Vishay General Semiconductor

Dual High Voltage TMBS[®] (Trench MOS Barrier Schottky) Rectifier

Ultra Low V_F = 0.34 V at I_F = 5 A

FEATURES

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses
- · High efficiency operation
- Solder bath temperature 275 °C maximum, 10 s, FREE per JESD 22-B106
- · 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-220AB

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

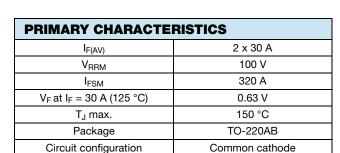
Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	V61103C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	100	V	
Maximum average forward rectified current (fig. 1)	per device		60	A	
	per diode	IF(AV)	30		
Peak forward surge current 8.3 ms single half sine-wav on rated load per diode	e superimposed	I _{FSM}	320	А	
Operating junction temperature range		T _J ⁽¹⁾	-40 to +150	°C	
Storage temperature range		T _{STG}	-55 to +150	C	

Note

⁽¹⁾ The heat generated must be less than the thermal conductivity from junction to ambient: $dP_D/dT_J < 1/R_{0,JA}$







V61103C



RoHS COMPLIANT HALOGEN





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ELECTRICAL CHARACTERISTICS ($T_J = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CO	NDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	I _F = 5 A	T _J = 25 °C	V _F ⁽¹⁾	0.43	-	V
	I _F = 15 A			0.54	-	
	$I_{F} = 30 \text{ A}$			0.68	0.74	
	I _F = 5 A	T _J = 125 °C		0.34	-	
	I _F = 15 A			0.49	-	
	I _F = 30 A			0.63	0.68	
Reverse current at rated V _R per diode	V 70.V	T _J = 25 °C	I _R (2)	0.02	-	mA
	V _R = 70 V	T _J = 125 °C		13	-	
	V 100.V	T _J = 25 °C		-	2	
	V _R = 100 V	T _J = 125 °C		30 60	60	
Typical junction capacitance	4 V, 1MHz	-	CJ	3250	-	pF

Notes

 $^{(2)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽³⁾ Pulse test: Pulse width \leq 5 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	V61103C	UNIT		
Typical thermal resistance per device	R _{θJC} ⁽¹⁾	1.0	°C/W		

Note

⁽⁴⁾ Thermal resistance junction-to-case to follow JEDEC[®] 51-14 transient dual interface test method (TDIM)

OERDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
V61103C-M3/P	1.88	Р	50/tube	Tube		



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

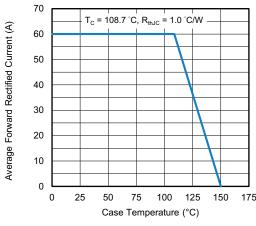


Fig. 1 - Forward Current Derating Curve

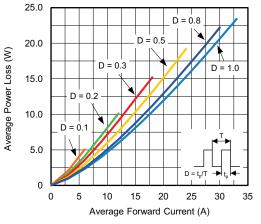


Fig. 2 - Forward Power Loss Characteristics Per Diode

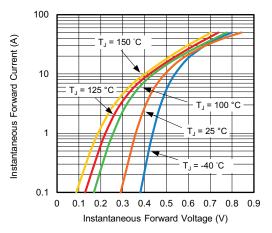


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

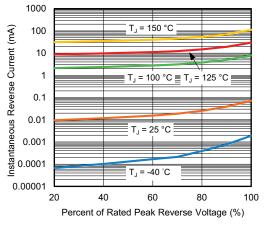


Fig. 4 - Typical Reverse Characteristics Per Diode

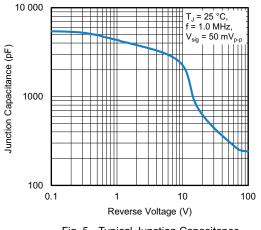
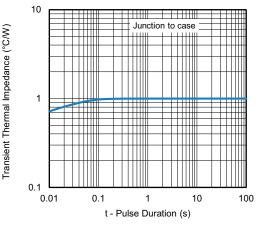


Fig. 5 - Typical Junction Capacitance





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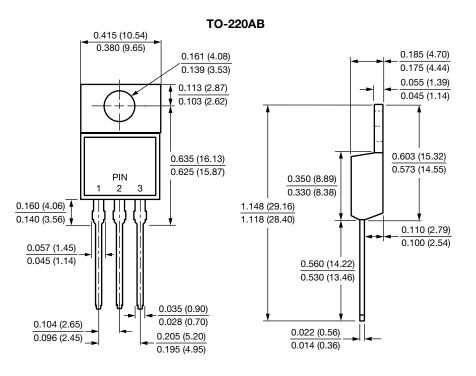
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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