ROHS COMPLIANT

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# **Dual High-Voltage Trench MOS Barrier Schottky Rectifier**

Ultra Low  $V_F = 0.39$  V at  $I_F = 2.5$  A



### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	2 x 5 A				
V <sub>RRM</sub>	60 V				
I <sub>FSM</sub>	100 A				
V <sub>F</sub> at I <sub>F</sub> = 5.0 A	0.50 V				
T <sub>J</sub> max.	150 °C				
Package	D <sup>2</sup> PAK (TO-263AB)				
Circuit configurations	Common cathode				

### 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 FREE peak of 245 °C
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

### **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-M3 - halogen-free, RoHS-compliant, and commercial grade

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

M3 suffix meets JESD 201 class 1A whisker test

### Polarity: as marked

Mounting Torque: 10 in-lbs maximum

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER			VBT1060C	UNIT		
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	60	V		
Maximum average forward rectified current (fig. 1)	per device		10			
	per diode	IF(AV)	5	А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode			100			
Operating junction and storage temperature range			-55 to +150	°C		

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CO	NDITIONS	SYMBOL	TYP.	MAX.	UNIT		
Instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 2.5 A	T₄ = 25 °C	V <sub>F</sub>	0.49	-	V		
	I <sub>F</sub> = 5.0 A	$I_{A} = 25$ C		0.58	0.70			
	I <sub>F</sub> = 2.5 A	T <sub>A</sub> = 125 °C		0.39	-			
	I <sub>F</sub> = 5.0 A			0.50	0.60			
Reverse current per diode <sup>(2)</sup>	V <sub>R</sub> = 60 V	T <sub>A</sub> = 25 °C	- I <sub>R</sub>	-	700	μA		
		T <sub>A</sub> = 125 °C		6.9	25	mA		

#### Notes

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

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  40 ms

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1

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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER		SYMBOL	VBT1060C	UNIT		
Typical thermal resistance	per diode	$R_{ extsf{ heta}JC}$	3.5	°C/W		
	per device		2.5			

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
D <sup>2</sup> PAK (TO-263AB)	VTB1060C-M3/4W	1.39	4W	50/tube	Tube		
D <sup>2</sup> PAK (TO-263AB)	VTB1060C-M3/8W	1.39	8W	800/reel	Tape and reel		

### **RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25$ °C unless otherwise noted)

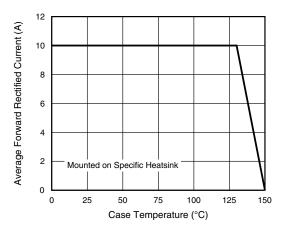


Fig. 1 - Maximum Forward Current Derating Curve

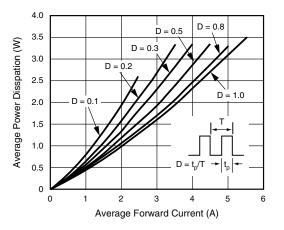


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

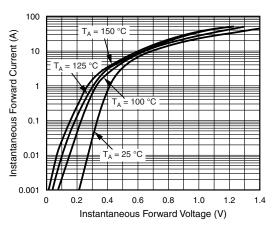


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

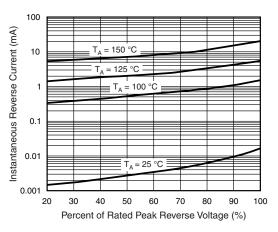
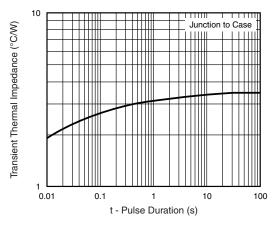


Fig. 4 - Typical Reverse Characteristics Per Diode



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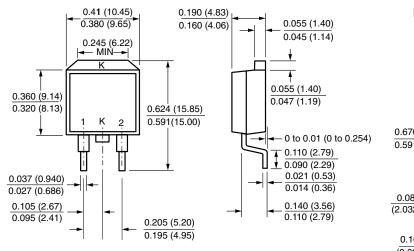


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Fig. 5 - Typical Transient Thermal Impedance Per Diode

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



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

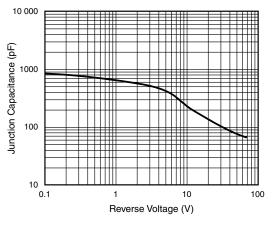
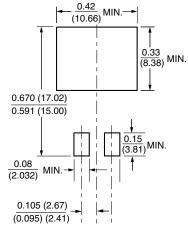


Fig. 6 - Typical Junction Capacitance Per Diode

# **Mounting Pad Layout**





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