

Vishay General Semiconductor

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.39 \text{ V}$ at $I_F = 2.5 \text{ A}$



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 5 A			
V _{RRM}	60 V			
I _{FSM}	100 A			
V _F at I _F = 5.0 A	0.50 V			
T _J max.	150 °C			
Package	D ² PAK (TO-263AB)			
Circuit configurations	Common cathode			

FEATURES

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses

High efficiency operation

RoHS COMPLIANT

- 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.vishav.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 °C unless otherwise noted)					
PARAMETER		SYMBOL	VBT1060C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	60	V	
Maximum average forward rectified current (fig. 1)	per device		10		
	per diode	I _{F(AV)}	5	Α	
Peak forward surge current 8.3 ms single half sine-wave su load per diode	I _{FSM}	100			
Operating junction and storage temperature range		T _J , T _{STG}	-55 to +150	°C	

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode (1)	I _F = 2.5 A	T _A = 25 °C	V _F	0.49	-	. V	
	I _F = 5.0 A			0.58	0.70		
	I _F = 2.5 A	T _A = 125 °C		0.39	-		
	I _F = 5.0 A			0.50	0.60		
Reverse current per diode (2)	V _R = 60 V	T _A = 25 °C	- I _R	-	700	μΑ	
		T _A = 125 °C		6.9	25	mA	

Notes

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

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



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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VBT1060C	UNIT	
Typical thermal resistance	per diode	$R_{ heta JC}$	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 ² PAK (TO-263AB)	VTB1060C-M3/4W	1.39	4W	50/tube	Tube	
D ² 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)

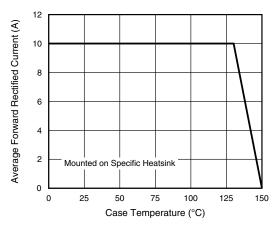


Fig. 1 - Maximum Forward Current Derating Curve

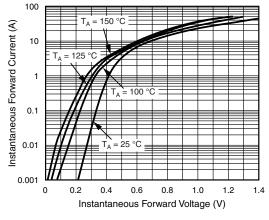


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

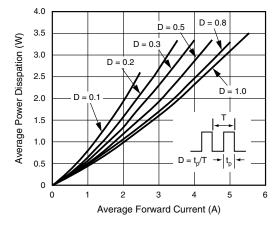


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

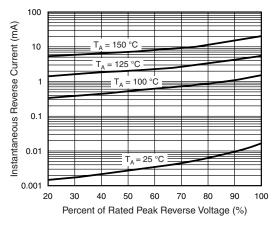


Fig. 4 - Typical Reverse Characteristics Per Diode



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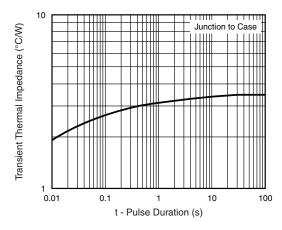


Fig. 5 - Typical Transient Thermal Impedance Per Diode

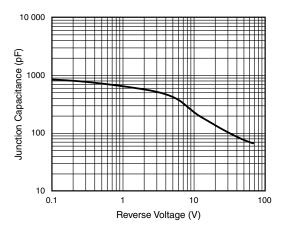
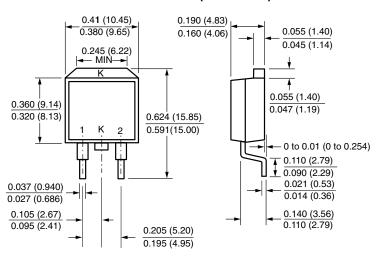


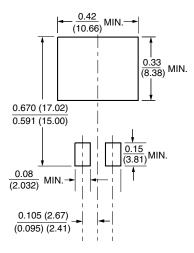
Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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