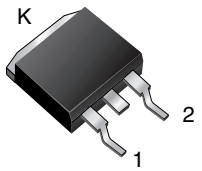
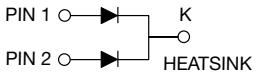
Dual Common Cathode Schottky Rectifier

D²PAK (TO-263AB)



MBRB2545CT



LINK TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 12.5 A
V_{RRM}	45 V
I_{FSM}	150 A
V_F	0.73 V at 30 A
T_J max.	150 °C
Package	D²PAK (TO-263AB)
Circuit configuration	Common cathode

FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- 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

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: D²PAK (TO-263AB)
Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade
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 JESD22-B102

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

MAXIMUM RATINGS (T_C = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	MBRB2545CT	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 at T_C = 130 °C	total device	$I_{F(AV)}$	25	A
	per diode		12.5	
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 μs, 1 kHz		I_{RRM}	1.0	
Peak non-repetitive reverse energy (8/20 μs waveform) per diode		E_{RSM}	25	mJ
Electrostatic discharge capacitor voltage human body model: C = 100 pF, R = 1.5 kΩ		V_C	25	kV
Voltage rate of change (rated V_R)		dV/dt	10 000	V/μs
Operating junction temperature range		T_J	-65 to +150	°C
Storage temperature range		T_{STG}	-65 to +175	

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ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)					
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**MBRB2545CT**	**UNIT**
Maximum instantaneous forward voltage per diode	I_F = 30 A	T_C = 25 °C	V_F (1)	0.82	V
		T_C = 125 °C		0.73	
Maximum instantaneous reverse current at blocking voltage per diode		T_C = 25 °C	I_R (2)	0.2	mA
		T_C = 125 °C		40	

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**MBRB**	**UNIT**
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	1.5	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
D^2PAK (TO-263AB)	MBRB2545CT-E3/45	1.35	45	50/tube	Tube
D^2PAK (TO-263AB)	MBRB2545CT-E3/81	1.35	81	800/reel	Tape and reel
D^2PAK (TO-263AB)	MBRB2545CTHE3_B/P (1)	1.35	P	50/tube	Tube
D^2PAK (TO-263AB)	MBRB2545CTHE3_B/I (1)	1.35	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES (T_C = 25 °C unless otherwise noted)

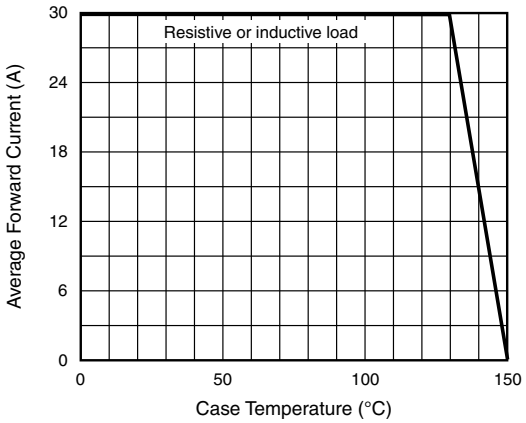

Fig. 1 - Forward Current Derating Curve

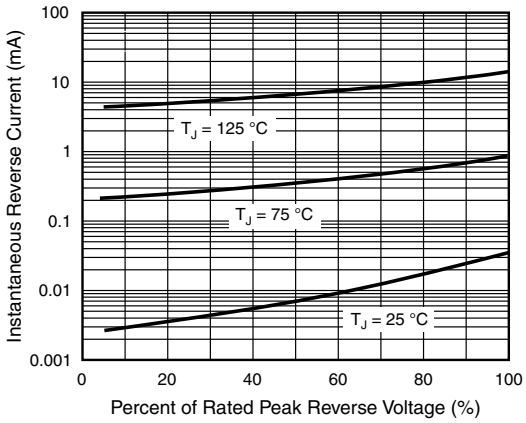

Fig. 4 - Typical Reverse Characteristics Per Diode

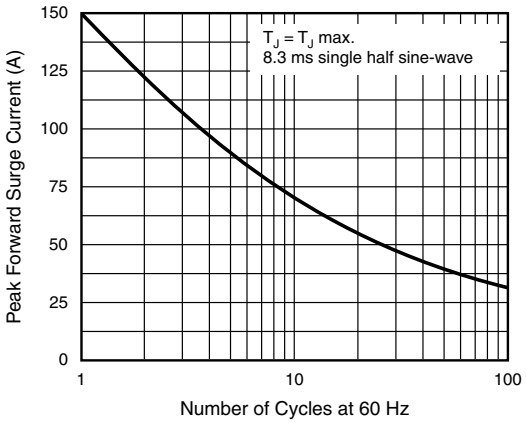

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

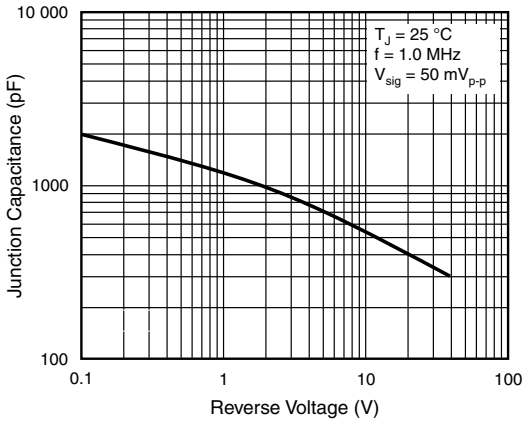

Fig. 5 - Typical Junction Capacitance Per Diode

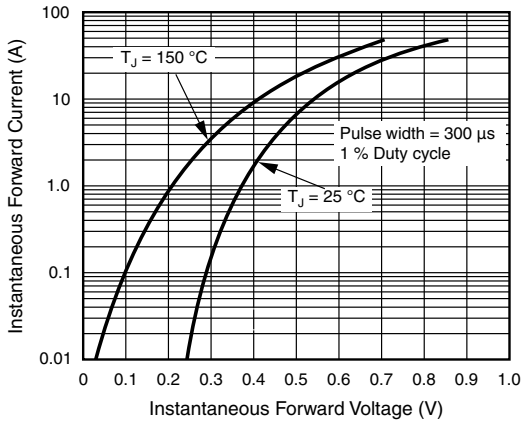

Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

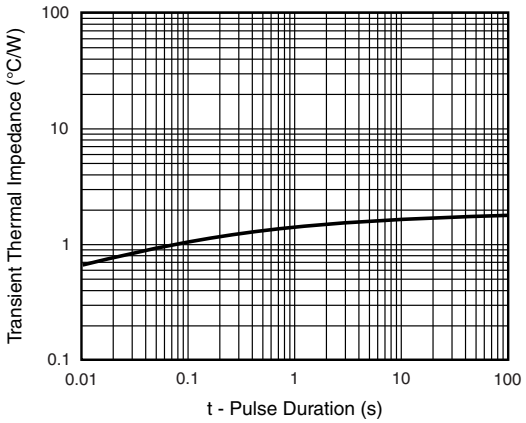

Fig. 6 - Typical Transient Thermal Impedance Per Diode

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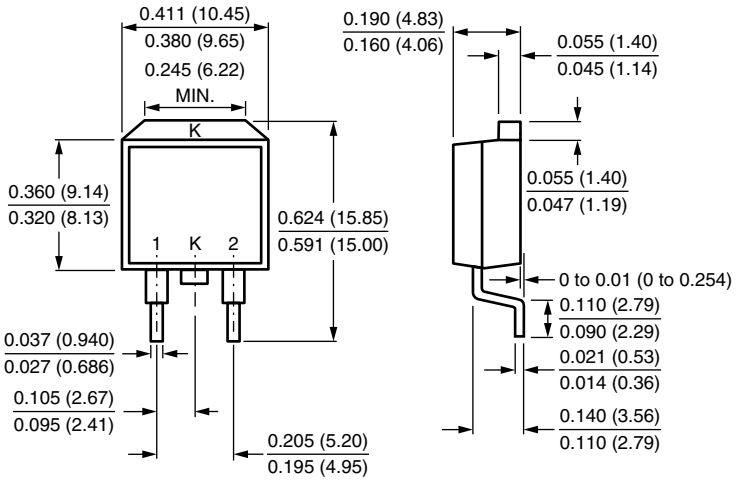
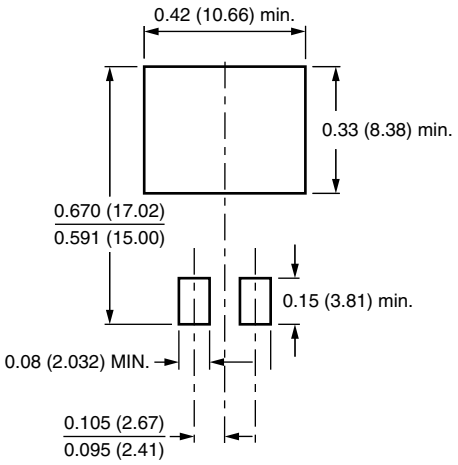
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout



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