

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-020C, LF max peak of 260 °C
- Solder Dip 260 °C 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


MAJOR RATINGS AND 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

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, free-wheeling, 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-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

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	10000		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	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 3.0\text{ A}$, $T_j = 25\text{ }^\circ\text{C}$ $I_F = 3.0\text{ A}$, $T_j = 125\text{ }^\circ\text{C}$	V_F	0.8 0.65		V
Maximum DC reverse current at rated DC blocking voltage	$T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$	I_R	20 4		μA mA

Note:

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

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

Note:

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

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS3H9-E3/57T	0.235	57T	850	7" Diameter Plastic Tape & Reel
SS3H9-E3/9AT	0.235	9AT	3500	13" Diameter Plastic Tape & Reel

RATINGS AND CHARACTERISTICS CURVES

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

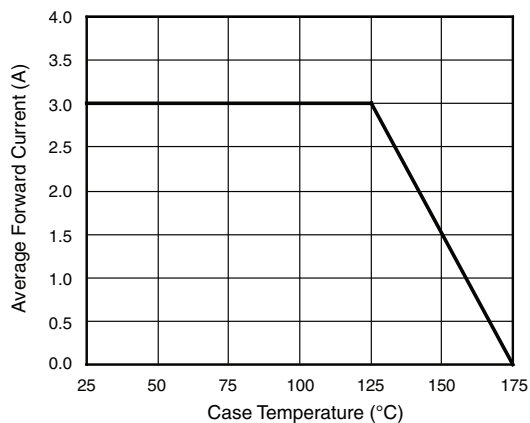


Figure 1. Forward Current Derating Curve

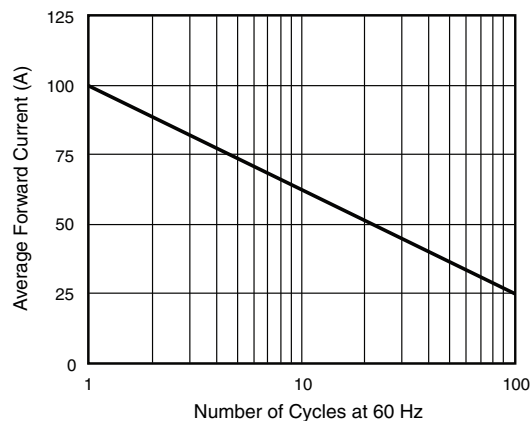


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

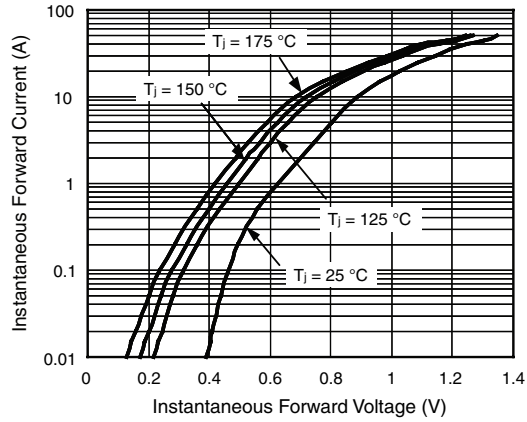


Figure 3. Typical Instantaneous Forward Characteristics

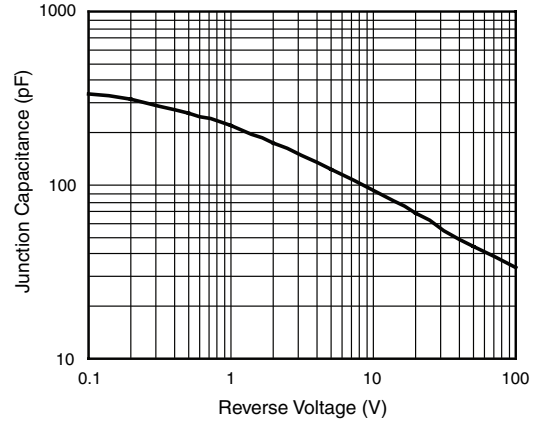


Figure 5. Typical Junction Capacitance

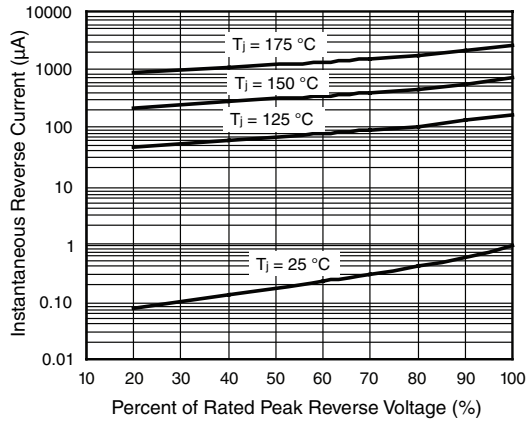


Figure 4. Typical Reverse Characteristics

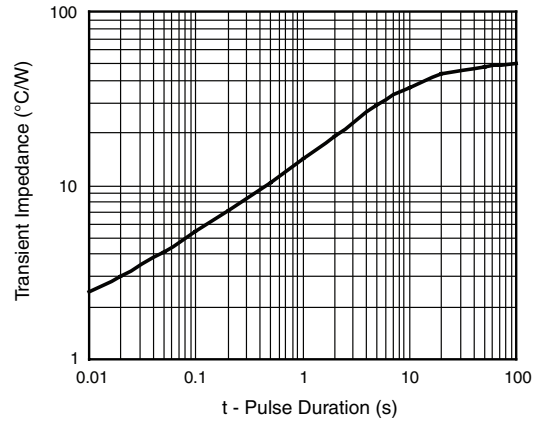
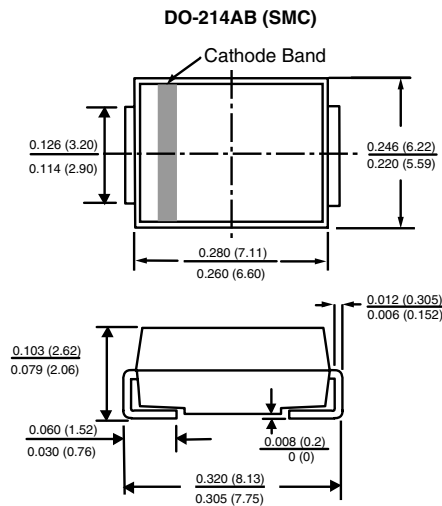
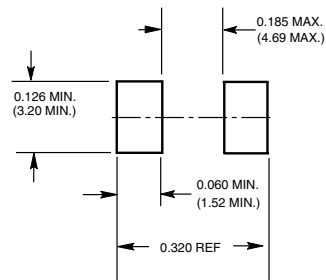


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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