ROHS COMPLIANT

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Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.40$ V at $I_F = 5$ A



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 10 A			
V _{RRM}	60 V			
I _{FSM}	150 A			
V_F at $I_F = 10$ A	0.52 V			
T _J max.	150 °C			
Package	D ² PAK (TO-263AB)			
Circuit configuration	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: D²PAK (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

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER		SYMBOL	VBT2060C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	60	V	
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	20	A	
	per diode		10		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	150		
Operating junction and storage temperature range		T _J , T _{STG}	-55 to +150	°C	

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CO	TEST CONDITIONS		TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode ⁽¹⁾	I _F = 5 A	- T _A = 25 °C	V _F	0.49	-	V	
	I _F = 10 A			0.57	0.65		
	I _F = 5 A	T _A = 125 °C		0.40	-		
	I _F = 10 A			0.52	0.59		
Reverse current per diode (2)	V _B = 60 V	T _A = 25 °C	I _R	-	850	μA	
	v _R = 00 v	T _A = 125 °C		14	40	mA	

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width \leq 40 ms

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For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



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THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VBT2060C	UNIT
Turnical thermal registerion	per diode	$R_{ extsf{ heta}JC}$	3.2	°C/W
Typical thermal resistance	per device		1.9	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
D ² PAK (TO-263AB)	VTB2060C-M3/4W	1.39	4W	50/tube	Tube	
D ² PAK (TO-263AB)	VTB2060CM3/8W	1.39	8W	800/reel	Tape and reel	

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

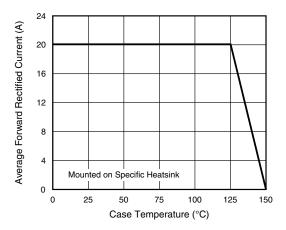


Fig. 1 - Maximum Forward Current Derating Curve

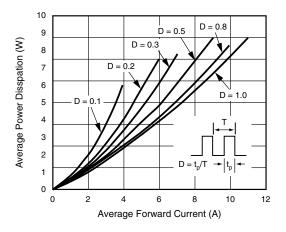


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

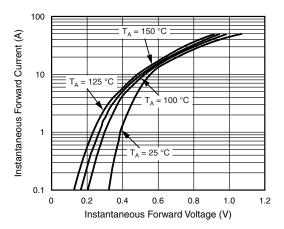


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

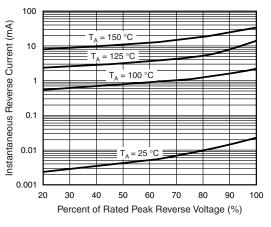
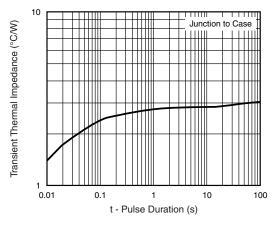


Fig. 4 - Typical Reverse Characteristics Per Diode



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Fig. 5 - Typical Transient Thermal Impedance Per Diode

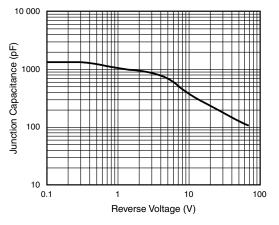
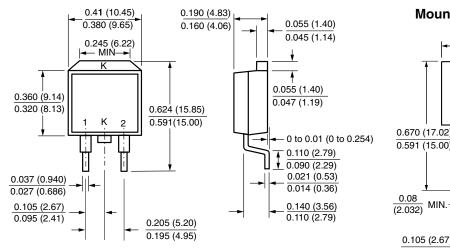


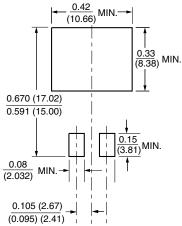
Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



D²PAK (TO-263AB)

Mounting Pad Layout





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