

High Voltage Surface-Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



SMC (DO-214AB)

Cathode  Anode

LINKS TO ADDITIONAL RESOURCES



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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

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 max. | 175 °C |
| Package | SMC (DO-214AB) |
| Circuit configuration | Single |

MECHANICAL DATA

Case: SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix 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 | UNIT |
|--|------------------------|-------------------------|----------------|-------|--------|------|
| Maximum instantaneous forward voltage ⁽¹⁾ | I _F = 3.0 A | T _J = 25 °C | V _F | 0.8 | | V |
| | | T _J = 125 °C | | 0.65 | | |
| Maximum reverse current at rated V _R ⁽²⁾ | | T _J = 25 °C | I _R | 20 | | μA |
| | | T _J = 125 °C | | 4 | | 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 °C | R _{θJL} | 20 | | °C/W |
| Typical thermal resistance, junction to ambient ⁽¹⁾ | R _{θJA} | 50 | | |

Note⁽¹⁾ Units mounted on PCB with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|------------------------------------|
| SS3H9-M3/57T | 0.235 | 57T | 850 | 7" diameter plastic tape and reel |
| SS3H9-M3/9AT | 0.235 | 9AT | 3500 | 13" diameter plastic tape and reel |

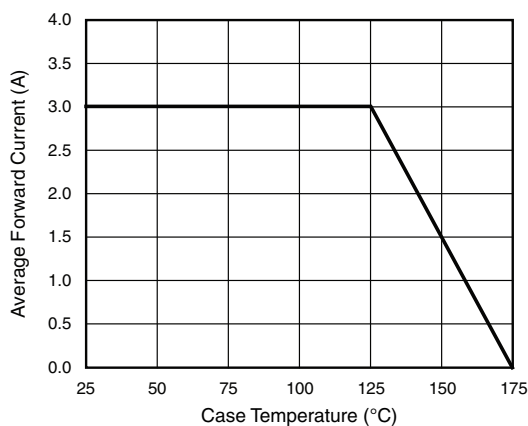
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

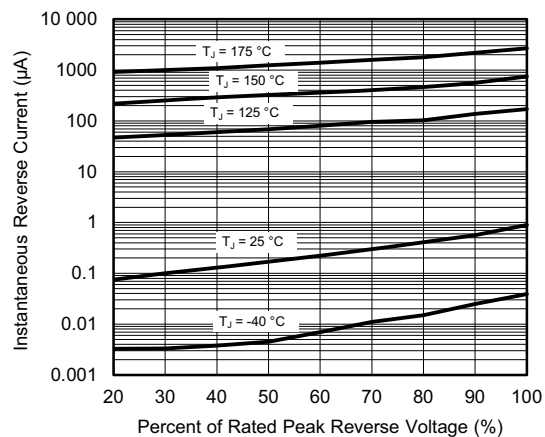


Fig. 4 - Typical Reverse Characteristics

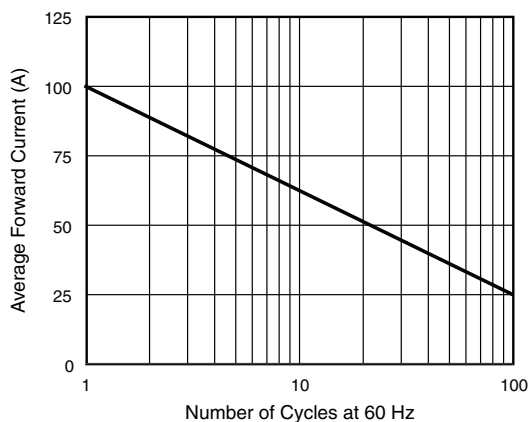


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

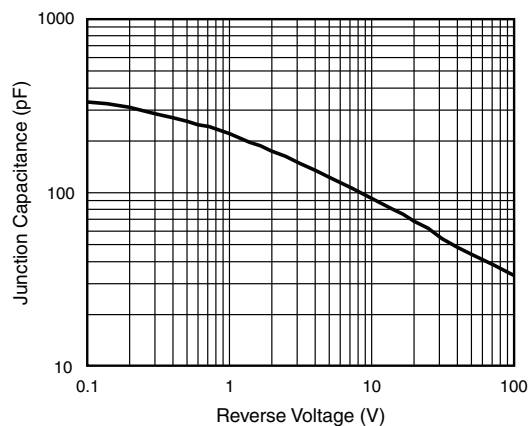


Fig. 5 - Typical Junction Capacitance

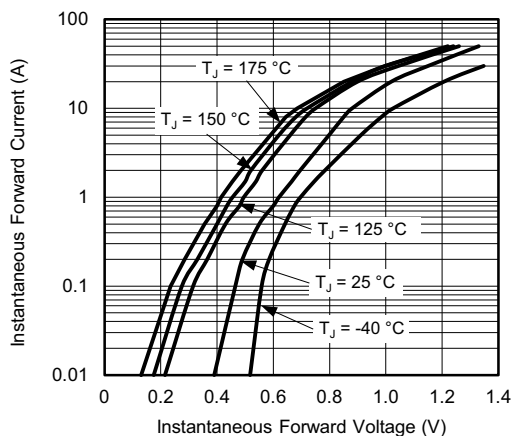


Fig. 3 - Typical Instantaneous Forward Characteristics

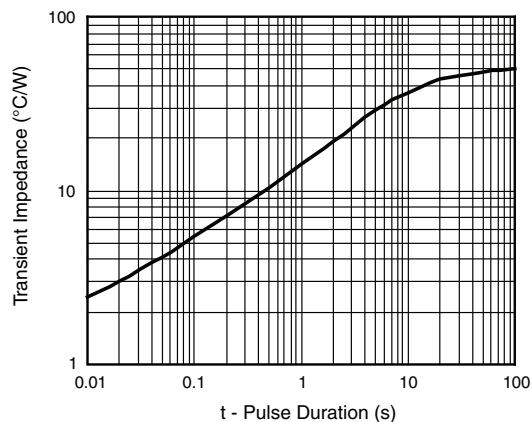
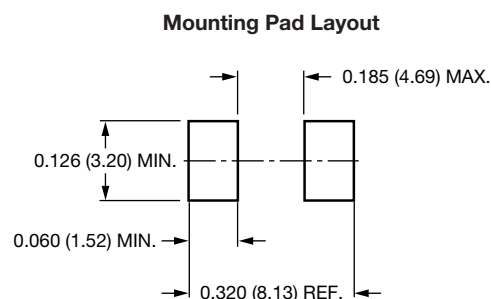
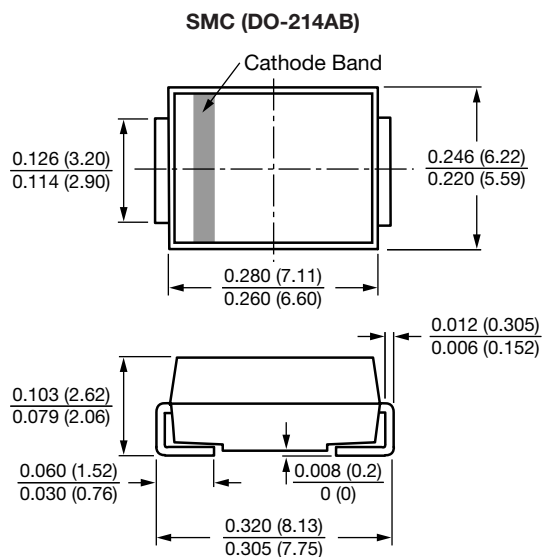


Fig. 6 - Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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