

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-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

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

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 | 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 (see 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 $t_p = 2.0$ μ 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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|---|--------|------------|--------|---------------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | SS1H9 | SS1H10 | UNIT |
| Maximum instantaneous forward voltage at: ⁽¹⁾ | $I_F = 1.0\text{ A}$, $T_j = 25\text{ }^\circ\text{C}$ | V_F | 0.77 | | V |
| | $I_F = 1.0\text{ A}$, $T_j = 125\text{ }^\circ\text{C}$ | | 0.62 | | |
| | $I_F = 2.0\text{ A}$, $T_j = 25\text{ }^\circ\text{C}$ | | 0.86 | | |
| | $I_F = 2.0\text{ A}$, $T_j = 125\text{ }^\circ\text{C}$ | | 0.70 | | |
| Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾ | $T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$ | I_R | 1.0 0.5 | | 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 | SS1H9 | SS1H10 | UNIT |
| Maximum thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 88 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 30 | | |

Note:

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

| ORDERING INFORMATION | | | | |
|-----------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SS1H10-E3/61T | 0.064 | 61T | 1800 | 7" Diameter Plastic Tape & Reel |
| SS1H10-E3/5AT | 0.064 | 5AT | 7500 | 13" Diameter Plastic Tape & Reel |

RATINGS AND CHARACTERISTICS CURVES

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

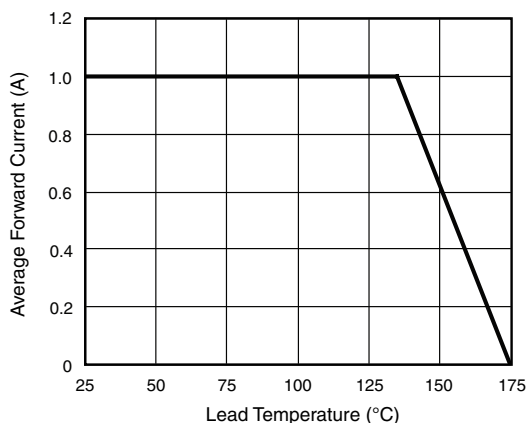


Figure 1. Forward Current Derating Curve

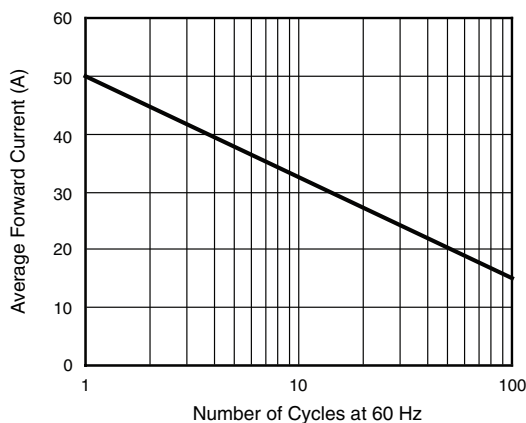


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

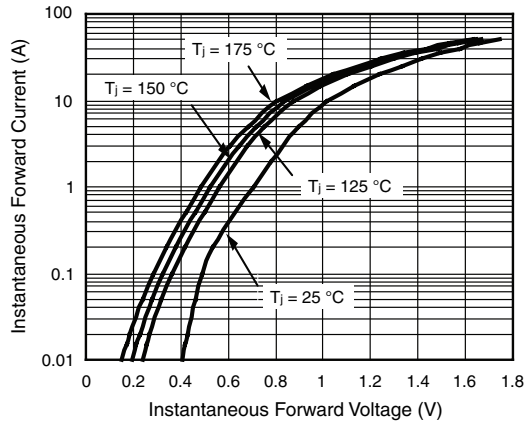


Figure 3. Typical Instantaneous Forward Characteristics

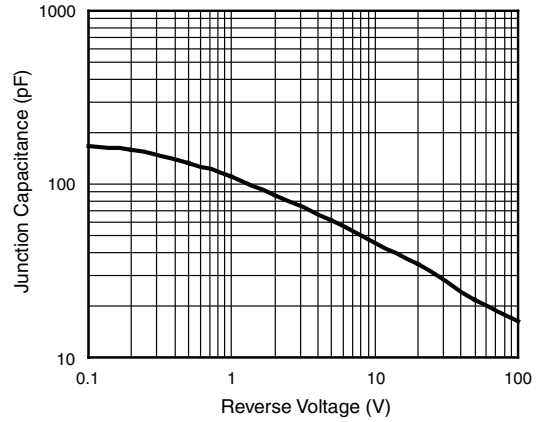


Figure 5. Typical Junction Capacitance

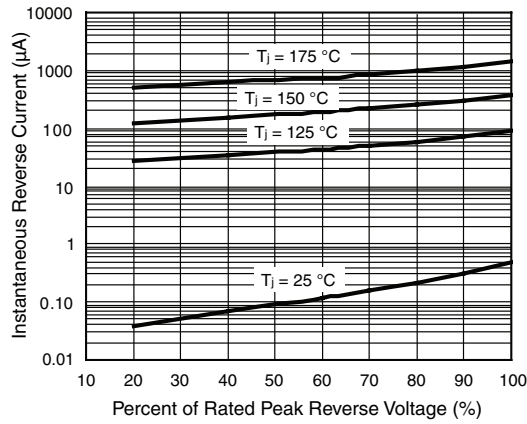


Figure 4. Typical Reverse Characteristics

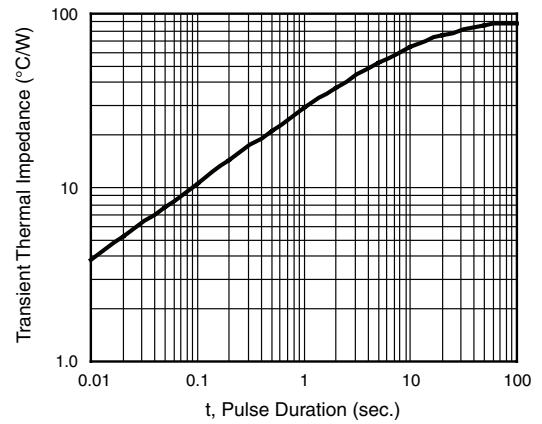
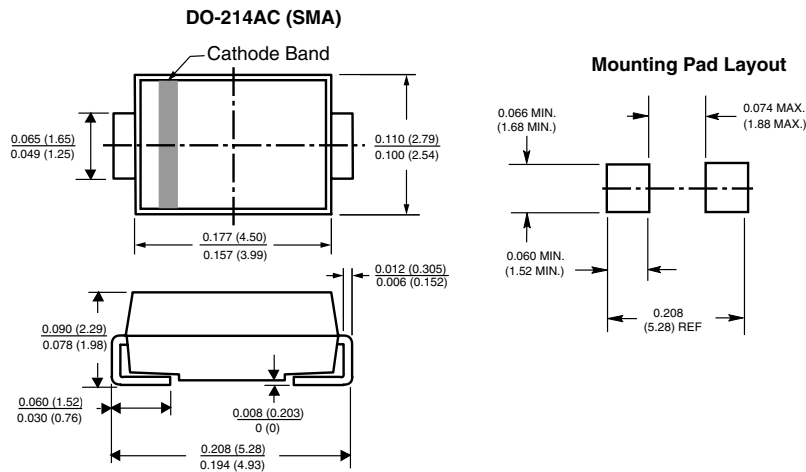


Figure 6. Typical Transient Thermal

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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