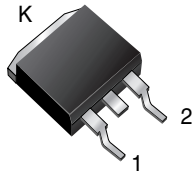
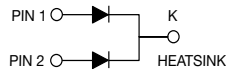


Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

D²PAK (TO-263AB)

MBRB15H45CT

RoHS
COMPLIANT

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 available
- Automotive ordering code: base P/NHE3_A
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES


3D Models

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/NHE3_X - RoHS-compliant, AEC-Q101 qualified
 ("_X" denotes revision code, e.g. A, B, ...)

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

HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

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)	$I_{F(AV)}$	total device	15	A
		per diode	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		-	50	μA
				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 (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
D ² PAK (TO-263AB)	MBRB15H45CTHE3_B/P ⁽¹⁾	1.35	P	50/tube	Tube
D ² PAK (TO-263AB)	MBRB15H45CTHE3_B/I ⁽¹⁾	1.35	I	800/reel	Tape and reel

Note

- (1) AEC-Q101 qualified

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

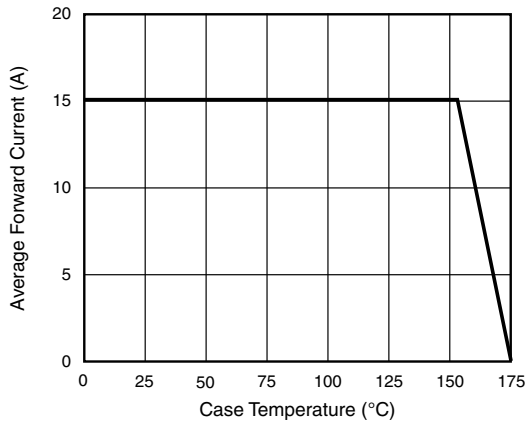


Fig. 1 - Forward Derating Curve Per Diode

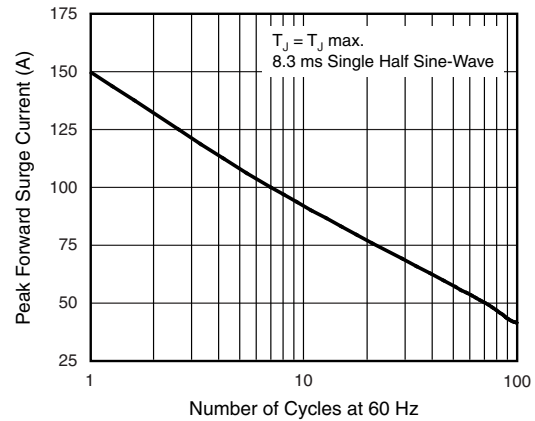


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

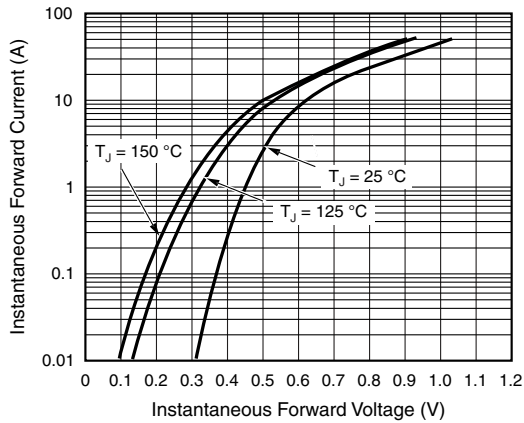


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

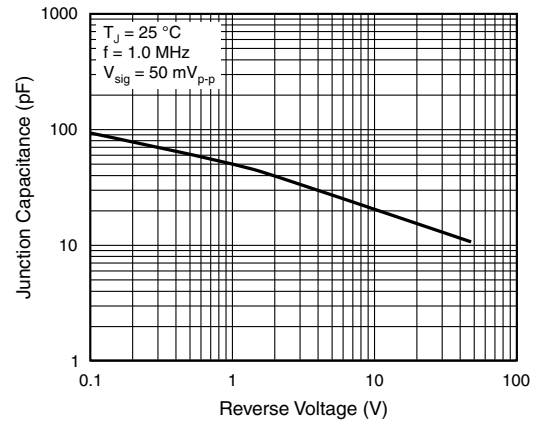


Fig. 5 - Typical Junction Capacitance Per Diode

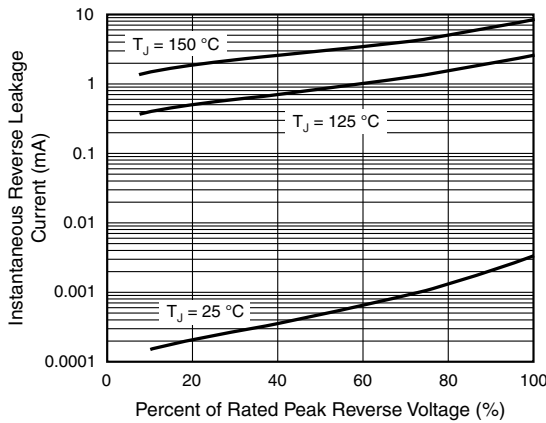


Fig. 4 - Typical Reverse Characteristics Per Diode

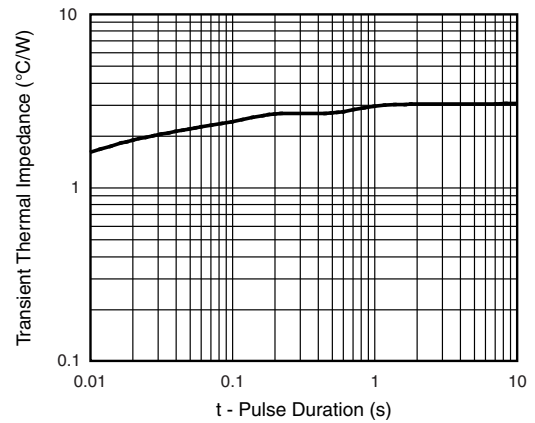
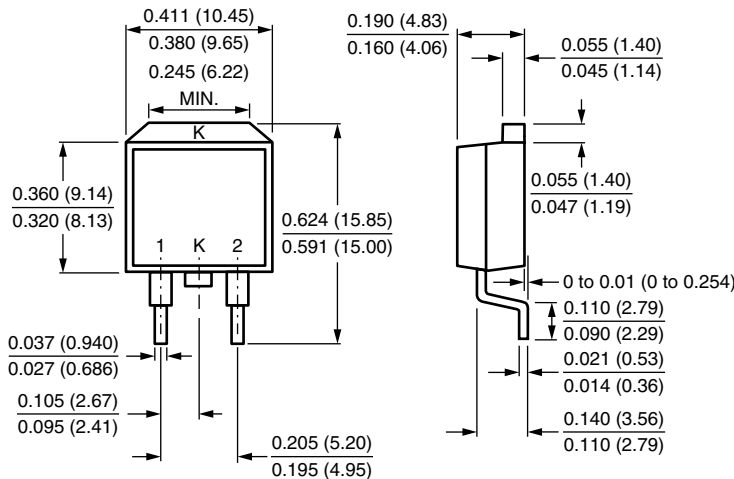


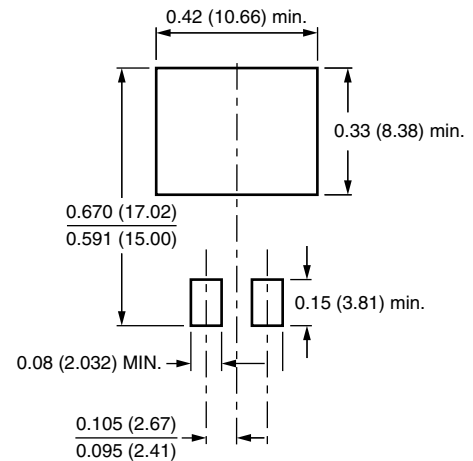
Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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