

## 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](http://www.vishay.com/doc?99912)


**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**

### LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

### 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         |

### 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

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_L = 105\text{ °C}$ (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/ $\mu$ s |
| Operating junction temperature range   | $T_J$       | -55 to +125 |      | °C         |
| Storage temperature range  | $T_{STG}$   | -55 to +150 |      | °C         |

### ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted)

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

#### Note

<sup>(1)</sup> Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

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

| PARAMETER                  | SYMBOL                | SL12 | SL13 | UNIT               |
|----------------------------|-----------------------|------|------|--------------------|
| Maximum thermal resistance | $R_{\theta JA}^{(1)}$ | 88   |      | $^\circ\text{C/W}$ |
|                            | $R_{\theta JL}^{(1)}$ | 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 |

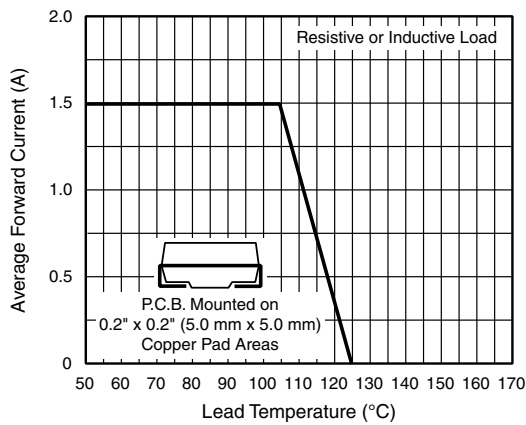
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

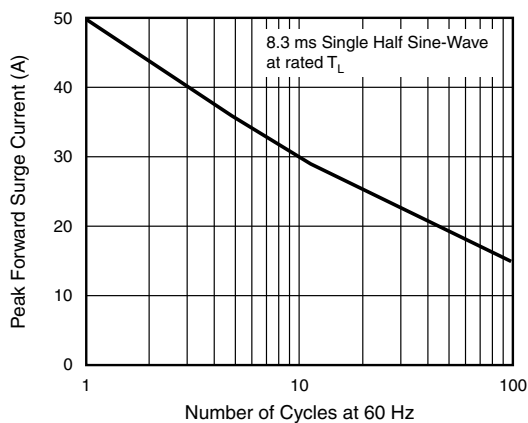


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

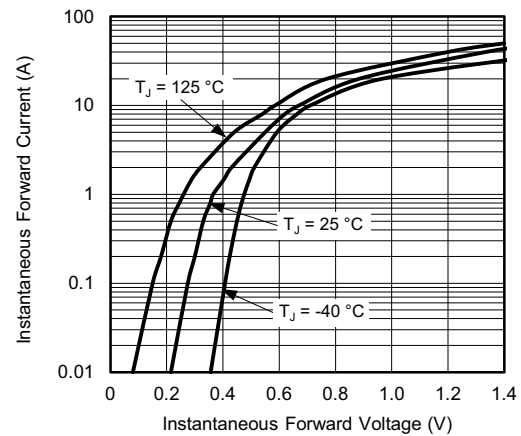


Fig. 3 - Typical Instantaneous Forward Characteristics

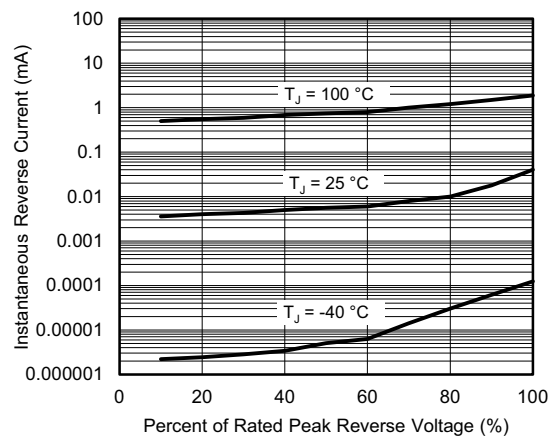


Fig. 4 - Typical Reverse Characteristics

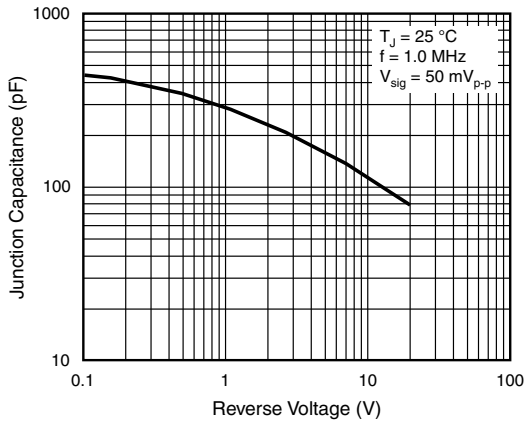
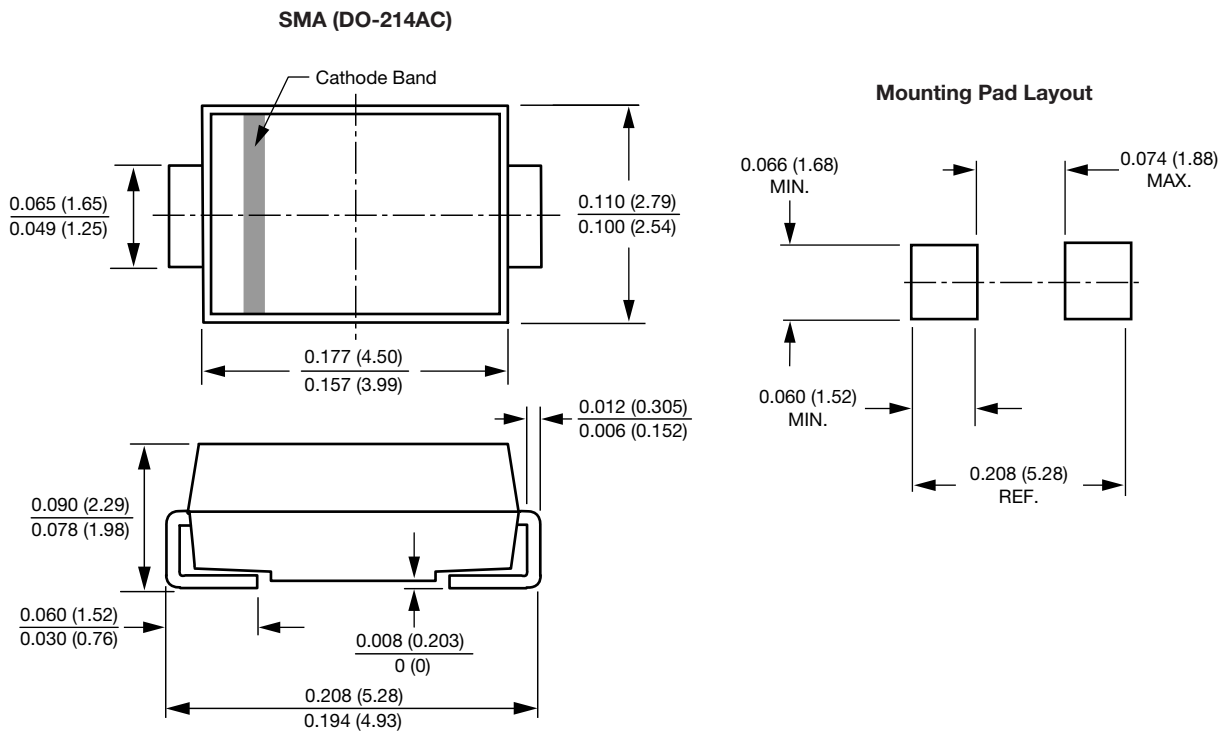


Fig. 5 - Typical Junction Capacitance

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





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