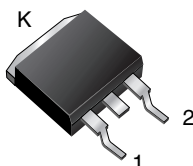
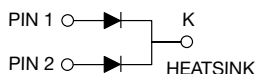


# Dual Common Cathode Schottky Rectifier

**D<sup>2</sup>PAK (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](http://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:** D<sup>2</sup>PAK (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



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 <sup>2</sup> 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 $\mu\text{s}$ 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/ $\mu\text{s}$
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  $\mu\text{s}$  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 <sup>2</sup> PAK (TO-263AB)	MBRB2545CT-M3/I	1.35	I	800/reel	Tape and reel
D <sup>2</sup> PAK (TO-263AB)	MBRB2545CTHM3/I <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

**Note**

- (1) AEC-Q101 qualified

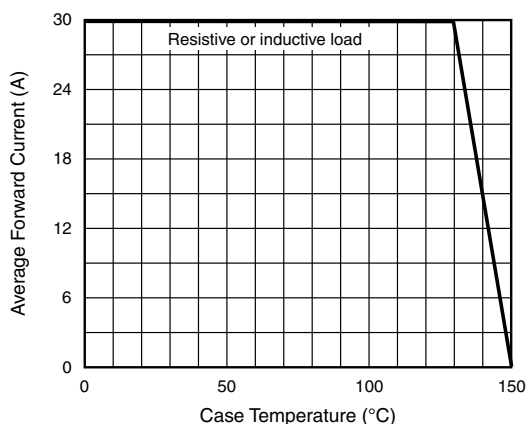
**RATINGS AND CHARACTERISTICS CURVES** ( $T_C = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

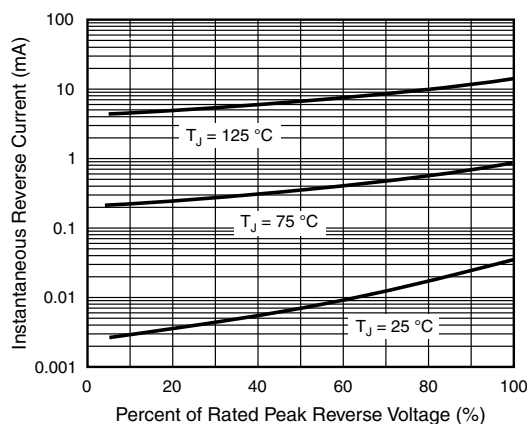


Fig. 4 - Typical Reverse Characteristics Per Diode

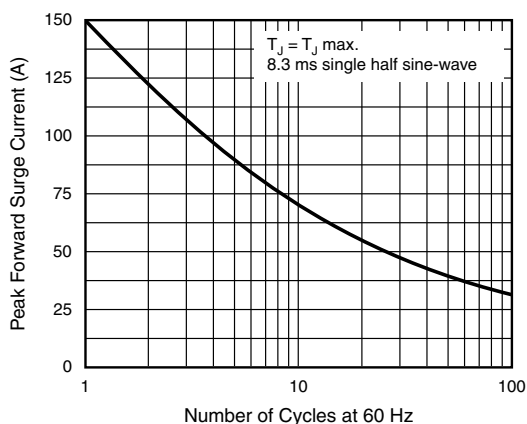


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

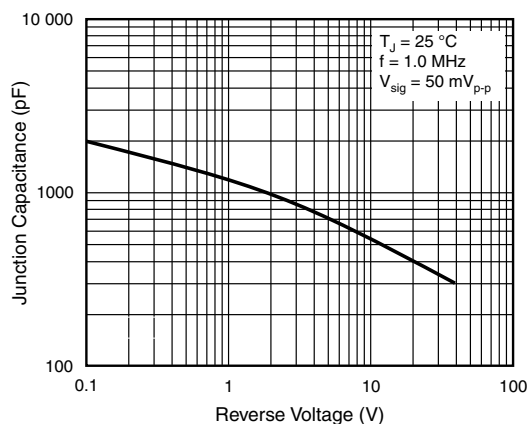


Fig. 5 - Typical Junction Capacitance Per Diode

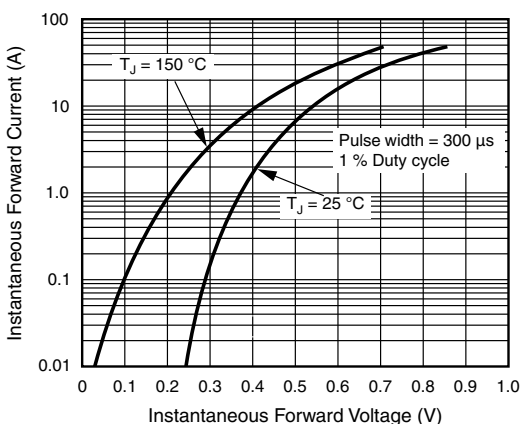


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

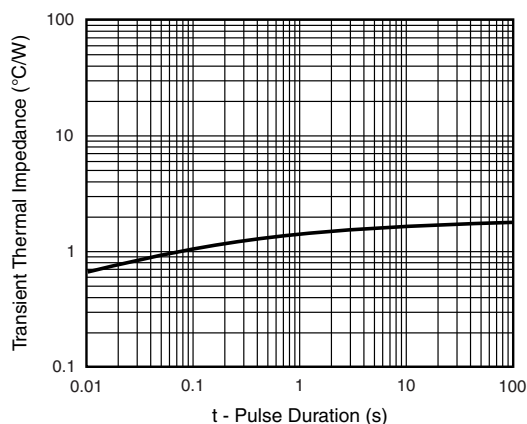
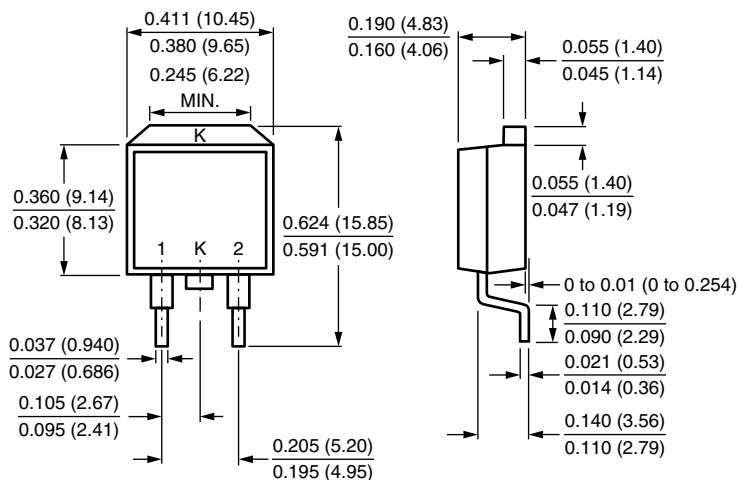


Fig. 6 - Typical Transient Thermal Impedance Per Diode

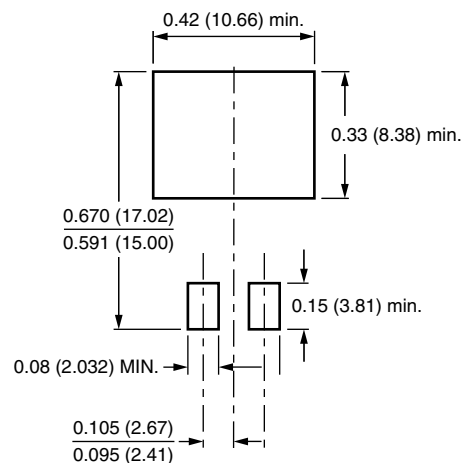


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**D<sup>2</sup>PAK (TO-263AB)**



**Mounting Pad Layout**





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