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VB60100C-M3

Vishay General Semiconductor

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36$ V at $I_F = 5$ A

FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- · High efficiency operation
- Low thermal resistance
- 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

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: 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	VB60100C	UNIT		
Maximum repetitive peak reverse voltage		V _{RRM}	100	V	
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	60	А	
	per diode		30		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	320	А	
Voltage rate of change (rated VR)		dV/dt	10 000	V/µs	
Operating junction and storage temperature range		T _J , T _{STG}	- 40 to + 150	°C	

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TMBS[®] TO-263AB



VB60100C

PIN 1 O HEATSINK PIN 2 O-

PRIMARY CHARACTERISTICS				
Package	TO-263AB			
I _{F(AV)}	2 x 30 A			
V _{RRM}	100 V			
I _{FSM}	320 A			
V_F at $I_F = 30$ A	0.66 V			
T _J max.	150 °C			
Diode variation	Common cathode			

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RoHS COMPLIANT

HALOGEN FREE





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ELECTRICAL CHARACTERISTICS (T _A = 25 °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	VF	0.45	-	V	
	I _F = 10 A			0.52	-		
	I _F = 15 A			0.58	0.63		
	I _F = 20 A			0.63	-		
	I _F = 30 A			0.73	0.79		
	I _F = 5 A	T _A = 125 °C		0.36	-		
	I _F = 10 A			0.45	-		
	I _F = 15 A			0.53	0.58		
	I _F = 20 A			0.58	-		
	I _F = 30 A			0.66	0.70		
Reverse current at rated V_R per diode $^{(2)}$	V _R = 80 V	T _A = 25 °C	I _R	24	500	μA	
	v _R = 00 v	T _A = 125 °C		13	20	mA	
	V _R = 100 V	T _A = 25 °C		65	1000	μA	
	v _R ≃ 100 v	T _A = 125 °C		30	-	mA	

Notes

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

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

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	VB60100C	UNIT	
Typical thermal resistance per diode	R _{0JC}	2.5	°C/W	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VB60100C-M3/4W	1.38	4W	50/tube	Tube
TO-263AB	VB60100C-M3/8W	1.38	8W	50/tube	Tape and reel

RATINGS AND CHARACTERISTICS CURVES

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



Fig. 1 - Forward Current Derating Curve



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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