

Distributed by:



**[www.Jameco.com](http://www.Jameco.com) ♦ 1-800-831-4242**

The content and copyrights of the attached  
material are the property of its owner.

Jameco Part Number 2013729

## Surface Mount Schottky Barrier Rectifier



DO-214AC (SMA)

RoHS  
COMPLIANT

### 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

### MECHANICAL DATA

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

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes the cathode end

### PRIMARY CHARACTERISTICS

|                    |                |
|--------------------|----------------|
| $I_{F(AV)}$        | 1.0 A          |
| $V_{RRM}$          | 20 V to 60 V   |
| $I_{FSM}$          | 40 A           |
| $V_F$              | 0.50 V, 0.75 V |
| $T_J \text{ max.}$ | 125 °C, 150 °C |

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

| PARAMETER                                                                          | SYMBOL             | SS12          | SS13 | SS14 | SS15          | SS16 | UNIT |
|------------------------------------------------------------------------------------|--------------------|---------------|------|------|---------------|------|------|
| Device marking code                                                                |                    | S2            | S3   | S4   | S5            | S6   | V    |
| Maximum repetitive peak reverse voltage                                            | V <sub>RRM</sub>   | 20            | 30   | 40   | 50            | 60   | V    |
| Maximum RMS voltage                                                                | V <sub>RMS</sub>   | 14            | 21   | 28   | 35            | 42   | V    |
| Maximum DC blocking voltage                                                        | V <sub>DC</sub>    | 20            | 30   | 40   | 50            | 60   | V    |
| Maximum average forward rectified current at T <sub>L</sub> (Fig. 1)               | I <sub>F(AV)</sub> | 1.0           |      |      |               |      | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>   | 40            |      |      |               |      | A    |
| Voltage rate of change (rated V <sub>R</sub> )                                     | dV/dt              | 10 000        |      |      |               |      | V/μs |
| Operating junction temperature range                                               | T <sub>J</sub>     | - 65 to + 125 |      |      | - 65 to + 150 |      | °C   |
| Storage temperature range                                                          | T <sub>STG</sub>   | - 65 to + 150 |      |      |               |      | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                                   |                |      |      |      |      |      |      |
|----------------------------------------------------------------------------|---------------------------------------------------|----------------|------|------|------|------|------|------|
| PARAMETER                                                                  | TEST CONDITIONS                                   | SYMBOL         | SS12 | SS13 | SS14 | SS15 | SS16 | UNIT |
| Maximum instantaneous forward voltage <sup>(1)</sup>                       | 1.0 A                                             | V <sub>F</sub> | 0.50 |      |      | 0.75 |      | V    |
| Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>     | T <sub>A</sub> = 25 °C<br>T <sub>A</sub> = 100 °C | I <sub>R</sub> | 0.2  |      |      |      | 5.0  | mA   |
|                                                                            |                                                   |                | 6.0  |      |      |      |      |      |

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |      |      |      |      |      |      |
|-------------------------------------------------------------------------|------------------|------|------|------|------|------|------|
| PARAMETER                                                               | SYMBOL           | SS12 | SS13 | SS14 | SS15 | SS16 | UNIT |
| Typical thermal resistance <sup>(1)</sup>                               | R <sub>θJA</sub> | 88   |      |      |      |      | °C/W |
|                                                                         | R <sub>θJL</sub> | 28   |      |      |      |      |      |

**Note:**

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                                    |
|---------------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
| SS14-E3/61T                           | 0.064           | 61T                    | 1800          | 7" diameter plastic tape and reel  |
| SS14-E3/5AT                           | 0.064           | 5AT                    | 7500          | 13" diameter plastic tape and reel |
| SS14HE3/61T <sup>(1)</sup>            | 0.064           | 61T                    | 1800          | 7" diameter plastic tape and reel  |
| SS14HE3/5AT <sup>(1)</sup>            | 0.064           | 5AT                    | 7500          | 13" diameter plastic tape and reel |

**Note:**

(1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

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

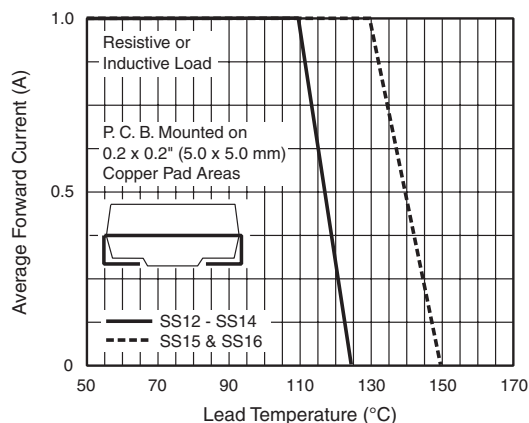


Figure 1. Forward Current Derating Curve

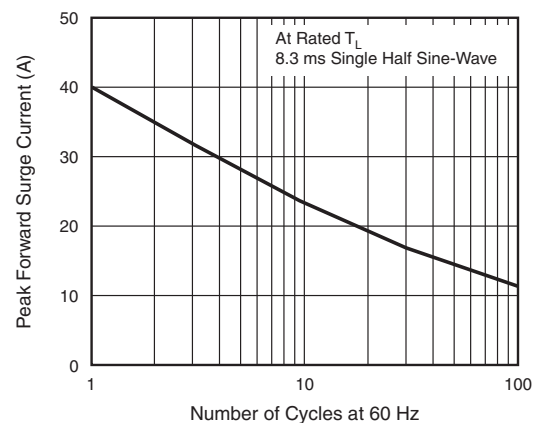


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

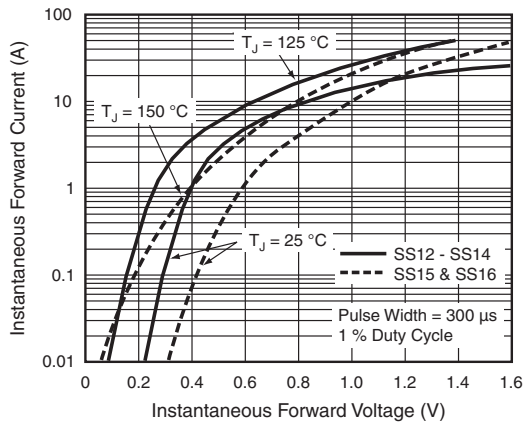


Figure 3. Typical Instantaneous Forward Characteristics

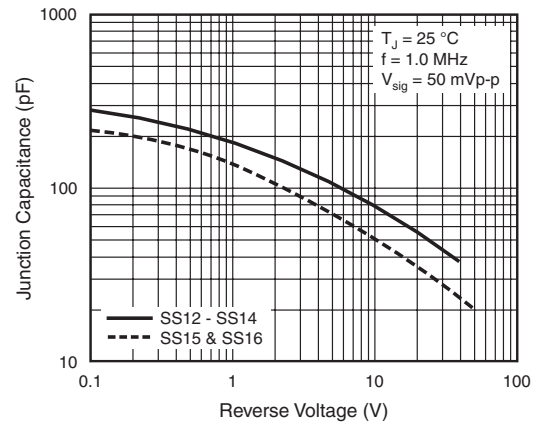


Figure 5. Typical Junction Capacitance

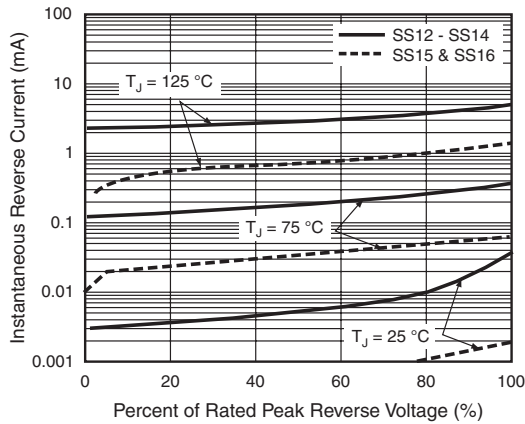
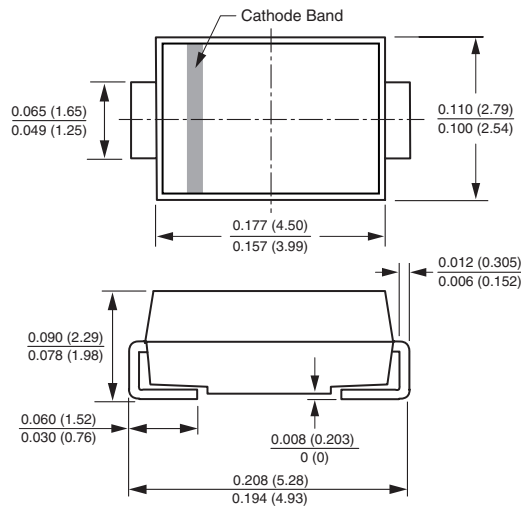


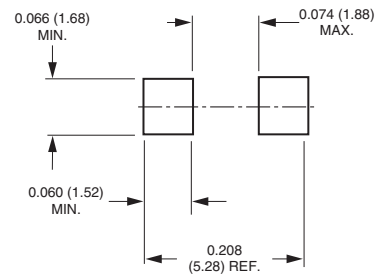
Figure 4. Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-214AC (SMA)



#### Mounting Pad Layout





### Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.