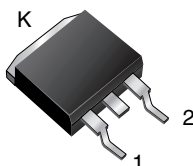
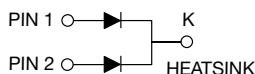


Dual Common Cathode Schottky Rectifier

D²PAK (TO-263AB)

MBRB2545CT


RoHS
COMPLIANT
HALOGEN
FREE

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 available
 - Automotive ordering code: base P/NHM3
- 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, or polarity protection application.

MECHANICAL DATA

Case: D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD22-B102

M3 suffix meets JESD 201 class 2 whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

LINKS 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
$T_J \text{ max.}$	150 °C
Package	D ² PAK (TO-263AB)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_C = 25 \text{ °C}$ 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 $T_C = 130 \text{ °C}$	$I_{F(AV)}$	total device 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 $t_p = 2 \text{ }\mu\text{s}$, 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: $C = 100 \text{ pF}$, $R = 1.5 \text{ k}\Omega$	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	

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

PARAMETER	TEST CONDITIONS	SYMBOL	MBRB2545CT	UNIT
Maximum instantaneous forward voltage per diode	$I_F = 30\text{ A}$	$T_C = 25\text{ }^{\circ}\text{C}$	0.82	V
		$T_C = 125\text{ }^{\circ}\text{C}$	0.73	
Maximum instantaneous reverse current at blocking voltage per diode		$T_C = 25\text{ }^{\circ}\text{C}$	0.2	mA
		$T_C = 125\text{ }^{\circ}\text{C}$	40	

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	MBRB2545CT	UNIT
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	1.5	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
D ² PAK (TO-263AB)	MBRB2545CT-M3/I	1.35	I	800/reel	Tape and reel
D ² PAK (TO-263AB)	MBRB2545CTHM3/I ⁽¹⁾	1.35	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified

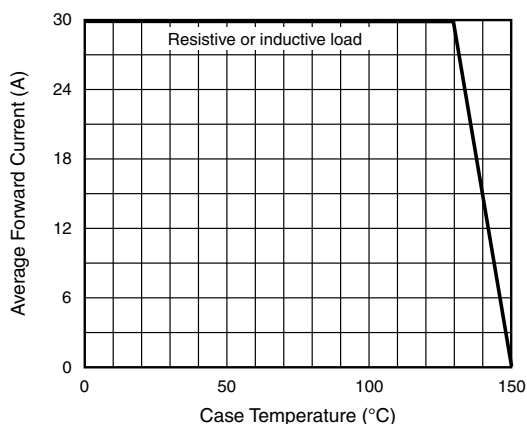
RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

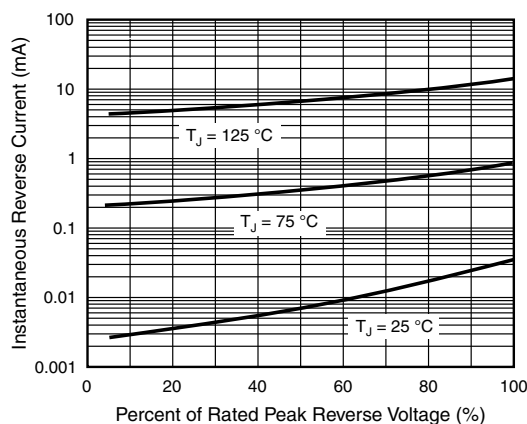


Fig. 4 - Typical Reverse Characteristics Per Diode

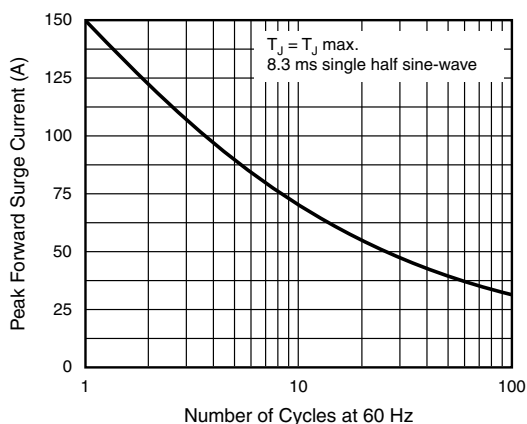


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

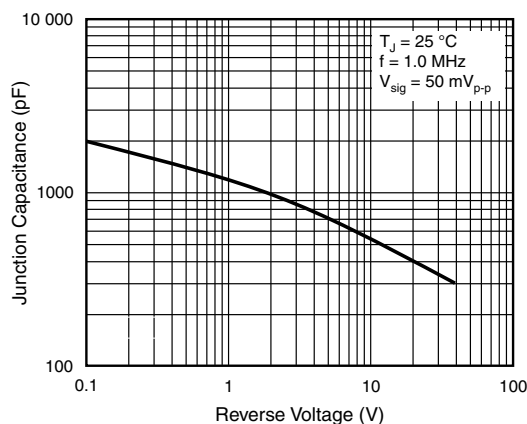


Fig. 5 - Typical Junction Capacitance Per Diode

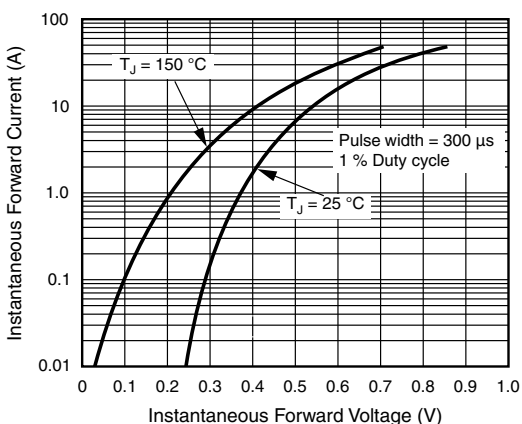


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

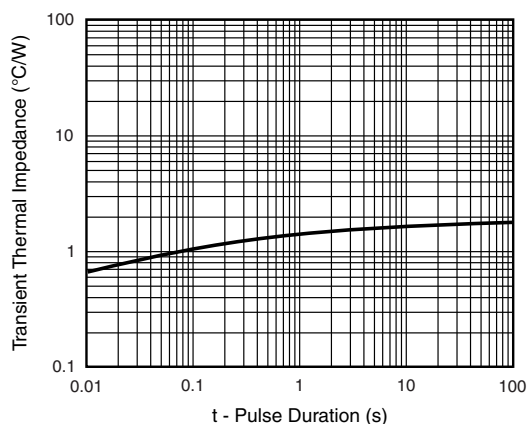
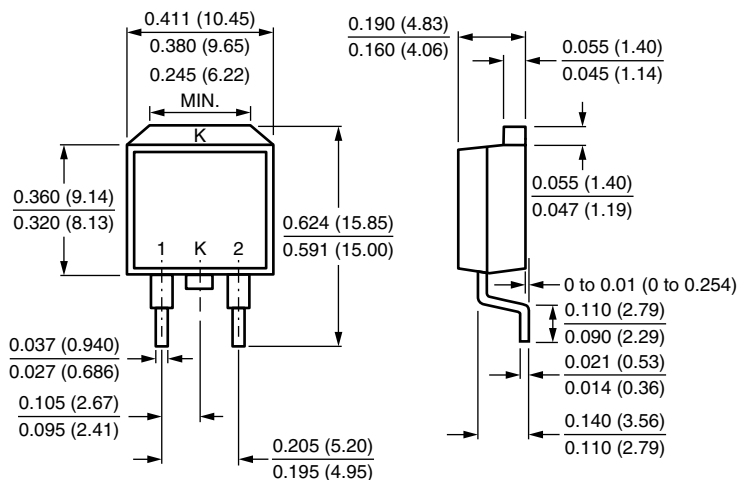


Fig. 6 - Typical Transient Thermal Impedance Per Diode

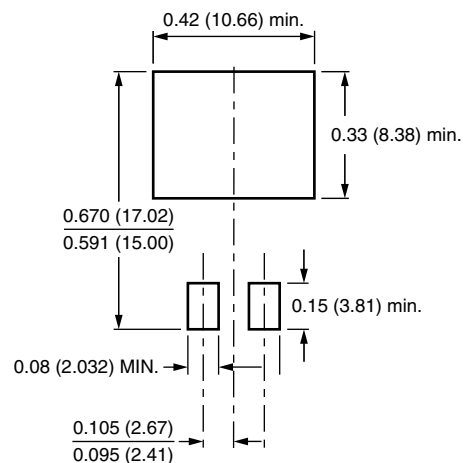


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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