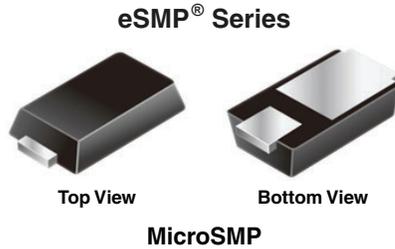


Surface Mount Trench MOS Barrier Schottky Rectifier



FEATURES

- Very low profile - typical height of 0.65 mm
- Ideal for automated placement
- Trench MOS Schottky technology
- Low forward voltage drop
- Low power loss, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT
HALOGEN
FREE

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 A
V_{RRM}	120 V
I_{FSM}	30 A
V_F at $I_F = 2$ A (125 °C)	0.65 V
T_J max.	175 °C
Package	MicroSMP
Diode variations	Single

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: MicroSMP

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-M3 - halogen-free, and 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 meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	V2PM12	UNIT
Device marking code		2MS	
Maximum repetitive peak reverse voltage	V_{RRM}	120	V
Maximum DC forward current	$I_{F(AV)}$ ⁽¹⁾	1.4	A
	$I_{F(AV)}$ ⁽²⁾	2	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Operating junction and storage temperature range	T_J ⁽³⁾ , T_{STG}	-40 to +175	°C

Notes

(1) Free air, mounted on recommended copper pad area

(2) Mounted on 8.0 mm x 8.0 mm pad area

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



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 1.0 A	T _A = 25 °C	V _F ⁽¹⁾	0.70	-	V
	I _F = 2.0 A	T _A = 25 °C		0.90	0.98	
	I _F = 1.0 A	T _A = 125 °C		0.57	-	
	I _F = 2.0 A	T _A = 125 °C		0.65	0.73	
Reverse current	V _R = 90 V	T _A = 25 °C	I _R ⁽²⁾	0.001	-	mA
		T _A = 125 °C		0.25	-	
	V _R = 120 V	T _A = 25 °C		-	0.05	
		T _A = 125 °C		0.5	2	
Typical junction capacitance	4.0 V, 1 MHz		C _J	140	-	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 noted)			
PARAMETER	SYMBOL	V2PM12	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾⁽²⁾	130	°C/W
	R _{θJM} ⁽³⁾	20	

Notes

- (1) The heat generated must be less than the thermal conductivity from junction-to-ambient: dP_D/dT_J < 1/ R_{θJA}
- (2) Free air, mounted on FR4 PCB, 2 oz. standard footprint, R_{θJA} - junction to ambient
- (3) Mounted on PCB with 8.0 mm x 8.0 mm copper pad areas, R_{θJM} - junction to mount

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V2PM12-M3/H	0.006	H	4500	7" diameter plastic tape and reel
V2PM12HM3/H ⁽¹⁾	0.006	H	4500	7" diameter plastic tape and reel

Note

- (1) AEC-Q101 qualified

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

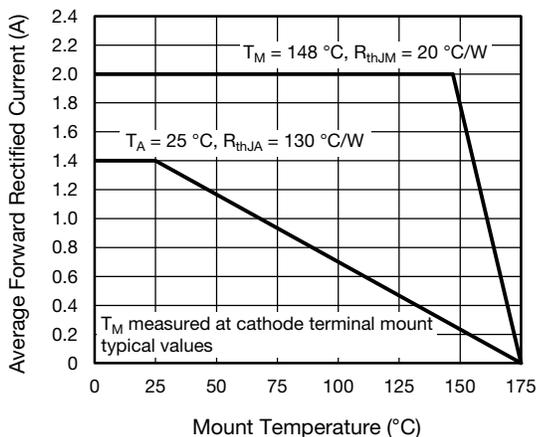


Fig. 1 - Maximum Forward Current Derating Curve

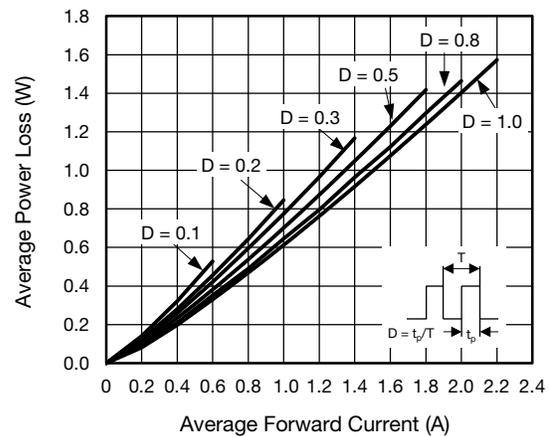


Fig. 2 - Average Power Loss Characteristics

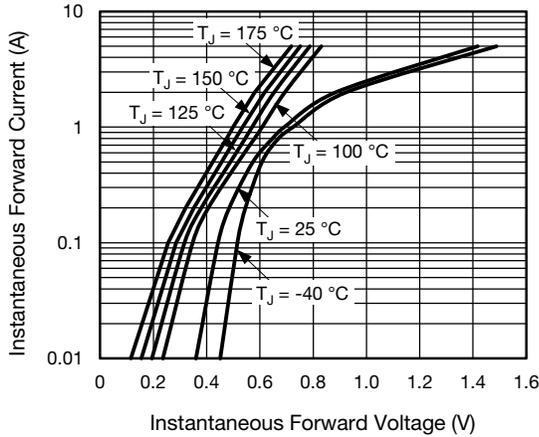


Fig. 3 - Typical Instantaneous Forward Characteristics

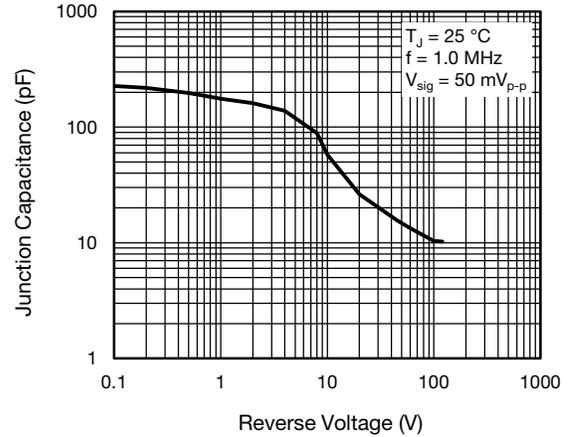


Fig. 5 - Typical Junction Capacitance

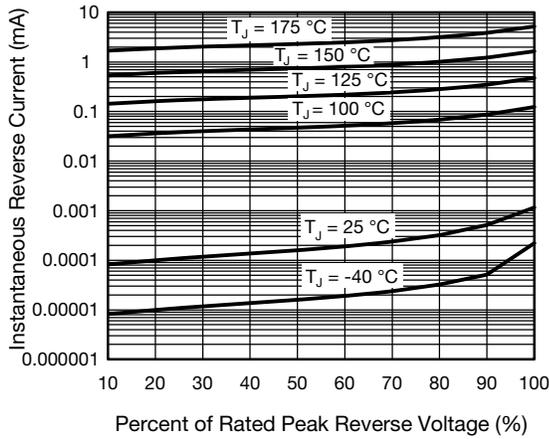


Fig. 4 - Typical Reverse Leakage Characteristics

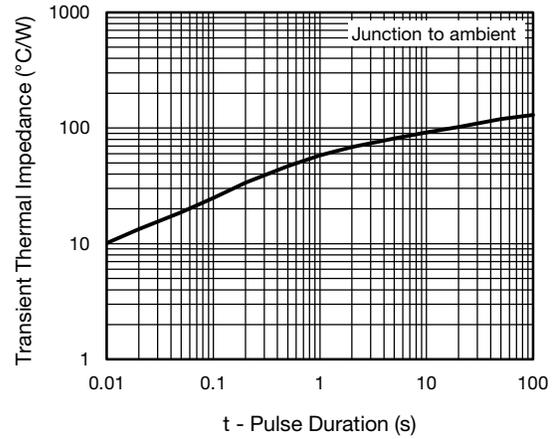
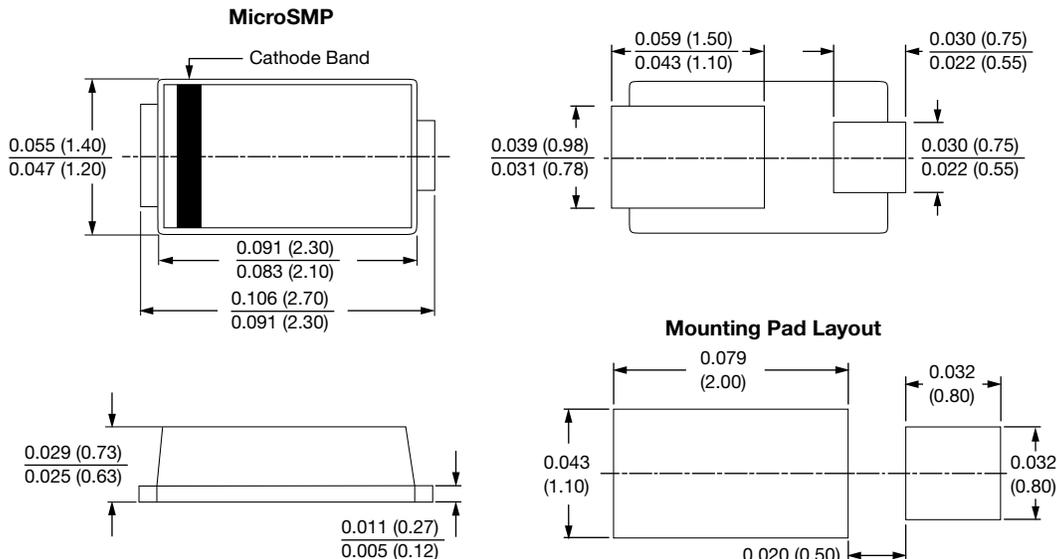


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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