

Vishay General Semiconductor

High Voltage Surface-Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



www.vishay.com

SMC (DO-214AB)

Cathode O Anode

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I _{F(AV)}	3.0 A				
V _{RRM}	90 V, 100 V				
I _{FSM}	100 A				
V _F	0.65 V				
I _R	20 µA				
T _J max.	175 °C				
Package	SMC (DO-214AB)				
Circuit configuration	Single				

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

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

M3 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	SS3H9	SS3H10	UNIT	
Device marking code		MS9 MS10			
Maximum repetitive peak reverse voltage	V _{RRM}	90	100	V	
Working peak reverse voltage	V _{RWM}	90	100	V	
Maximum DC blocking voltage	V _{DC}	90 100		V	
Maximum average forward rectified current at: T _L = 115 °C	I _{F(AV)}	3.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	1	А		
Peak repetitive reverse surge current at $t_p = 2.0 \ \mu s$, 1 kHz	I _{RRM}	1.0			
Critical rate of rise of reverse voltage	dV/dt	10 000			
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +175 °C			

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HALOGEN

FREE



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ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SS3H9	SS3H10	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 3.0 A	T _J = 25 °C	V	0.8 0.65		V
		T _J = 125 °C	V _F			
Maximum reverse current at rated $V_{R}^{\ (2)}$		T _J = 25 °C	I	20		μA
		T _J = 125 °C	IR	4	4	mA

Notes

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

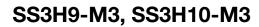
⁽²⁾ Pulse test: Pulse width \leq 40 ms

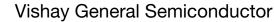
THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SS3H9	SS3H10	UNIT		
Typical thermal resistance, junction to lead at $T_L = 25 \text{ °C}$	R _{θJL}	20		°C/W		
Typical thermal resistance, junction to ambient ⁽¹⁾	$R_{\theta JA}$	50		0/10		

Note

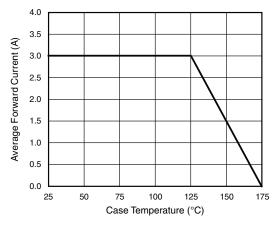
⁽¹⁾ Units mounted on PCB with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SS3H9-M3/57T	0.235	57T	850	7" diameter plastic tape and reel		
SS3H9-M3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel		





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



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Fig. 1 - Forward Current Derating Curve

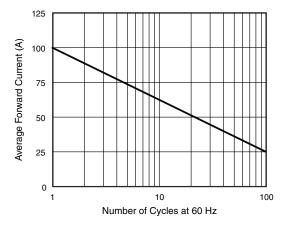


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

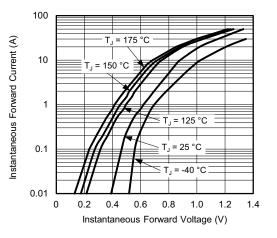


Fig. 3 - Typical Instantaneous Forward Characteristics

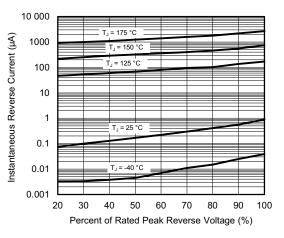


Fig. 4 - Typical Reverse Characteristics

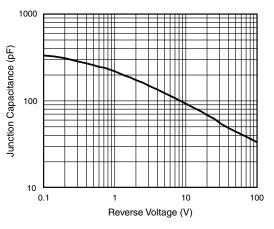


Fig. 5 - Typical Junction Capacitance

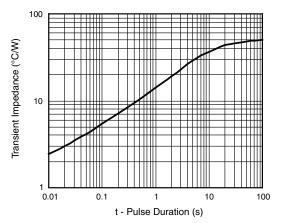


Fig. 6 - Typical Transient Thermal Impedance

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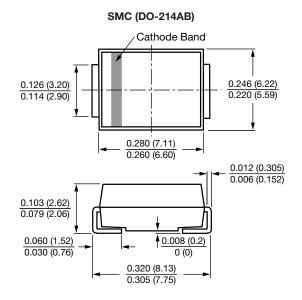
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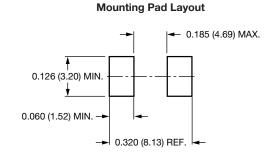


SS3H9-M3, SS3H10-M3

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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