

# High Current Density Surface-Mount Schottky Rectifier


**SMA (DO-214AC)**

 Cathode  Anode

## LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS |                |
|-------------------------|----------------|
| $I_{F(AV)}$             | 2.0 A          |
| $V_{RRM}$               | 30 V, 40 V     |
| $I_{FSM}$               | 60 A           |
| $E_{AS}$                | 11.25 mJ       |
| $V_F$                   | 0.38 V, 0.42 V |
| $T_J$ max.              | 150 °C         |
| Package                 | SMA (DO-214AC) |
| Circuit configuration   | Single         |

## FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- 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**

## 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      | SSA23L      | SSA24 | UNIT       |
| Device marking code  |             | 23L         | S24   | V          |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$   | 30          | 40    | V          |
| Maximum RMS voltage  | $V_{RMS}$   | 21          | 28    | V          |
| Maximum DC blocking voltage  | $V_{DC}$    | 30          | 40    | V          |
| Maximum average forward rectified current at $T_L$ (fig. 1)  | $I_{F(AV)}$ | 2.0         |       | A          |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load                     | $I_{FSM}$   | 60          |       | A          |
| Non-repetitive avalanche energy at $T_A = 25\text{ °C}$ , $I_{AS} = 1.5\text{ A}$ , $L = 10\text{ mH}$ | $E_{AS}$    | 11.25       |       | mJ         |
| Voltage rate of change (rated $V_R$ )  | dV/dt       | 10 000      |       | V/ $\mu$ s |
| Operating junction temperature range   | $T_J$       | -65 to +150 |       | °C         |
| Storage temperature range  | $T_{STG}$   | -65 to +150 |       | °C         |

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

| PARAMETER                              | TEST CONDITIONS |                                   | SYMBOL      | SSA23L |      | SSA24 |      | UNIT |
|--|-----------------|-----------------------------------|-------------|--------|------|-------|------|------|
|  |                 |                                   |             | TYP.   | MAX. | TYP.  | MAX. |      |
| Maximum instantaneous forward voltage  | 2.0 A           | $T_J = 25\text{ }^\circ\text{C}$  | $V_F^{(1)}$ | 0.43   | 0.45 | 0.45  | 0.49 | V    |
|  |                 | $T_J = 125\text{ }^\circ\text{C}$ |             | 0.32   | 0.38 | 0.36  | 0.42 |      |
| Maximum reverse current at rated $V_R$ |                 | $T_J = 25\text{ }^\circ\text{C}$  | $I_R^{(2)}$ | -      | 0.5  | -     | 0.2  | mA   |
|  |                 | $T_J = 125\text{ }^\circ\text{C}$ |             | 15     | 25   | 12    | 20   |      |

**Notes**(1) Pulse test: 300  $\mu\text{s}$  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                | SSA23L | SSA24 | UNIT               |
|----------------------------|-----------------------|--------|-------|--------------------|
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 110    |       | $^\circ\text{C/W}$ |
|                            | $R_{\theta JL}^{(1)}$ | 28     |       |                    |

**Note**

(1) Aluminum substrate mounted

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
|---------------|-----------------|------------------------|---------------|------------------------------------|
| SSA23L-M3/61T | 0.064           | 61T                    | 1800          | 7" diameter plastic tape and reel  |
| SSA23L-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)

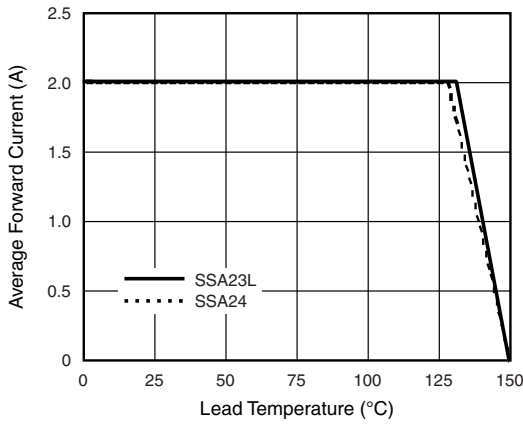


Fig. 1 - Forward Current Derating Curve

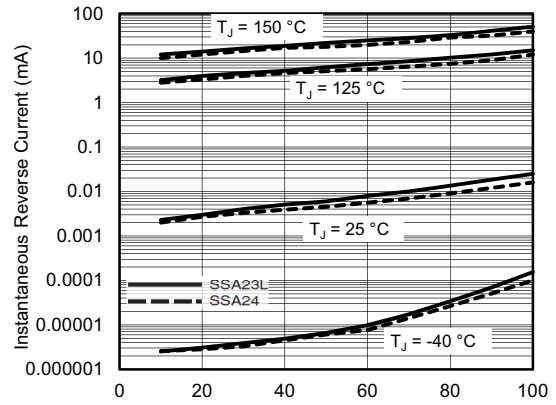


Fig. 4 - Typical Reverse Characteristics

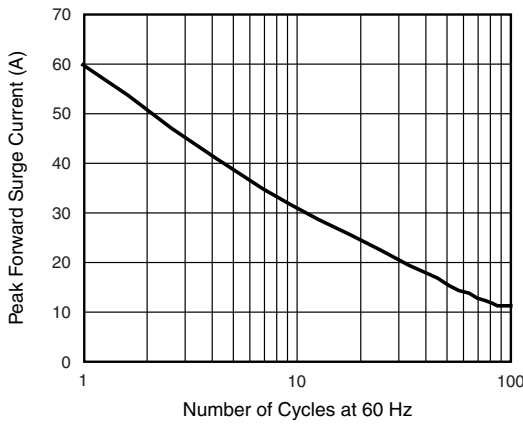


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

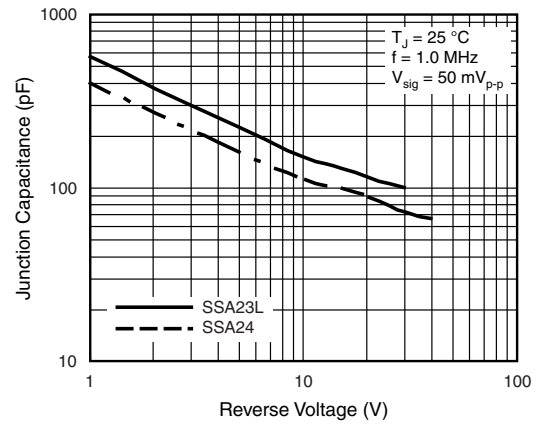


Fig. 5 - Typical Junction Capacitance

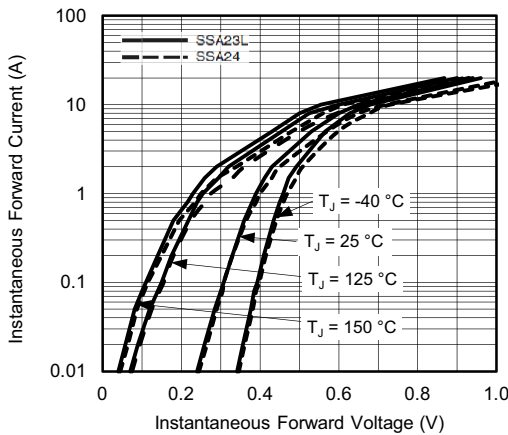
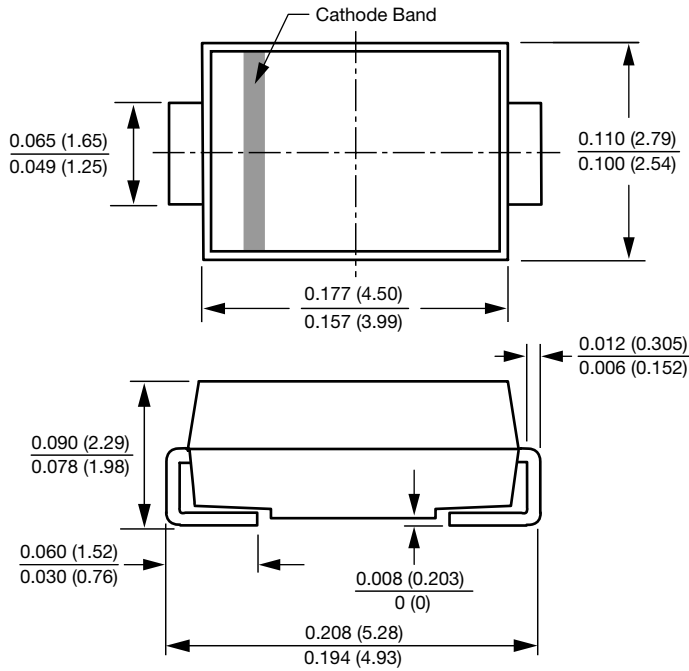


Fig. 3 - Typical Instantaneous Forward Characteristics

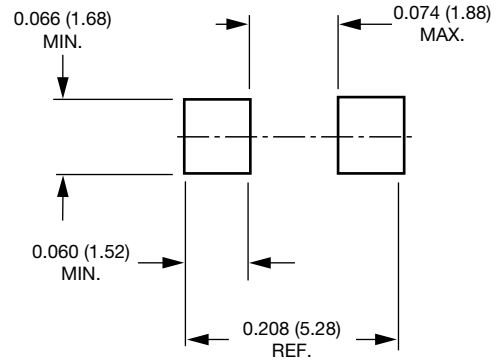


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



Mounting Pad Layout





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