

AUTOMOTIVE

Available

COMPLIANT

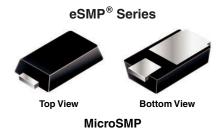
HALOGEN

FREE



Vishay General Semiconductor

Surface Mount Schottky Barrier Rectifiers



PRIMARY CHARACTERISTICS				
I _{F(AV)}	1.0 A			
V _{RRM}	50 V, 60 V			
I _{FSM}	25 A			
V _F at I _F = 1.0 A	0.52 V			
T _J max.	150 °C			

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/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
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC 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, RoHS compliant, and commercial grade

Base P/NHM3 halogen-free, RoHS compliant, and automotive grade

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

M3 suffix meets JESD 201 class 1A whisker test, 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	MSS1P5	MSS1P6	UNIT	
Device marking code		15	16		
Maximum repetitive peak reverse voltage	V_{RRM}	50 60		V	
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	1.0		Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	25		А	
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150		°C	

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST C	TEST CONDITIONS		TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage	I _F = 0.5 A	——— T₁ – 25 °C	V (1)	0.45	-	V	
	I _F = 1.0 A			0.56	0.68		
	I _F = 0.5 A	T _J = 125 °C	V _F ⁽¹⁾	V F ('')	0.40	-	v
	I _F = 1.0 A		IJ = 125 °C	0.52	0.60		
Maximum reverse current	Dated V	$V_{R} = T_{J} = 25 ^{\circ}C$ $T_{J} = 125 ^{\circ}C$	1 (2)	20	150	μΑ	
	Rated V _R		I _R ⁽²⁾	7.0	12	mA	
Typical junction capacitance	4.0 V, 1 MI	4.0 V, 1 MHz		40	-	pF	

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

(2) Pulse test: Pulse width ≤ 40 ms

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MSS1P5, MSS1P6

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	MSS1P5 MSS1P6		UNIT	
	R _{0JA} (1)	125		°C/W	
Typical thermal resistance	R _{0JL} (1)	30			
	R ₀ JC (1)	40			

Note

 $^{(1)}$ Thermal resistance from junction to ambient and junction to lead mounted on PCB with 6.0 mm x 6.0 mm copper pad areas $R_{\theta JL}$ is measured at the terminal of cathode band. $R_{\theta JC}$ 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		
MSS1P6-M3/89A	0.006	89A	4500	7" diameter plastic tape and reel		
MSS1P6HM3/89A (1)	0.006	89A	4500	7" diameter plastic tape and ree		

Note

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

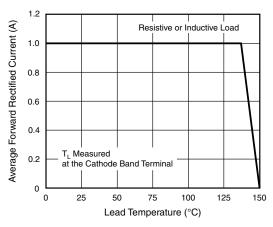


Fig. 1 - Maximum Forward Current Derating Curve

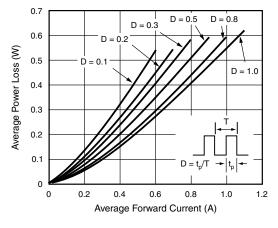


Fig. 2 - Forward Power Loss Characteristics

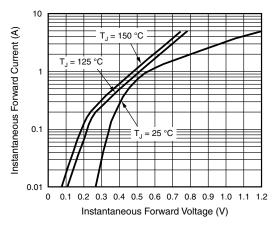


Fig. 3 - Typical Instantaneous Forward Characteristics

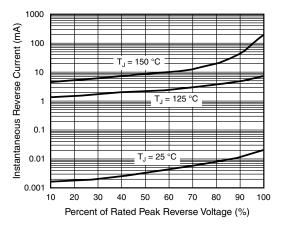


Fig. 4 - Typical Reverse Characteristics

⁽¹⁾ Automotive grade



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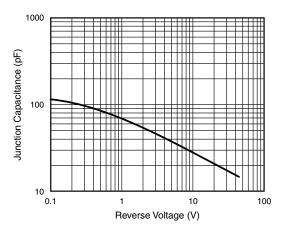


Fig. 5 - Typical Junction Capacitance

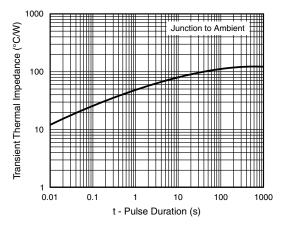
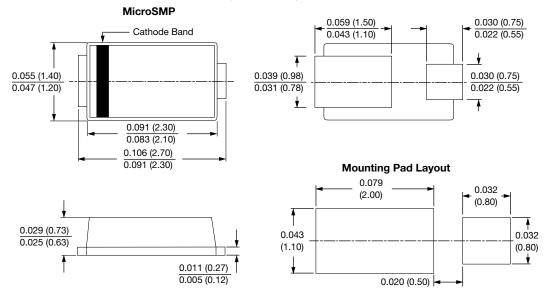


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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