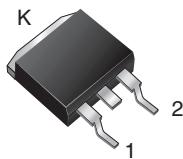
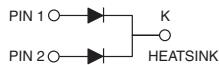


## Dual Common Cathode Schottky Rectifier

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

**MBRB3045CT**


### DESIGN SUPPORT TOOLS AVAILABLE



### FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, 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](http://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, and 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-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 JESD 22-B102  
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

PRIMARY CHARACTERISTICS	
I <sub>F(AV)</sub>	2 x 15 A
V <sub>RRM</sub>	45 V
I <sub>FSM</sub>	200 A
V <sub>F</sub>	0.60 V
T <sub>J</sub> max.	150 °C
Package	D <sup>2</sup> PAK (TO-263AB)
Circuit configurations	Common cathode

MAXIMUM RATINGS (T <sub>C</sub> = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	MBRB3045CT	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	45	V
Working peak reverse voltage	V <sub>RWM</sub>	45	
Maximum DC blocking voltage	V <sub>DC</sub>	45	
Maximum average forward rectified current	I <sub>F(AV)</sub>	30	A
per diode		15	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	200	
Peak repetitive reverse current per diode at t <sub>p</sub> = 2.0 µs, 1 kHz	I <sub>RRM</sub>	2.0	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000	V/µs
Operating junction temperature range	T <sub>J</sub>	-65 to +150	°C
Storage temperature range	T <sub>STG</sub>	-65 to +175	

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNIT
Maximum instantaneous forward voltage per diode	$V_F$ <sup>(1)</sup>	$I_F = 20\text{ A}$	$T_C = 125^\circ\text{C}$	0.60
		$I_F = 30\text{ A}$	$T_C = 25^\circ\text{C}$	0.76
		$I_F = 30\text{ A}$	$T_C = 125^\circ\text{C}$	0.72
Maximum instantaneous reverse current at DC blocking voltage per diode	$I_R$ <sup>(1)</sup>	Rated $V_R$	$T_J = 25^\circ\text{C}$	1.0
			$T_J = 125^\circ\text{C}$	60

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

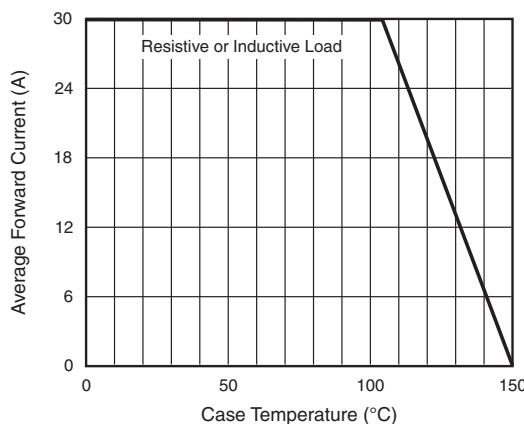
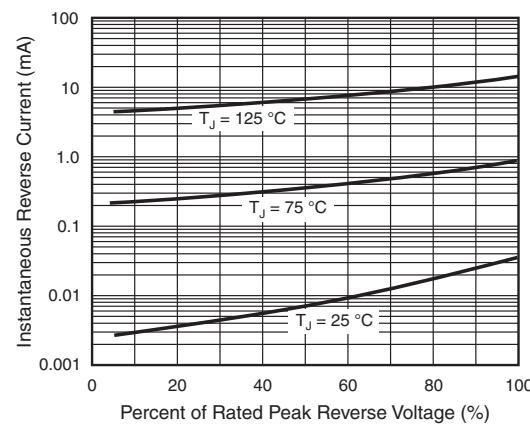
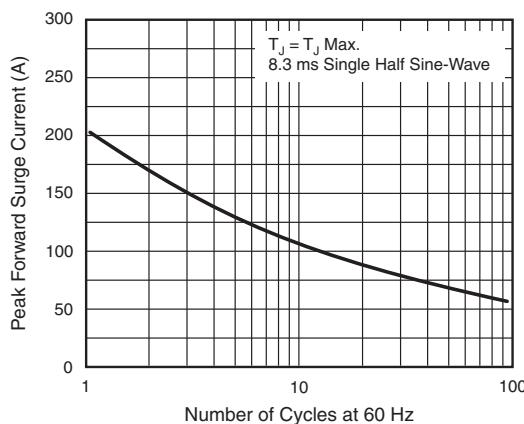
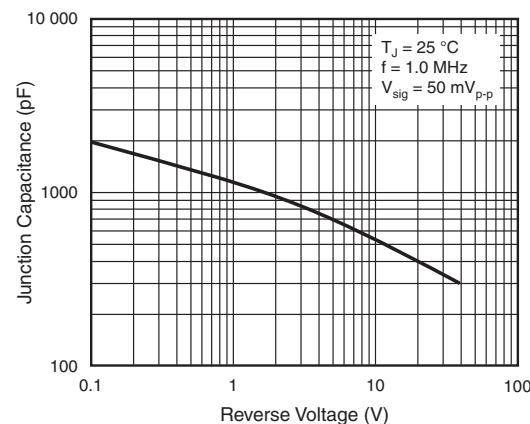
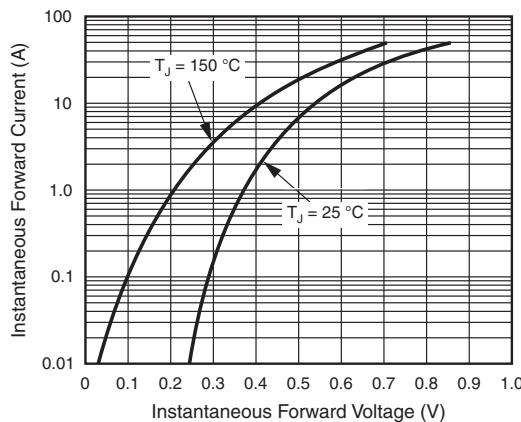
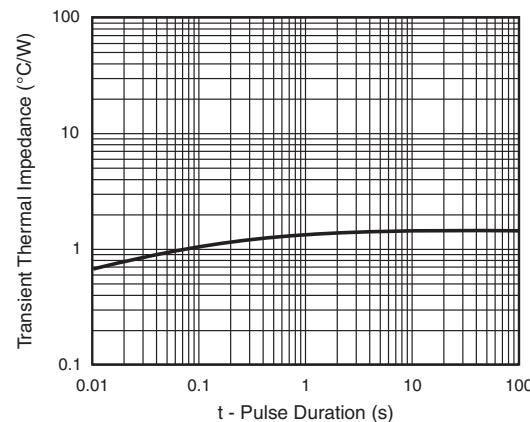
(2) Pulse test: pulse width  $\leq 40\text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_C = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBRB	UNIT	
Typical thermal resistance per diode	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$	

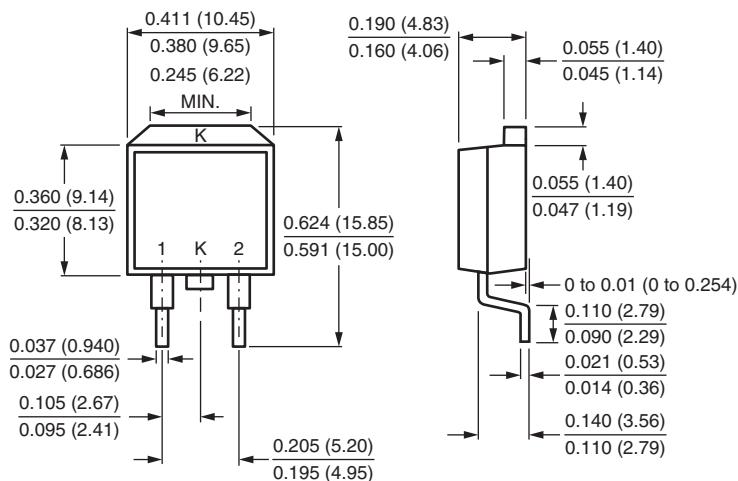
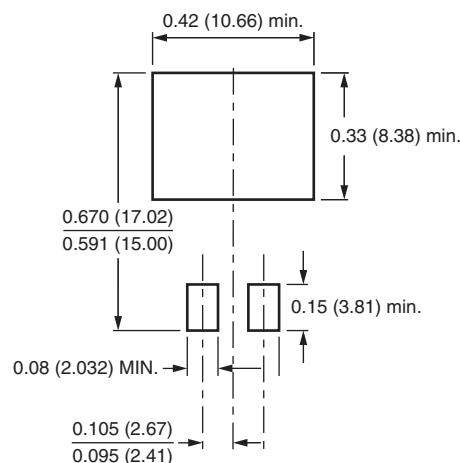
<b>ORDERING INFORMATION</b> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	MBRB3045CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	MBRB3045CT-E3/81	1.35	81	800/reel	Tape and reel
TO-263AB	MBRB3045CTHE3_B/P <sup>(1)</sup>	1.35	P	50/tube	Tube
TO-263AB	MBRB3045CTHE3_B/I <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

**Note**

(1) AEC-Q101 qualified

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