

SS3H9 & SS3H10

Vishay General Semiconductor

High-Voltage Surface Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



DO-214AB (SMC)

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
- Solder dip 260 °C 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

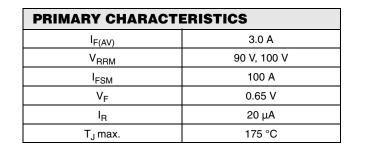
E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 gualified), meets JESD 201 class 2 whisker test

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

Document Number: 88752

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Revision: 19-May-08

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RoHS COMPLIANT

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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 I _F = 3.0 A	T _J = 25 °C T _J = 125 °C	V _F	0 0.	-	v	
Maximum reverse current at rated $V_R^{(2)}$		T _J = 25 °C T _J = 125 °C	I _R			μA 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 $T_L = 25 ^{\circ}\text{C}$	R _{θJL}	20		°C/W		
Typical thermal resistance, junction to ambient ⁽¹⁾	$R_{ ext{ heta}JA}$	50		0/W		

Note:

(1) Units mounted on P.C.B. with 0.55 x 0.55" (14 x 14 mm) copper pad areas

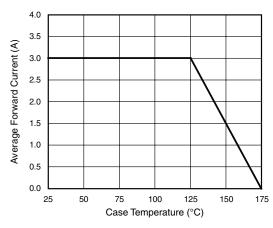
ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SS3H9-E3/57T	0.235	57T	850	7" diameter plastic tape and reel		
SS3H9-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel		
SS3H9HE3/57T ⁽¹⁾	0.235	57T	850	7" diameter plastic tape and reel		
SS3H9HE3/9AT ⁽¹⁾	0.235	9AT	3500	13" diameter plastic tape and reel		

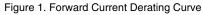
Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)





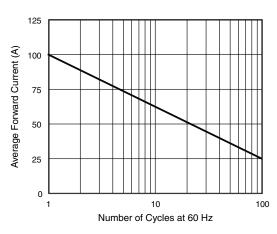


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

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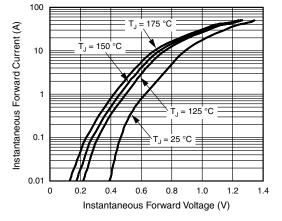


Figure 3. Typical Instantaneous Forward Characteristics

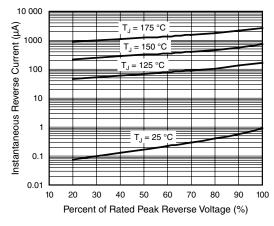


Figure 4. Typical Reverse Characteristics

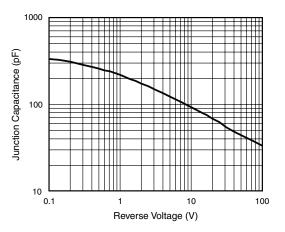


Figure 5. Typical Junction Capacitance

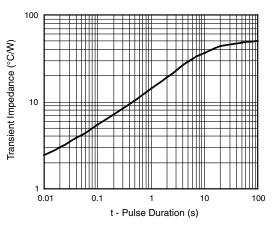
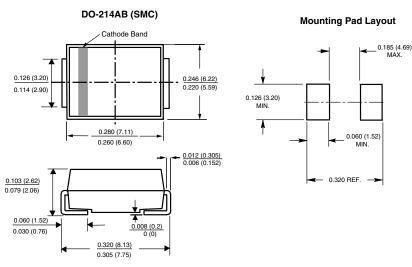


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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