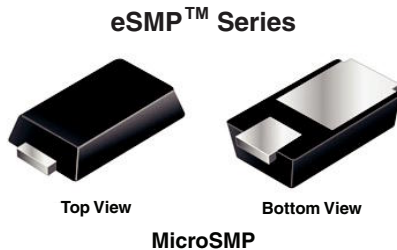


Surface Mount Schottky Barrier Rectifiers



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	30 V, 40 V
I_{FSM}	25 A
V_F at $I_F = 1.0$ A	0.41 V
T_J max.	150 °C

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

FEATURES

- Very low profile - typical height of 0.65 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Solder dip 265 °C max. 10 s, per JESD 22-A111
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**



MECHANICAL DATA

Case: MicroSMP

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free and RoHS compliant, 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: Color band denotes the cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	MSS1P3	MSS1P4	UNIT
Device marking code		13	14	
Maximum repetitive peak reverse voltage	V_{RRM}	30	40	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	1.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	25		A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

MSS1P3 & MSS1P4

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 0.5 A	T _J = 25 °C	V _F	0.41	-	V
	I _F = 1.0 A			0.48	0.55	
	I _F = 0.5 A	T _J = 125 °C		0.32	-	
	I _F = 1.0 A			0.41	0.46	
Maximum reverse current ⁽²⁾	Rated V _R	T _J = 25 °C T _J = 125 °C	I _R	8.5 4.5	200 15	μA mA
Typical junction capacitance	4.0 V, 1 MHz		C _J	50	-	pF

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	MSS1P3	MSS1P4	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}	125		°C/W
	R _{θJL}	30		
	R _{θJC}	40		

Note

⁽¹⁾ Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 6.0 mm x 6.0 mm copper pad areas
R_{θJL} is measured at the terminal of cathode band. R_{θJC} is measured at the top center of the body

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MSS1P4-M3/89A	0.006	89A	4500	7" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

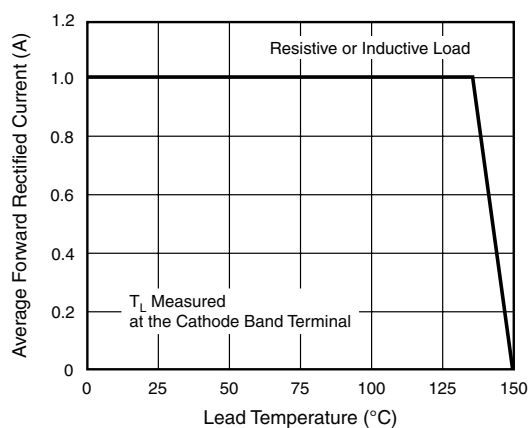


Figure 1. Maximum Forward Current Derating Curve

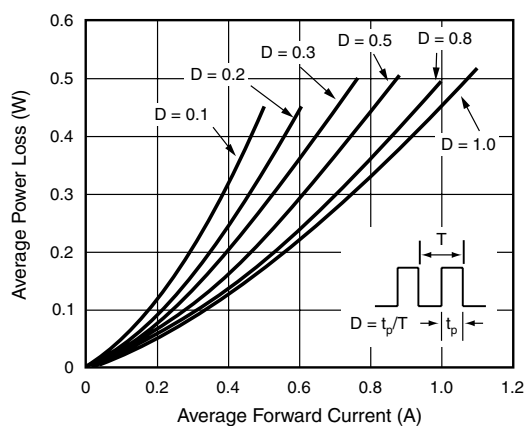


Figure 2. Forward Power Loss Characteristics

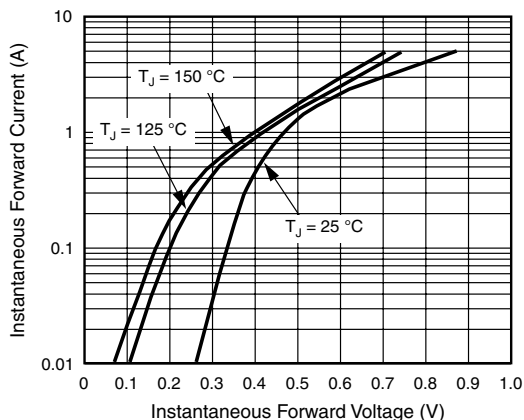


Figure 3. Typical Instantaneous Forward Characteristics

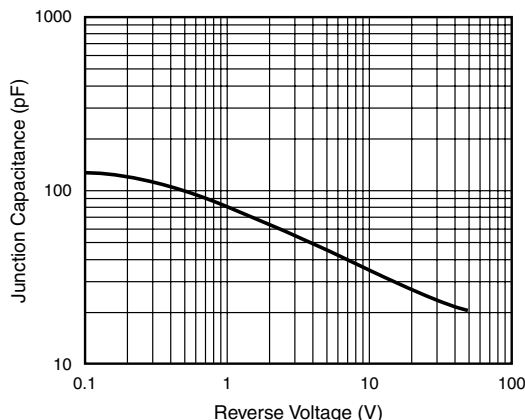


Figure 5. Typical Junction Capacitance

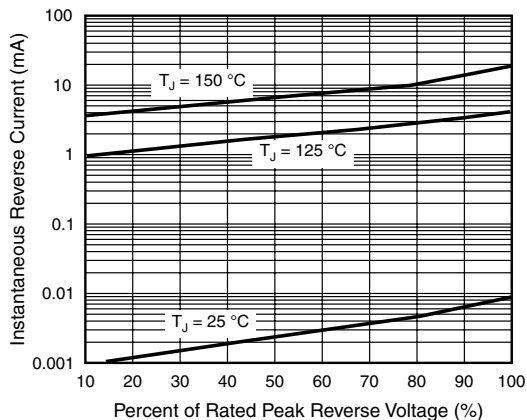


Figure 4. Typical Reverse Characteristics

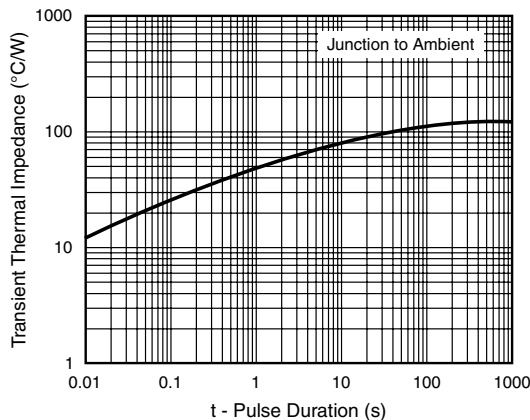
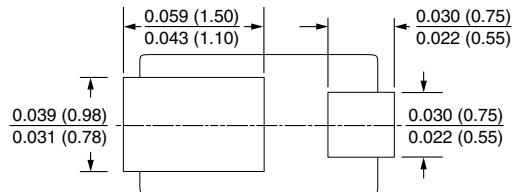
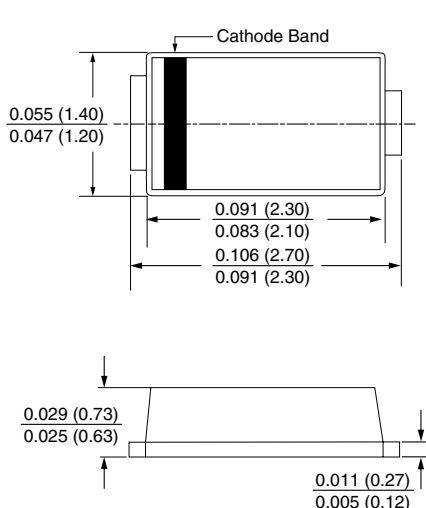


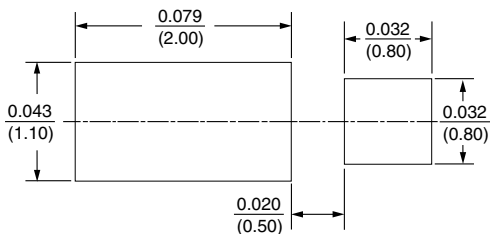
Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

MicroSMP



Mounting Pad Layout





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