

# Schottky Rectifier

## SS12 - S100

### Description

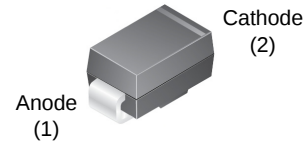
The SS12-S100 series includes high-efficiency, low power loss, general-purpose schottky rectifiers. The clip-bonded leg structure provides high thermal performance and low electrical resistance. These rectifiers are suited for free wheeling, secondary rectification, and reverse polarity protection applications.

### Features

- Glass-Passivated Junctions
- High-Current Capability, Low  $V_F$
- These Devices are Pb-Free, Halogen Free and are RoHS Compliant

### Applications

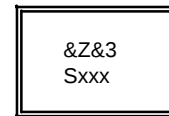
- Low Voltage
- High-Frequency Inverters
- Free Wheeling
- Polarity Protection



SMA  
CASE 403AE



### MARKING DIAGRAM



&Z = Assembly Plant Code  
 &3 = Date Code (Year & Week)  
 Sxxx = Specific Device Code

### ORDERING INFORMATION

| Part Number | Top Mark | Package                       | Shipping <sup>†</sup> |
|-------------|----------|-------------------------------|-----------------------|
| SS12        | SS12     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS13        | SS13     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS14        | SS14     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS15        | SS15     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS16        | SS16     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS18        | SS18     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| SS19        | SS19     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |
| S100        | S100     | SMA<br>(Pb-Free/Halogen Free) | 7500 / Tape & Reel    |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

## SS12 – S100

### Specifications

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

| Symbol      | Parameter                                                                              | Value       |      |      |      |      |      |      |      | Unit             |
|-------------|----------------------------------------------------------------------------------------|-------------|------|------|------|------|------|------|------|------------------|
|             |                                                                                        | SS12        | SS13 | SS14 | SS15 | SS16 | SS18 | SS19 | S100 |                  |
| $V_{RRM}$   | Peak Repetitive Reverse Voltage                                                        | 20          | 30   | 40   | 50   | 60   | 80   | 90   | 100  | V                |
| $I_{F(AV)}$ | Maximum Average Forward Current:<br>0.375-inch Lead Length at $T_A = 75^\circ\text{C}$ | 1.0         |      |      |      |      |      |      |      | A                |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge<br>Current: 8.3 ms Single Half-Sine Wave             | 40          |      |      |      |      |      |      |      | A                |
| $T_J$       | Operating Junction Temperature                                                         | -65 to +125 |      |      |      |      |      |      |      | $^\circ\text{C}$ |
| $T_{STG}$   | Storage Temperature Range                                                              | -65 to +150 |      |      |      |      |      |      |      | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

| Symbol          | Characteristic                                   | Value | Unit               |
|-----------------|--------------------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                                | 1.1   | W                  |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient (Note 1) | 88    | $^\circ\text{C/W}$ |

1. Device mounted on FE-4 PCB 0.013 mm.

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

| Symbol         | Parameter                                       | Conditions             | Value |      |      |      |      |      |      |      | Unit |
|----------------|-------------------------------------------------|------------------------|-------|------|------|------|------|------|------|------|------|
|                |                                                 |                        | SS12  | SS13 | SS14 | SS15 | SS16 | SS18 | SS19 | S100 |      |
| V <sub>F</sub> | Maximum Forward Voltage                         | I <sub>F</sub> = 1.0 A | 500   |      |      | 700  |      | 850  |      |      | mV   |
| I <sub>R</sub> | Maximum Reverse Current at Rated V <sub>R</sub> | T <sub>A</sub> = 25°C  | 0.2   |      |      |      |      |      |      |      | mA   |
|                |                                                 | T <sub>A</sub> = 100°C | 10    |      |      |      |      |      |      |      |      |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

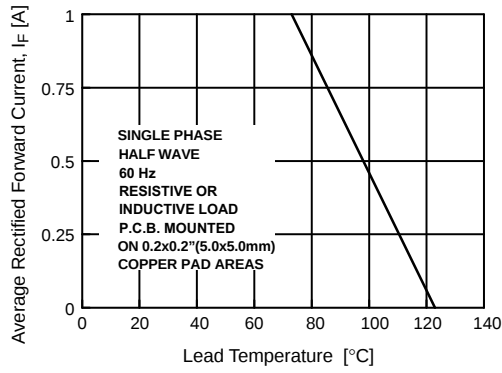


Figure 1. Forward Current Derating Curve

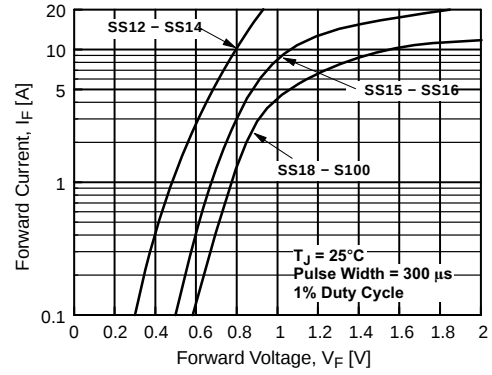


Figure 2. Forward Voltage Characteristics

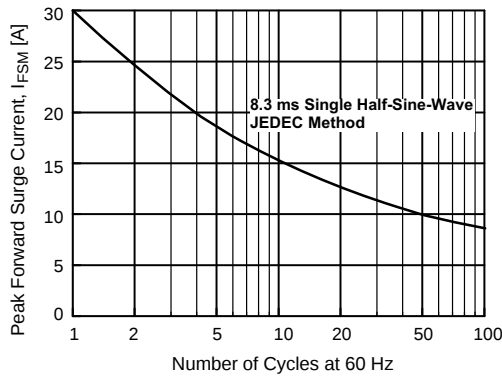


Figure 3. Non-Repetitive Surge Current

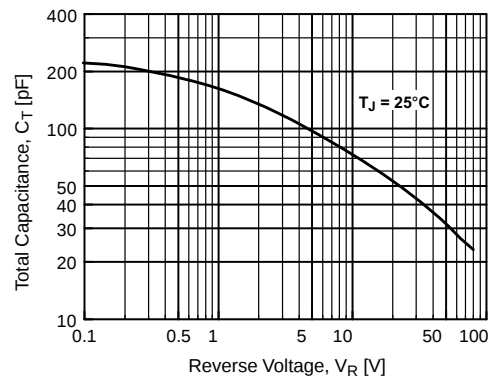


Figure 4. Total Capacitance

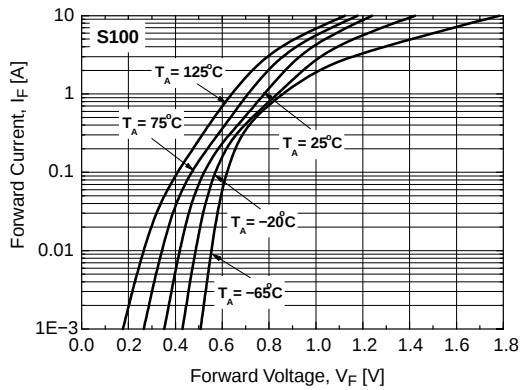
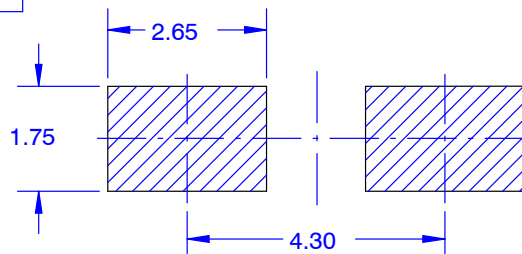
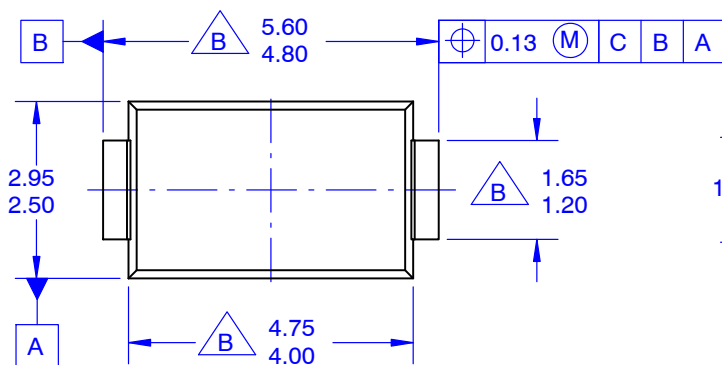


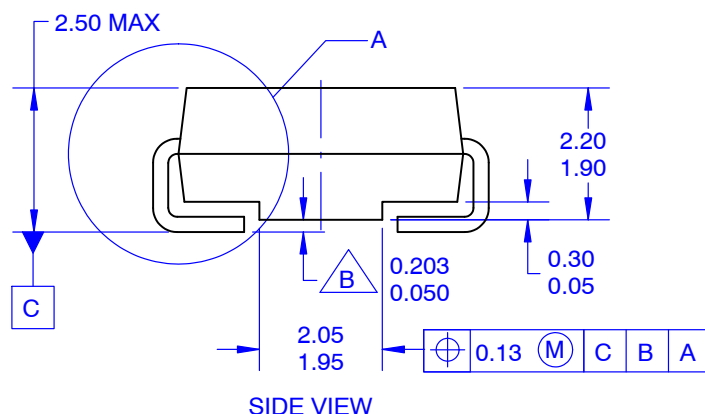
Figure 5. Low-Current Forward Voltage Characteristics

**SMA**  
**CASE 403AE**  
**ISSUE O**

DATE 31 AUG 2016



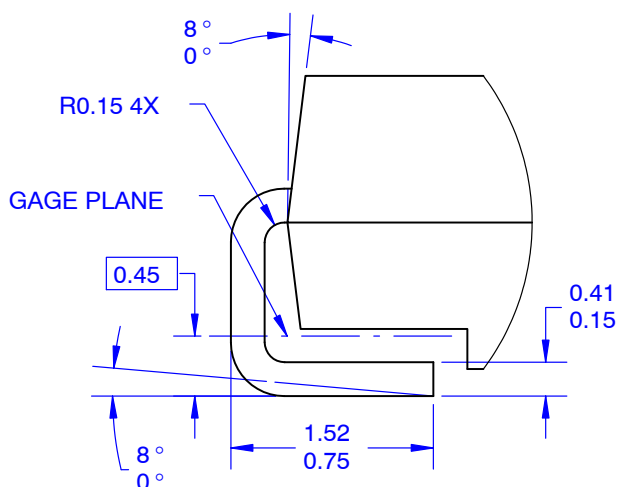
LAND PATTERN RECOMMENDATION



SIDE VIEW

**NOTES:**

- A. EXCEPT WHERE NOTED, CONFORMS TO JEDEC DO214 VARIATION AC.
- B. DOES NOT COMPLY JEDEC STANDARD VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSIONS AND TOLERANCE AS PER ASME Y14.5-2009.
- E. LAND PATTERN STD. DIOM5025X231M



DETAIL A  
SCALE 20 : 1

|                         |                    |                                                                                                                                                                                     |
|-------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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