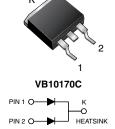


Vishay General Semiconductor

Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.57 \text{ V}$ at $I_F = 2.5 \text{ A}$





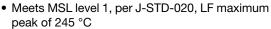
LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 5 A			
V _{RRM}	170 V			
I _{FSM}	80 A			
V_F at $I_F = 5.0$ A	0.65 V			
T _J max.	175 °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





 Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: D²PAK (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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VB10170C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	170	V	
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	10	^	
	per diode		5	— A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I _{FSM}	80	А	
Voltage rate of change (rated V _R)		dV/dt	10 000	V/µs	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to +175	°C	



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 2.5 A	T _A = 25 °C	V _F ⁽¹⁾	0.74	-	- V	
	I _F = 5.0 A			0.84	1.03		
	I _F = 2.5 A	T _A = 125 °C		0.57	-		
	I _F = 5.0 A			0.65	0.74		
Reverse current per diode	V _R = 136 V	T _A = 25 °C	I _R ⁽²⁾	0.3	-	μA	
		T _A = 125 °C		0.9	-	mA	
	V _R = 170 V	T _A = 25 °C		-	90	μA	
		T _A = 125 °C		1.3	10	mA	

Notes

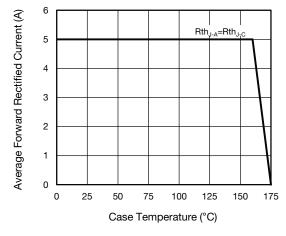
 $^{(1)}$ Pulse test: 300 μs pulse width, 1 % duty cycle

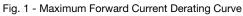
(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VB10170C	UNIT	
Typical thermal resistance	per diode	R _{θJC}	3.0	°C/W	
	per device		1.7	C/VV	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
D ² PAK (TO-263AB)	VB10170C-E3/4W	1.38	4W	50/tube	Tube	
D ² PAK (TO-263AB)	VB10170C-E3/8W	1.38	8W	800/reel	Tape and reel	
D ² PAK (TO-263AB)	VB10170C-M3/I	1.38	I	800/reel	Tape and reel	

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





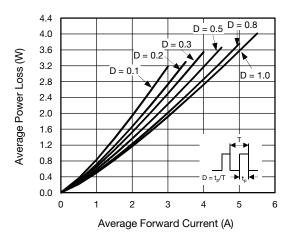


Fig. 2 - Forward Power Loss Characteristics Per Diode



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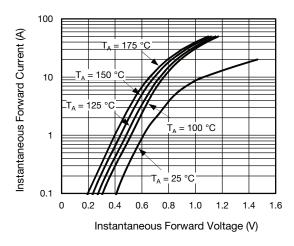


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

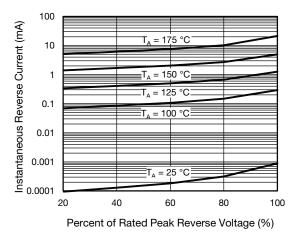


Fig. 4 - Typical Reverse Characteristics Per Diode

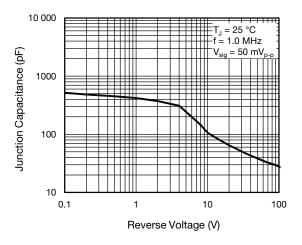


Fig. 5 - Typical Junction Capacitance Per Diode

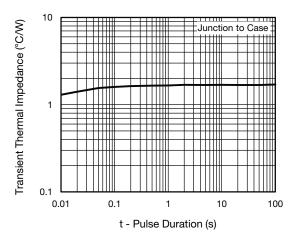
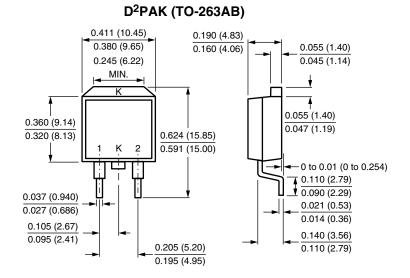
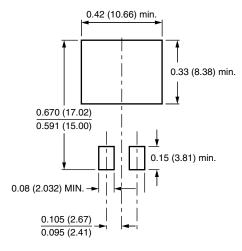


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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