# Low $V_F$ Surface-Mount Schottky Rectifier

**SMA (DO-214AC)**

Cathode ○—▶|—○ Anode

## FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Very low forward voltage drop
- 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

## LINKS TO ADDITIONAL RESOURCES

3D Models

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

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

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 1.5 A |
| $V_{RRM}$ | 20 V, 30 V |
| $I_{FSM}$ | 50 A |
| $V_F$ | 0.34 V |
| $T_J$ max. | 125 °C |
| Package | SMA (DO-214AC) |
| Circuit configuration | Single |

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | SL12 | SL13 | UNIT |
|---|---|---|---|---|
| Device marking code | | SL2 | SL3 | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 20 | 30 | V |
| Maximum RMS voltage | $V_{RMS}$ | 14 | 21 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 20 | 30 | V |
| Maximum average forward rectified current at $T_L$ = 105 °C (fig. 1) | $I_{F(AV)}$ | 1.5 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 50 | | A |
| Voltage rate of change (rated $V_R$) | dV/dt | 10 000 | | V/µs |
| Operating junction temperature range | $T_J$ | -55 to +125 | | °C |
| Storage temperature range | $T_{STG}$ | -55 to +150 | | °C |

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | TEST CONDITIONS | | SYMBOL | SL12 | SL13 | UNIT |
|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage | $I_F$ = 0.1 A | $T_A$ = 125 °C | $V_F$ (1) | 0.230 | | V |
| | | $T_A$ = 25 °C | | 0.360 | | |
| | $I_F$ = 1.0 A | $T_A$ = 125 °C | | 0.340 | | |
| | | $T_A$ = 25 °C | | 0.445 | | |
| Maximum DC reverse current at rated DC blocking voltage | | $T_A$ = 25 °C | $I_R$ (1) | 0.2 | | mA |
| | | $T_A$ = 100 °C | | 6.0 | | |

**Note**

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

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | |
|---|---|---|---|---|
| PARAMETER | SYMBOL | SL12 | SL13 | UNIT |
| Maximum thermal resistance | $R_{\theta JA}$ (1) | 88 | | °C/W |
| | $R_{\theta JL}$ (1) | 28 | | |

**Note**

(1) PCB mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SL13-M3/61T | 0.064 | 61T | 1800 | 7" diameter plastic tape and reel |
| SL13-M3/5AT | 0.064 | 5AT | 7500 | 13" diameter plastic tape and reel |

## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

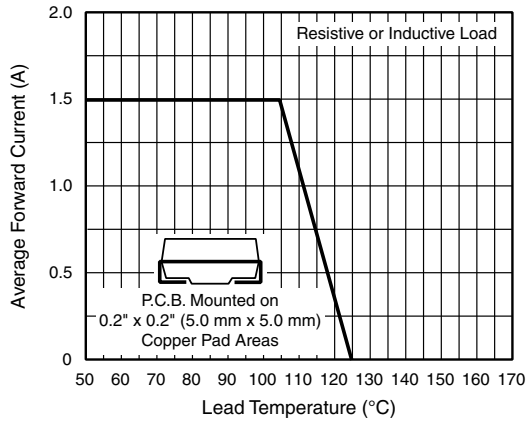



Fig. 1 - Forward Current Derating Curve

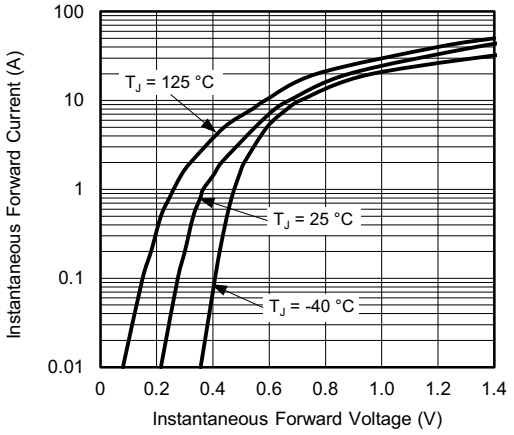



Fig. 3 - Typical Instantaneous Forward Characteristics

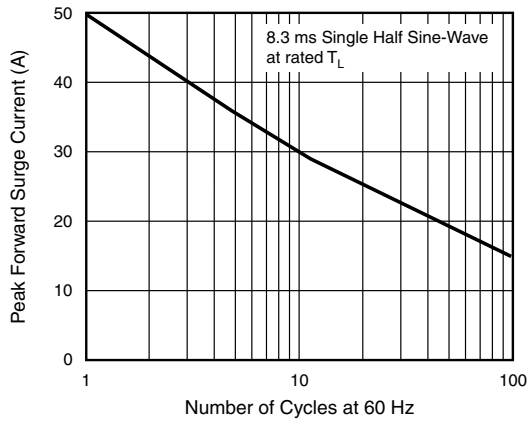



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

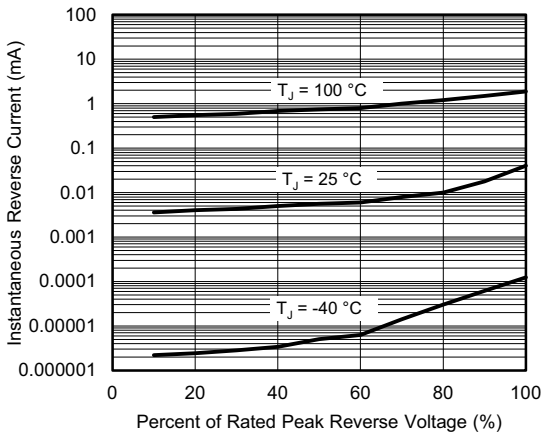



Fig. 4 - Typical Reverse Characteristics

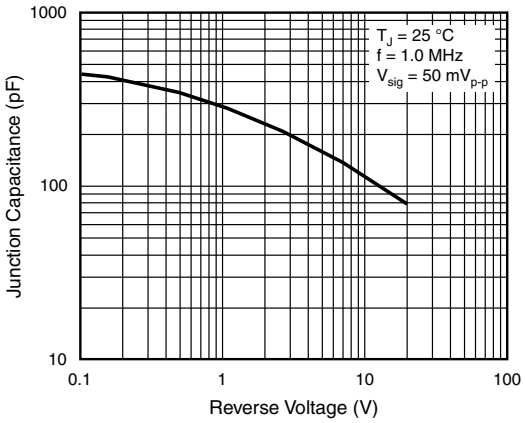
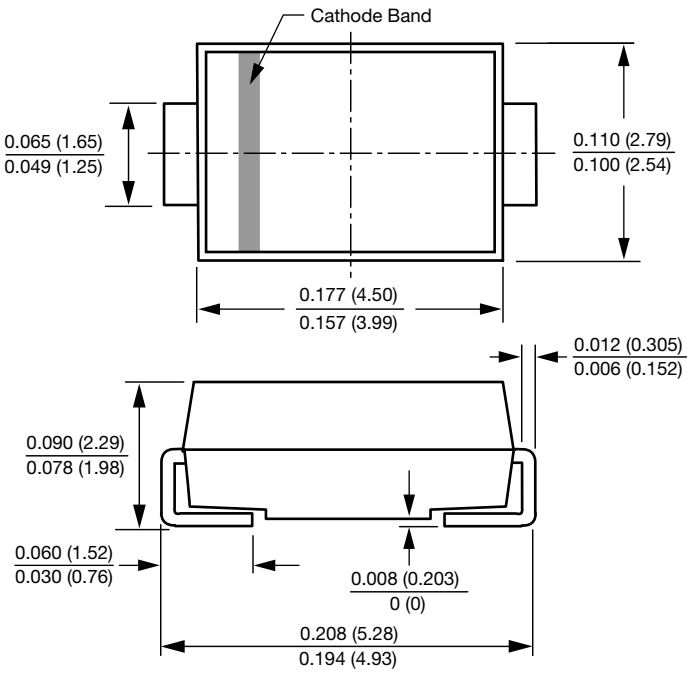


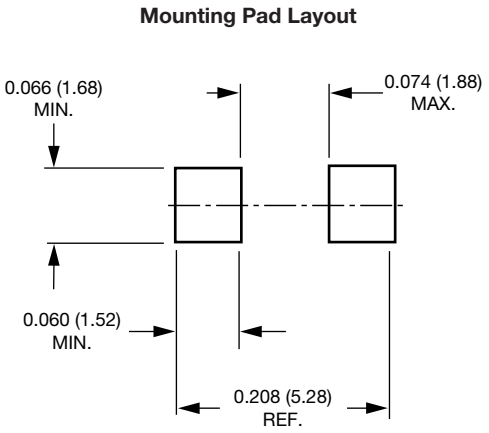

Fig. 5 - Typical Junction Capacitance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**SMA (DO-214AC)**




**Mounting Pad Layout**



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