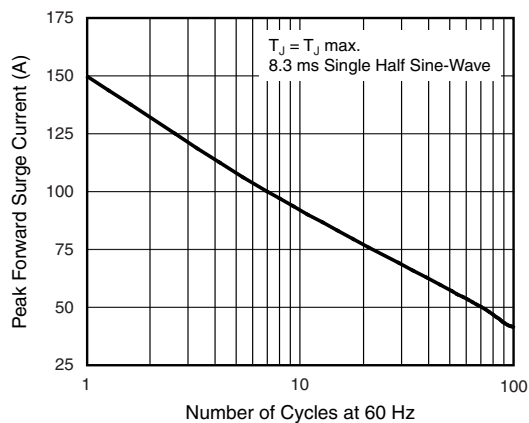


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

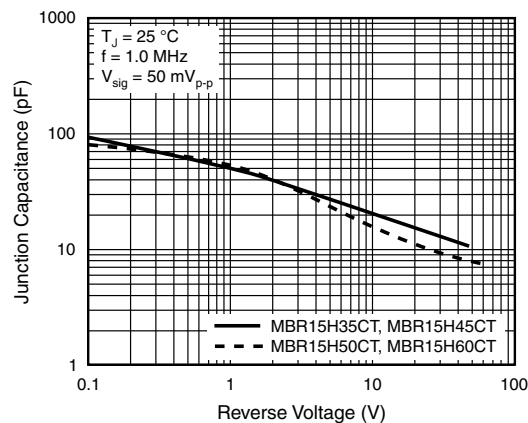


Fig. 5 - Typical Junction Capacitance Per Diode

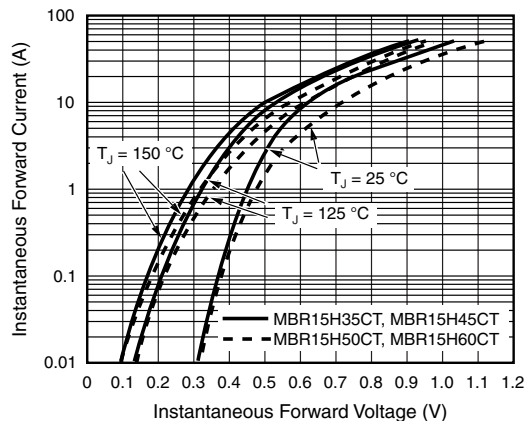


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

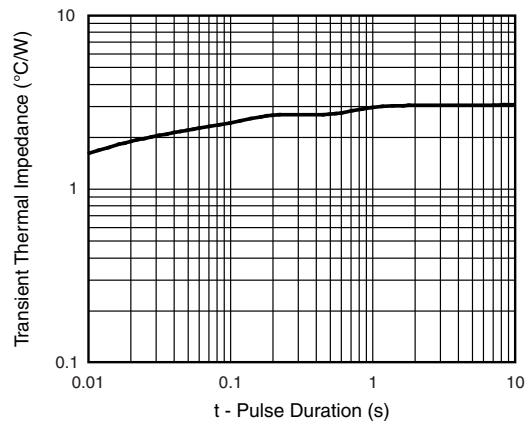
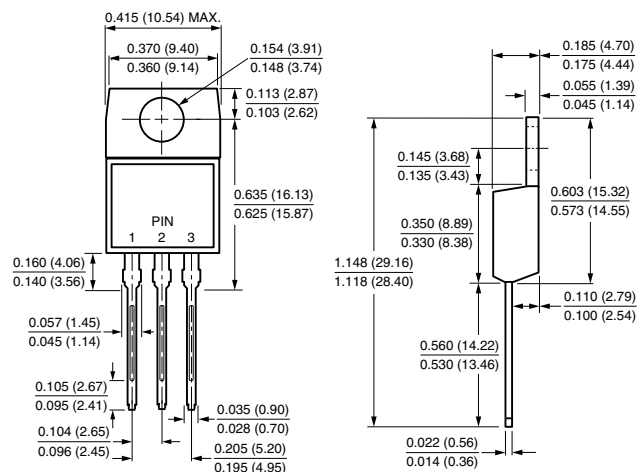


Fig. 6 - Typical Transient Thermal Impedance Per Diode

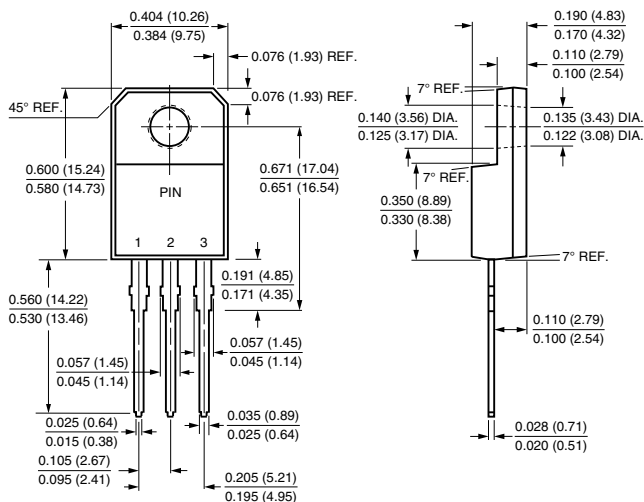


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

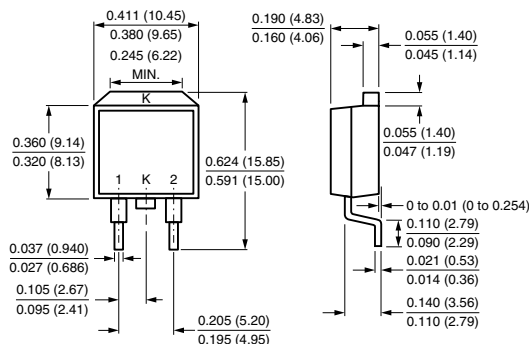
TO-220AB



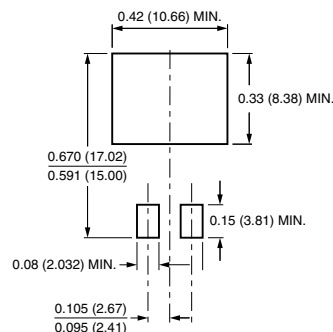
ITO-220AB



TO-263AB



Mounting Pad Layout





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