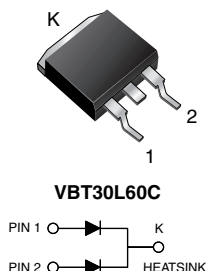


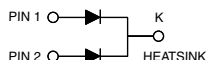
# Dual TMBS® (Trench MOS Barrier Schottky) Rectifier

Ultra Low  $V_F = 0.32\text{ V}$  at  $I_F = 5.0\text{ A}$

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



VBT30L60C



## LINKS TO ADDITIONAL RESOURCES



## FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters, and reverse battery protection.

## 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/N-M3 - halogen-free, RoHS-compliant, and commercial grade

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

E3 and M3 suffix meet JESD 201 class 2 whisker test

**Polarity:** as marked

## PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	60 V
$I_{FSM}$	200 A
$V_F$ at $I_F = 15\text{ A}$	0.45 V
$T_J\text{ max.}$	150 °C
Package	D <sup>2</sup> PAK (TO-263AB)
Circuit configuration	Common cathode

## MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VB T30L60C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	60	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30	A
		15	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	200	A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000	V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	-40 to +150	°C

## ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MIN.	UNIT
Instantaneous forward voltage per diode	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.43	-	V
	I <sub>F</sub> = 7.5 A			0.46	-	
	I <sub>F</sub> = 15 A			0.51	0.60	
	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 125 °C		0.32	-	
	I <sub>F</sub> = 7.5 A			0.36	-	
	I <sub>F</sub> = 15 A			0.45	0.57	
Reverse current per diode	V <sub>R</sub> = 60 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	-	4.0	mA
		T <sub>A</sub> = 125 °C		27	110	

### Notes

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

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



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

PARAMETER		SYMBOL	VBT30L60C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	1.8	$^{\circ}\text{C/W}$
	per device		0.8	

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VBT30L60C-E3/4W	1.39	4W	50/tube	Tube
TO-263AB	VBT30L60C-E3/8W	1.39	8W	800/reel	Tape and reel
TO-263AB	VBT30L60C-M3/I	1.39	I	800/reel	Tape and reel

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

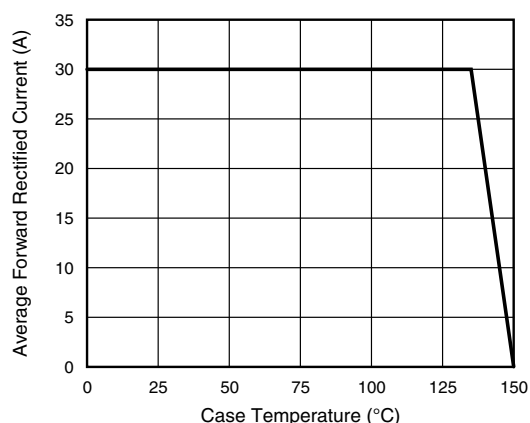


Fig. 1 - Maximum Forward Current Derating Curve

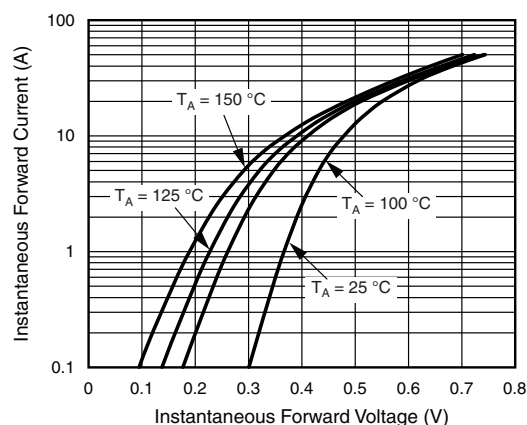


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

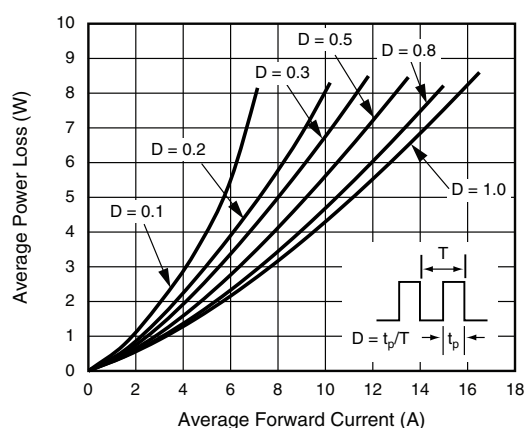


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

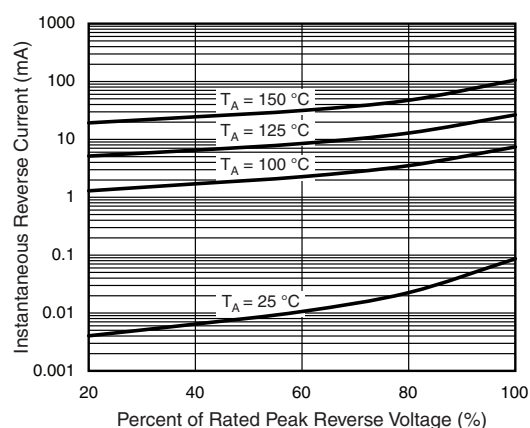


Fig. 4 - Typical Reverse Characteristics Per Diode

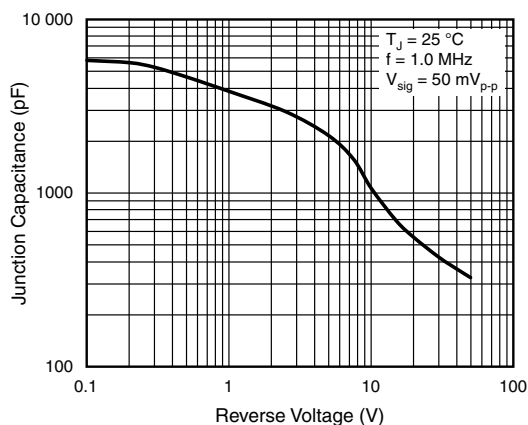


Fig. 5 - Typical Junction Capacitance Per Diode

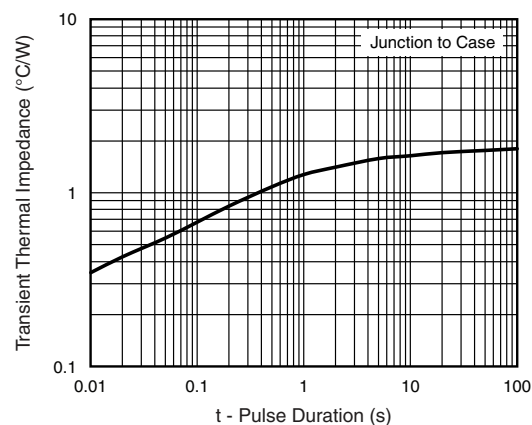
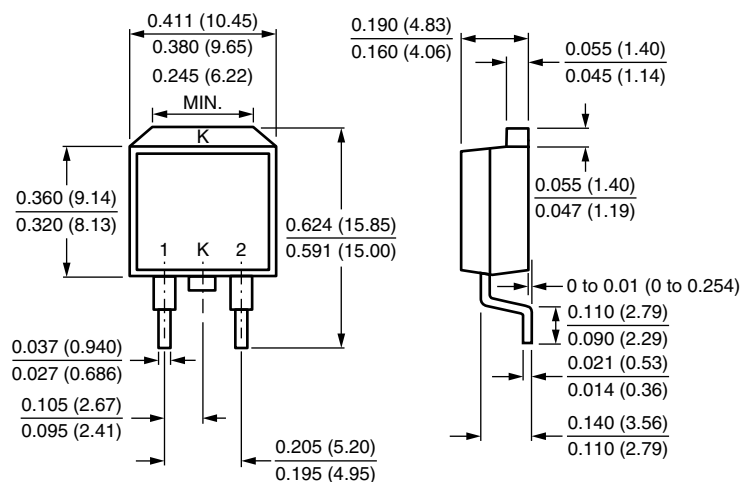


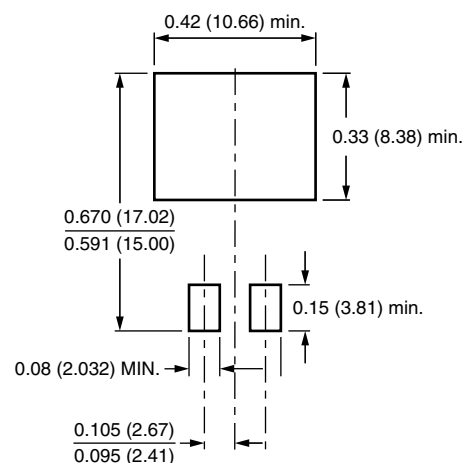
Fig. 6 - Typical Transient Thermal Impedance Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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



#### Mounting Pad Layout





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