

High Voltage Surface-Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



SMC (DO-214AB)

Cathode  Anode 

LINKS TO ADDITIONAL RESOURCES



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 www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

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

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 μ A
T_J max.	175 °C
Package	SMC (DO-214AB)
Circuit configuration	Single

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		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100		A
Peak repetitive reverse surge current at $t_p = 2.0$ μ s, 1 kHz	I_{RRM}	1.0		A
Critical rate of rise of reverse voltage	dV/dt	10 000		V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SS3H9	SS3H10	UNIT
Maximum instantaneous forward voltage ⁽¹⁾		$I_F = 3.0 \text{ A}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	V_F	0.8	V
Maximum reverse current at rated V_R ⁽²⁾					0.65	
Maximum reverse current at rated V_R ⁽²⁾			$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	I_R	20	μA
					4	

Notes

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

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

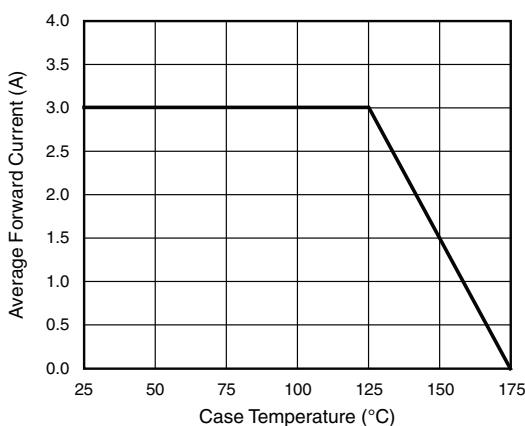
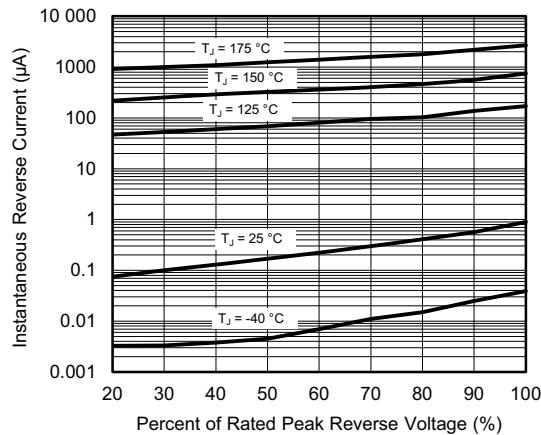
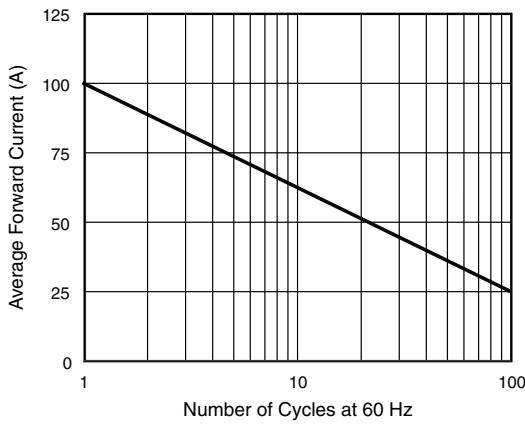
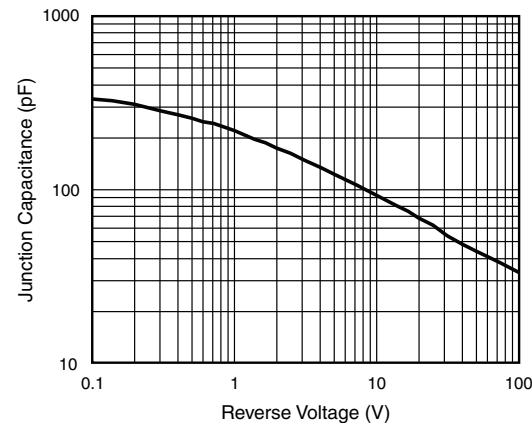
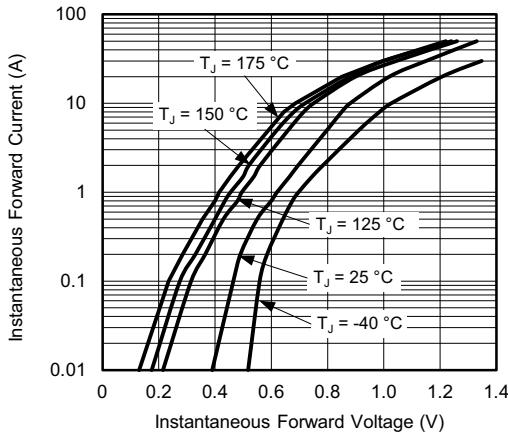
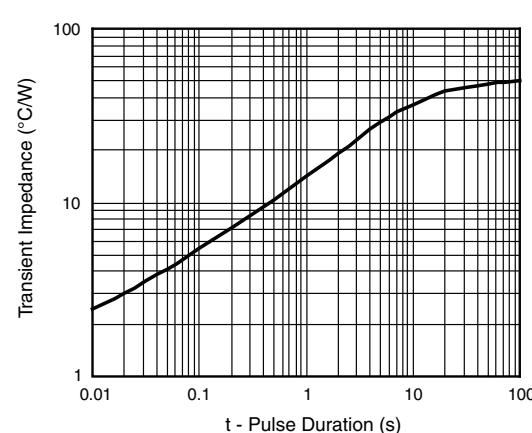
PARAMETER	SYMBOL	SS3H9	SS3H10	UNIT
Typical thermal resistance, junction to lead at $T_L = 25^\circ\text{C}$	$R_{\theta JL}$	20		
Typical thermal resistance, junction to ambient ⁽¹⁾	$R_{\theta JA}$	50		$^\circ\text{C/W}$

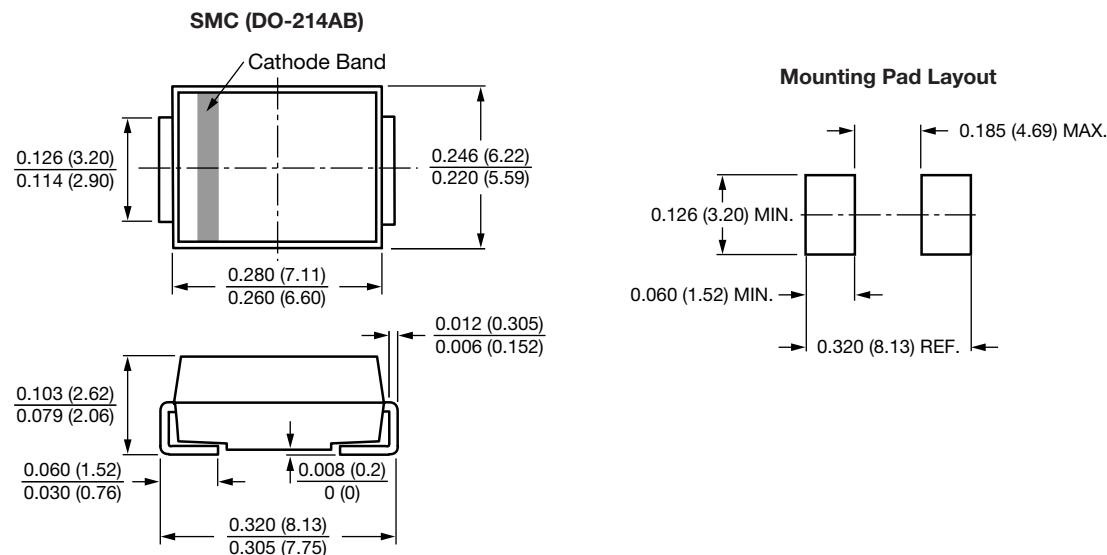
Note

(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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

Fig. 4 - Typical Reverse Characteristics

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

Fig. 5 - Typical Junction Capacitance

Fig. 3 - Typical Instantaneous Forward Characteristics

Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)


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