

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: MBRB15H45CTHE3_B/P
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/mbrb15h45cthe3-b-p.html>

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Contact Information

Email: info@antrexco.com

WhatsApp: +86-186-8066-5326

Website: <https://antrexco.com>

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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:

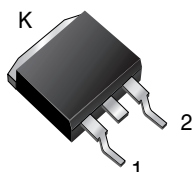
This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

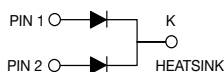
Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

D²PAK (TO-263AB)



MBRB15H45CT



RoHS
COMPLIANT
HALOGEN
FREE

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
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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: D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating
Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 7.5 A
V_{RRM}	45 V
I_{FSM}	150 A
V_F	0.55 V
I_R	50 μ A
T_J max.	175 °C
Package	D ² PAK (TO-263AB)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	MBRB15H45CT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Working peak reverse voltage	V_{RWM}	45	
Maximum DC blocking voltage	V_{DC}	45	
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	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 $t_p = 2.0$ μ s, 1 kHz	I_{RRM}	1.0	
Peak non-repetitive reverse energy (8/20 μ s waveform)	E_{RSM}	20	mJ
Electrostatic discharge capacitor voltage Human body model: $C = 100$ F, $R = 1.5$ k Ω	V_C	25	kV
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		MBRB15H45CT		UNIT
				TYP.	MAX.	
Maximum instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 7.5\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	-	0.63	V
		$I_F = 7.5\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.50	0.55	
		$I_F = 15\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	-	0.75	
		$I_F = 15\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.61	0.66	
Maximum reverse current per diode	$I_R^{(2)}$	Rated V_R	$T_J = 25\text{ }^{\circ}\text{C}$	-	50	μA
			$T_J = 125\text{ }^{\circ}\text{C}$	3.0	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	MBRB15H45CT	UNIT
Maximum thermal resistance per diode	$R_{\theta JC}$	3.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
D ² PAK (TO-263AB)	MBRB15H45CTHM3/I	1.35	I	800/reel	Tape and reel

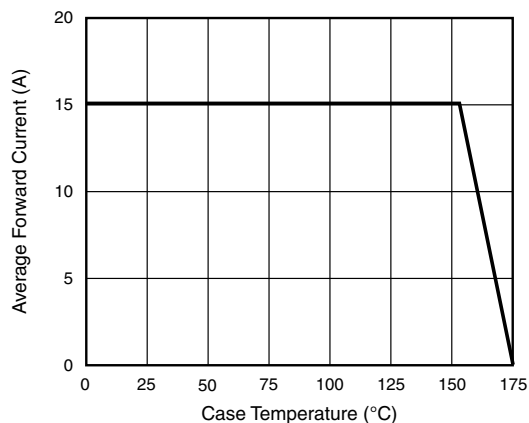
RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Derating Curve Per Diode

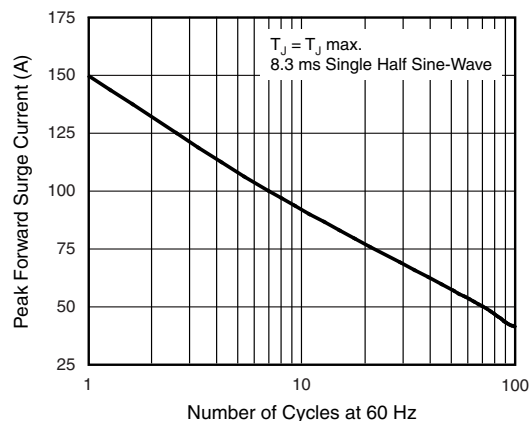


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

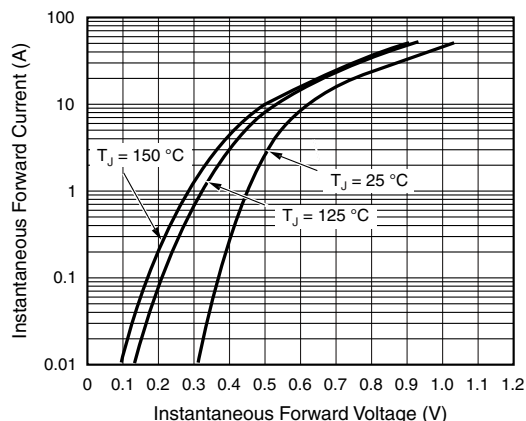


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

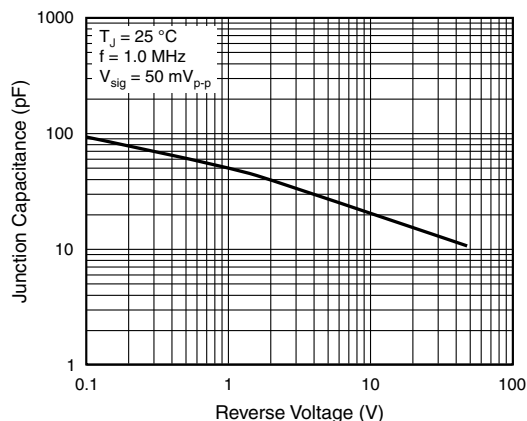


Fig. 5 - Typical Junction Capacitance Per Diode

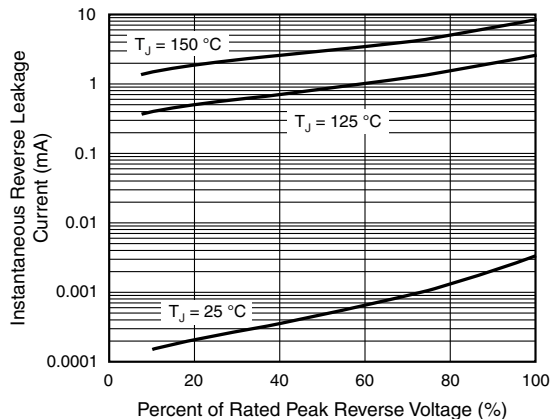


Fig. 4 - Typical Reverse Characteristics Per Diode

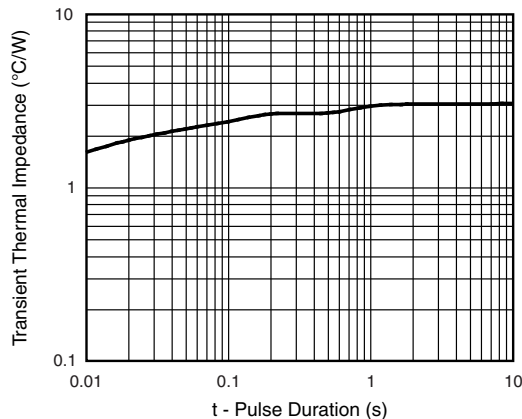
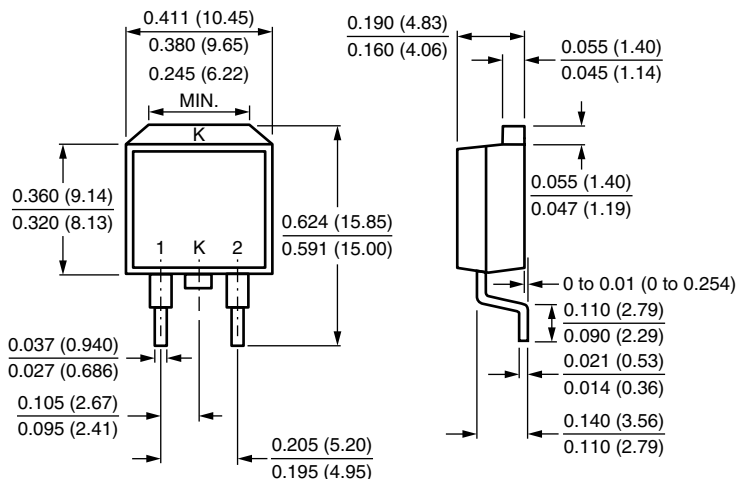


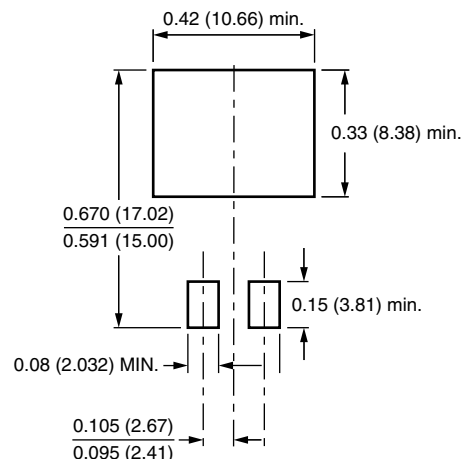
Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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