COMPLIANT

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Vishay General Semiconductor

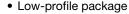
Surface-Mount TMBS® (Trench MOS Barrier Schottky) Rectifier

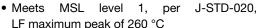




PRIMARY CHARACTERISTICS				
I _{F(AV)}	5 A			
V_{RRM}	150 V			
I _{FSM}	100 A			
V_F at $I_F = 5$ A ($T_A = 125$ °C)	0.68 V			
T _J max.	175 °C			
Package	SlimSMAW (DO-221AD)			
Circuit configuration	Single			

FEATURES





RoHS • AEC-Q101 qualified available

- Automotive ordering code: base P/NHM3 Compatible to SOD-128 package case outline

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

TYPICAL APPLICATIONS

For use in high frequency inverters, freewheeling, DC/DC converters, and polarity protection in commercial, industrial, and automotive applications.

MECHANICAL DATA

Case: SlimSMAW (DO-221AD)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 and HM3 suffix meet JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VSS8D5M15	UNIT	
Device marking code		5M15		
Maximum repetitive peak reverse voltage	V_{RRM}	150	V	
Maximum avarage forward rectified current (fig. 1)	I _{F(AV)} (1)	5	^	
Maximum average forward rectified current (fig.1)	I _{F(AV)} (2)	2	Α Α	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	100	А	
Operating junction temperature range	T _J ⁽³⁾	T _J ⁽³⁾ -40 to +175 T _{STG} -55 to +175		
Storage temperature range	T _{STG}			

Notes

- (1) Mounted on 30 mm x 30 mm aluminum PCB pad areas
- (2) Free air, mounted on recommended copper pad area
- (3) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	I _F = 2.5 A	T _A = 25 °C	V _E (1)	0.79	-	V	
	I _F = 5 A			1.03	1.15		
	I _F = 2.5 A	T _A = 125 °C	•	VF (··/	0.57	-	V
	I _F = 5 A			0.68	0.76		
Reverse current	$V_R = 100 \text{ V}$ $T_A = 25 \text{ °C}$ $T_A = 125 \text{ °C}$		0.01	-			
		T _A = 125 °C	I _R ⁽²⁾	0.7	-	mA	
	V _R = 150 V	T _A = 25 °C		-	0.18	IIIA	
		T _A = 125 °C		1	4		
Typical junction capacitance	4.0 V, 1 MHz		CJ	300	-	pF	

Notes

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

(2) Pulse test: pulse width ≤ 5 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise specified)				
PARAMETER SYMBOL TYP. MAX.				UNIT
Typical thormal registance	R ₀ JA (1)(2)	120	150	°C/W
Typical thermal resistance	R _{0JM} (3)	10	12	C/VV

Notes

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

(2) Thermal resistance junction-to-ambient to follow JEDEC® 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint

(3) Thermal resistance junction-to-mount to follow JEDEC 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
VSS8D5M15-M3/H	0.033	Н	3500	7" diameter plastic tape and reel	
VSS8D5M15-M3/I	0.033	I	14 000	13" diameter plastic tape and reel	
VSS8D5M15HM3/H (1)	0.033	Н	3500	7" diameter plastic tape and reel	
VSS8D5M15HM3/I (1)	0.033	I	14 000	13" diameter plastic tape and reel	

Note

(1) AEC-Q101 qualified

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

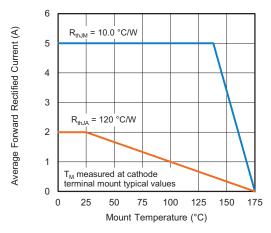


Fig. 1 - Maximum Forward Current Derating Curve

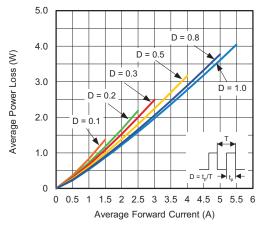


Fig. 2 - Forward Power Loss Characteristics

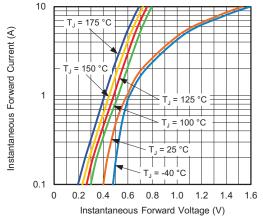


Fig. 3 - Typical Instantaneous Forward Characteristics

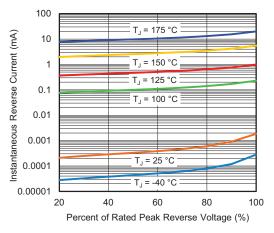


Fig. 4 - Typical Reverse Leakage Characteristics

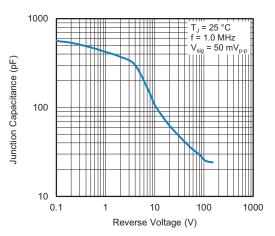


Fig. 5 - Typical Junction Capacitance

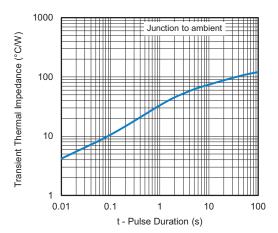


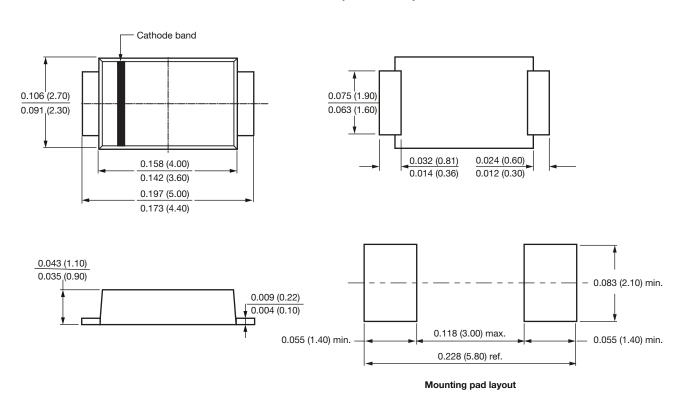
Fig. 6 - Typical Transient Thermal Impedance



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SlimSMAW (DO-221AD)





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