

## High-Voltage Surface Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance


**DO-214AC (SMA)**
**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**

$I_{F(AV)}$	1.0 A
$V_{RRM}$	90 V to 100 V
$I_{FSM}$	50 A
$V_F$	0.62 V
$I_R$	1.0 $\mu$ A
$T_J$ 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-214AC (SMA)

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	SS1H9	SS1H10	UNIT
Device marking code		S9	S10	
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 (Fig. 1)	$I_{F(AV)}$	1.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	50		A
Peak repetitive reverse surge current at $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0		A
Storage temperature range	$T_{STG}$	- 65 to + 175		°C
Maximum operating temperature	$T_J$	175		°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SS1H9	SS1H10	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 1.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.77	V	
	I <sub>F</sub> = 1.0 A	T <sub>J</sub> = 125 °C		0.62		
	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 25 °C		0.86		
	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 125 °C		0.70		
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	1.0 0.5	μA mA	

**Notes:**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS1H9	SS1H10	UNIT
Maximum thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	88		°C/W
	R <sub>θJL</sub>	30		

**Note:**

- (1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS1H10-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SS1H10-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SS1H10HE3/61T <sup>(1)</sup>	0.064	61T	1800	7" diameter plastic tape and reel
SS1H10HE3/5AT <sup>(1)</sup>	0.064	5AT	7500	13" diameter plastic tape and reel

**Note:**

- (1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

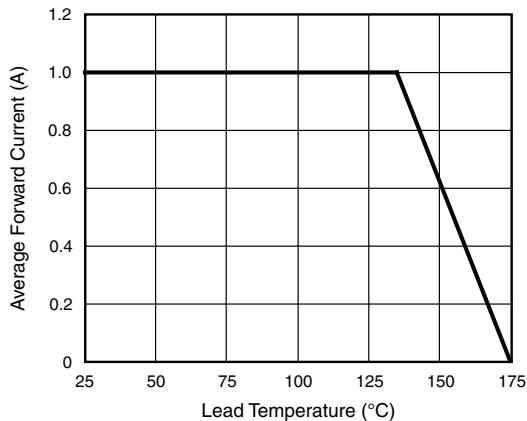


Figure 1. Forward Current Derating Curve

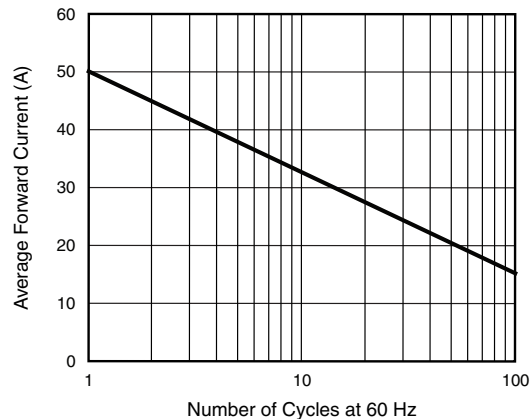


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

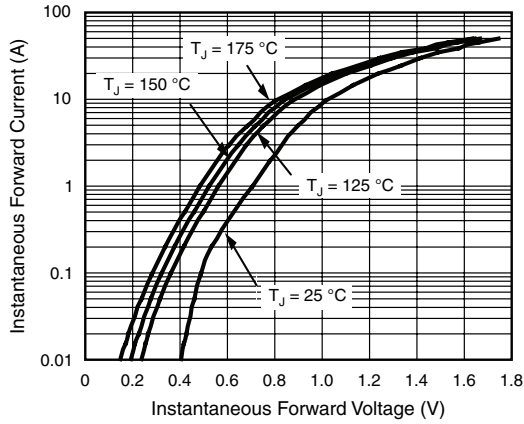


Figure 3. Typical Instantaneous Forward Characteristics

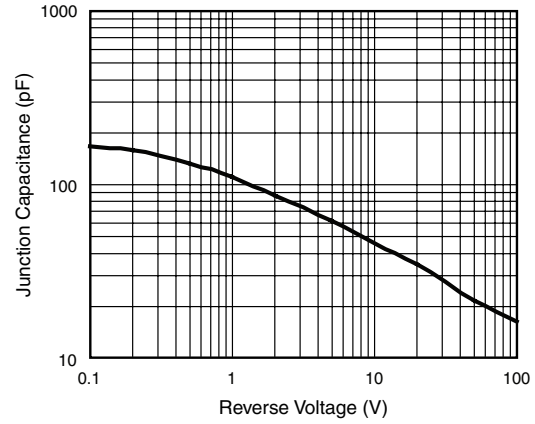


Figure 5. Typical Junction Capacitance

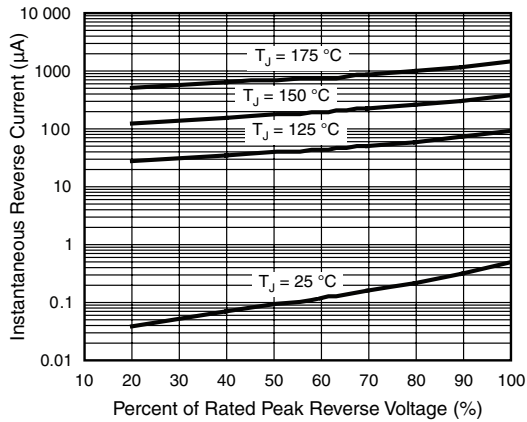


Figure 4. Typical Reverse Characteristics

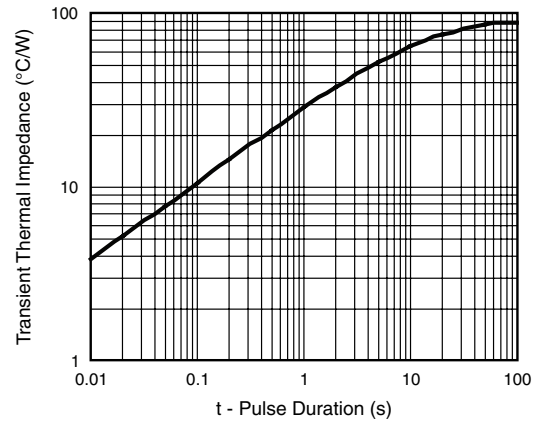
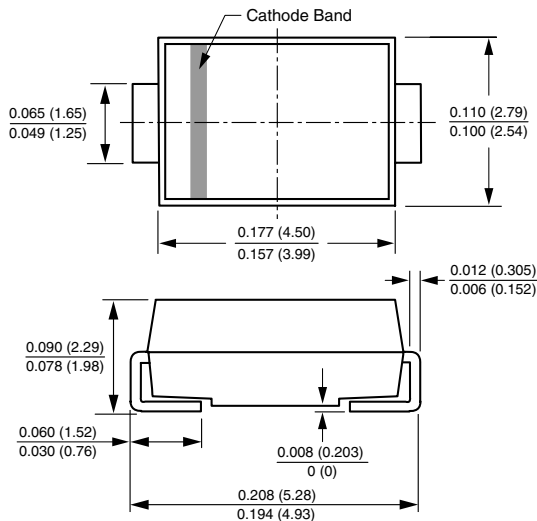


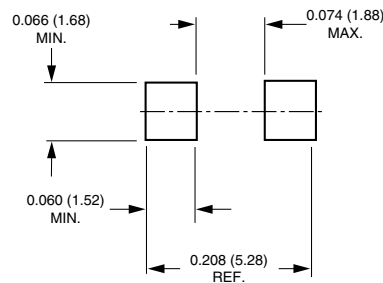
Figure 6. Typical Transient Thermal

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-214AC (SMA)



#### Mounting Pad Layout





## Disclaimer

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