

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

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 ($T_A = 25$ °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/ μ s |
| Operating junction temperature range | T_J | -55 to +125 | | °C |
| Storage temperature range | T_{STG} | -55 to +150 | | °C |

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

| 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 μ 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 | | °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 |

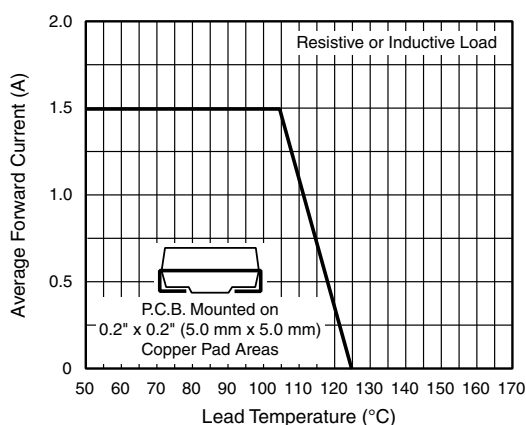
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

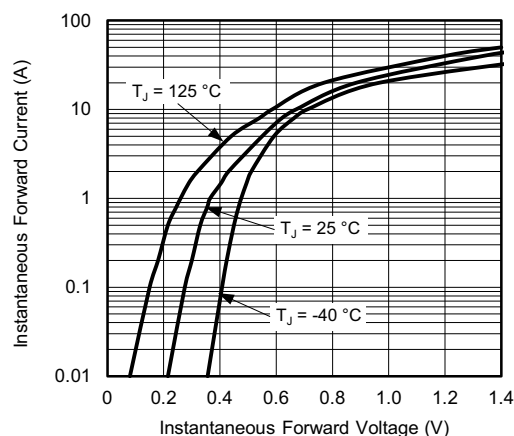


Fig. 3 - Typical Instantaneous Forward Characteristics

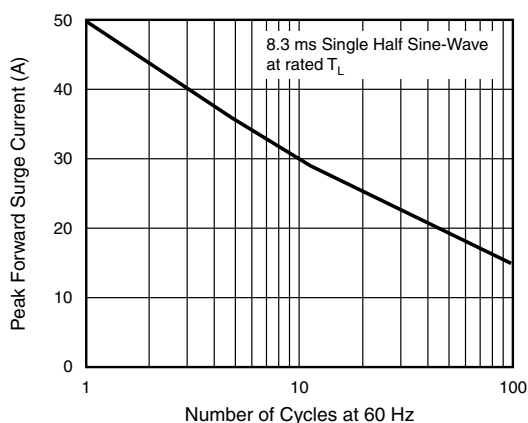


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

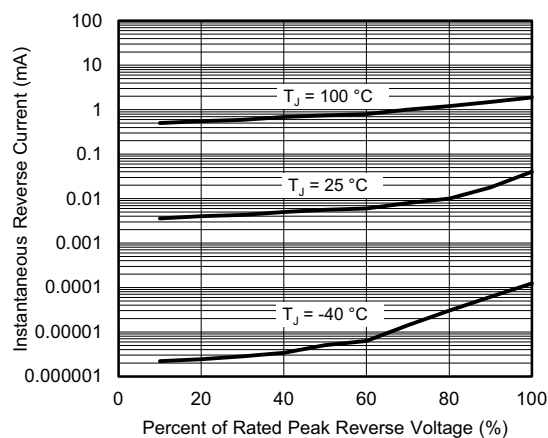


Fig. 4 - Typical Reverse Characteristics

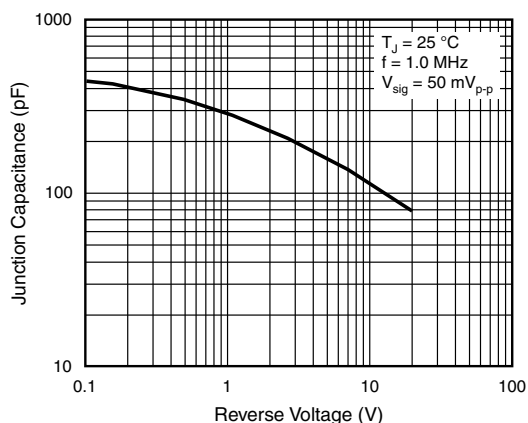
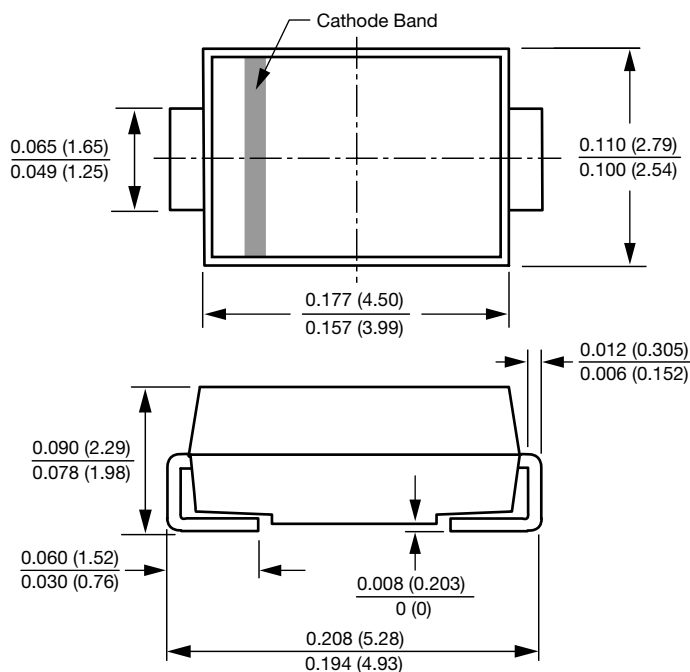
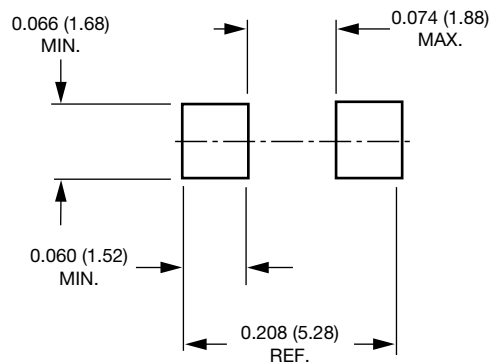


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)

Mounting Pad Layout




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