

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



RoHS
COMPLIANT

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
$T_J \text{ max.}$	175 °C

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

Notes:(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$

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

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

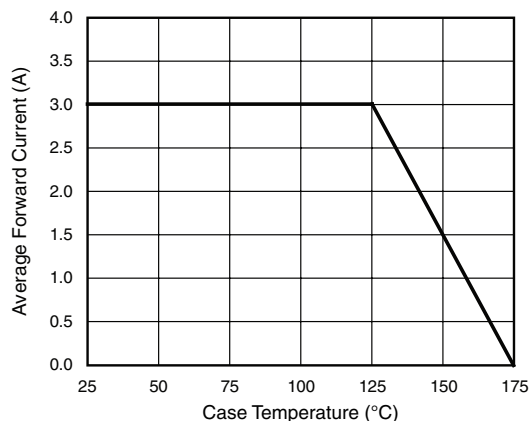
RATINGS AND CHARACTERISTICS CURVES $(T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

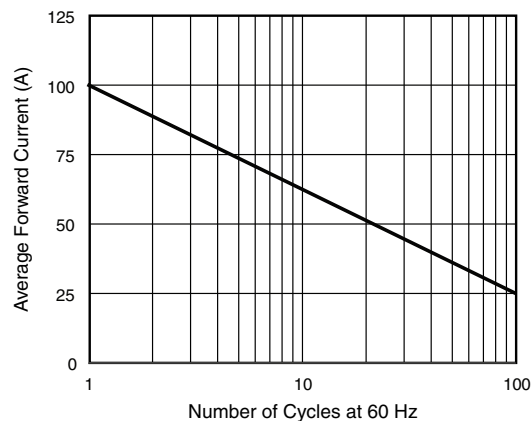


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

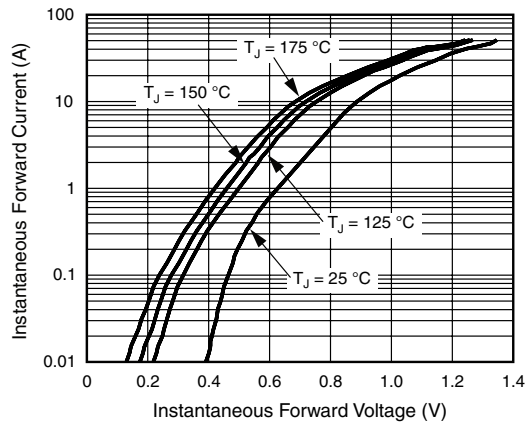


Figure 3. Typical Instantaneous Forward Characteristics

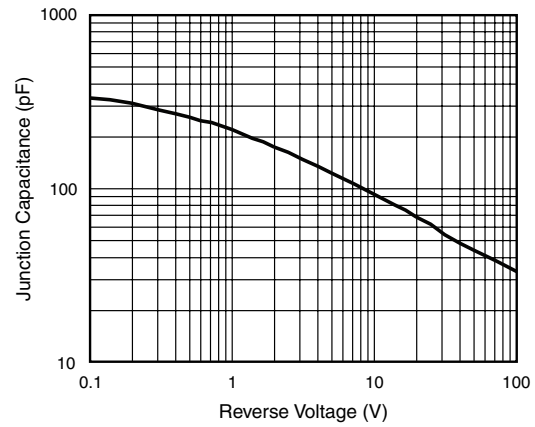


Figure 5. Typical Junction Capacitance

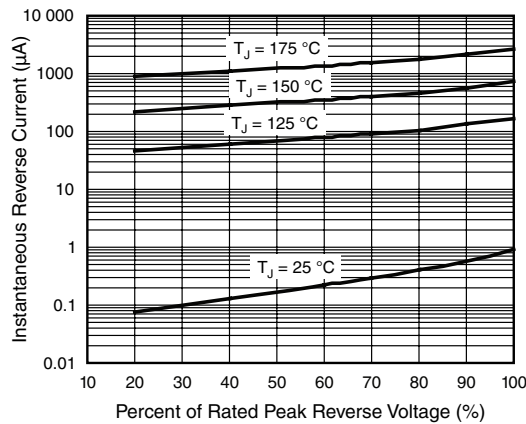


Figure 4. Typical Reverse Characteristics

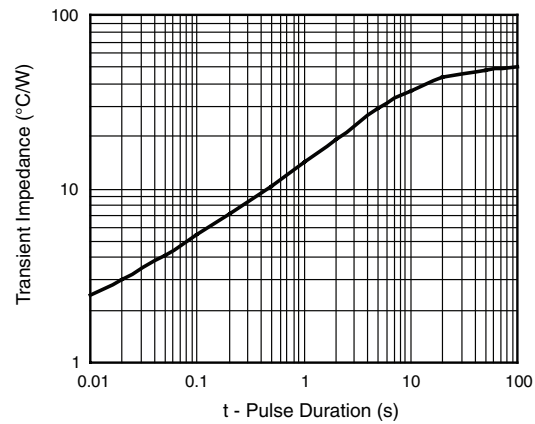
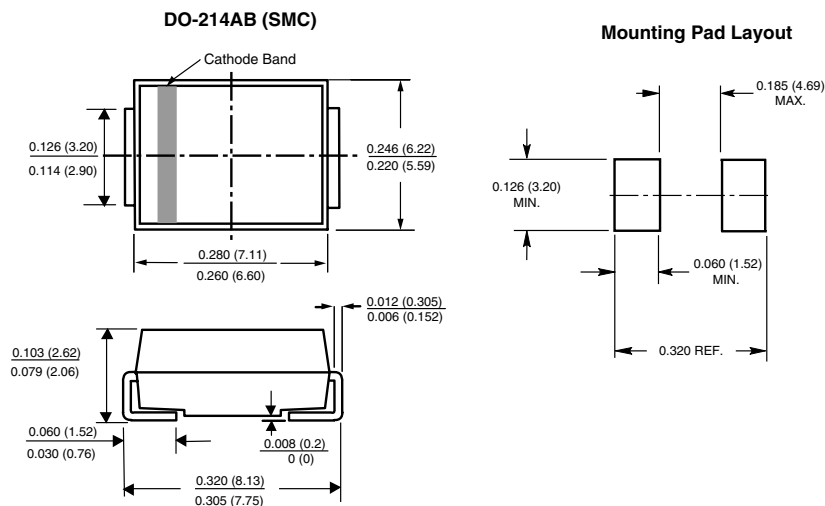


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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