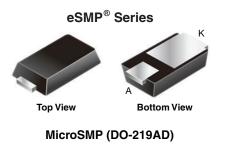
Vishay General Semiconductor

Surface-Mount Schottky Barrier Rectifiers



www.vishay.com

Anode O Cathode

LINKS TO ADDITIONAL RESOURCES



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			
Package	MicroSMP (DO-219AD)			
Circuit configuration	Single			

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 available - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: MicroSMP (DO-219AD) Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Base P/NHM3_X - halogen-free, RoHS-compliant, and AEC-Q101 gualified

("_X" denotes revision code e.g. A, B,...)

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

M3 suffix meets JESD 201 class 2 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	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		А		
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		

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COMPLIANT

HALOGEN

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CO	TEST CONDITIONS		TYP.	MAX.	UNIT
Maximum instantaneous forward voltage	I _F = 0.5 A	$I_F = 0.5 \text{ A}$ $I_F = 1.0 \text{ A}$ $T_J = 25 \text{ °C}$	V _F ⁽¹⁾	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	Dated V	T _J = 25 °C	I _R ⁽²⁾	8.5	200	μA
	Rated V _R	T _J = 125 °C		4.5	15	mA
Typical junction capacitance	4.0 V, 1 MH	4.0 V, 1 MHz		50	-	pF

Notes

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

 $^{(2)}$ Pulse test: Pulse width $\leq 40\ ms$

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MSS1P3	MSS1P4	UNIT	
	R _{0JA} ⁽¹⁾	125		°C/W	
Typical thermal resistance	R _{0JL} ⁽¹⁾	30			
	R _{0JC} ⁽¹⁾	4	0		

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		
MSS1P4-M3/89A	0.006	89A	4500	7" diameter plastic tape and reel		
MSS1P4HM3_A/H ⁽¹⁾	0.006	Н	4500	7" diameter plastic tape and reel		

Note

(1) AEC-Q101 qualified

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

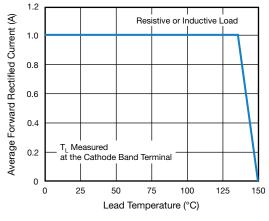


Fig. 1 - Maximum Forward Current Derating Curve

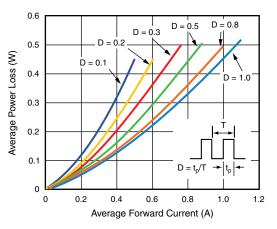
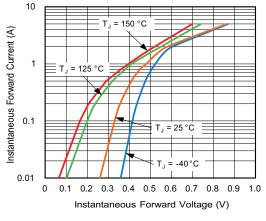


Fig. 2 - Forward Power Loss Characteristics



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Fig. 3 - Typical Instantaneous Forward Characteristics

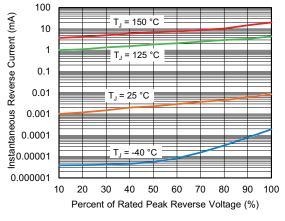


Fig. 4 - Typical Reverse Characteristics

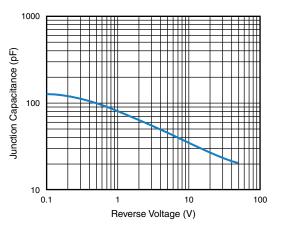


Fig. 5 - Typical Junction Capacitance

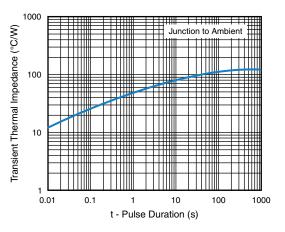
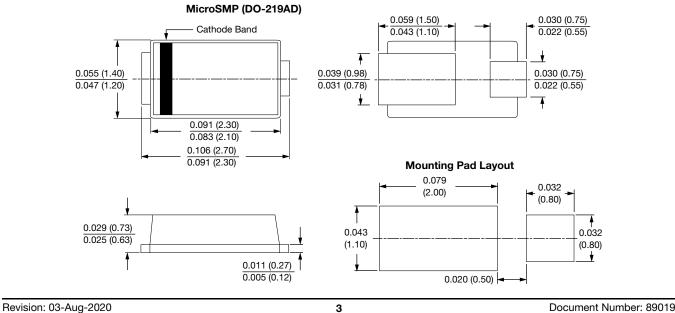


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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