

General-Purpose Rectifiers

S3A-S3N

Features

- Low-Profile Package
- Glass-Passivated Junction
- UL Flammability Classification: 94V-0
- UL Certified, UL #E258596
- These are Pb-Free Devices

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

| Symbol | Parameter | Value | | | | | | | | Unit |
|--------------------|---|-------------|-----|-----|-----|-----|-----|------|------|------|
| | | S3A | S3B | S3D | S3G | S3J | S3K | S3M | S3N | |
| V _{RRM} | Maximum Repetitive Reverse Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | 1200 | V |
| V _{RMS} | RMS Reverse Voltage | 35 | 70 | 140 | 280 | 420 | 560 | 700 | 840 | V |
| V _R | DC Blocking Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | 1200 | V |
| I _{F(AV)} | Average Rectified Forward Current T _L = 105°C | 3.0 | | | | | | | | A |
| I _{FSM} | Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave | 100 | | | | | | | | A |
| T _{STG} | Storage Temperature Range | -55 to +150 | | | | | | | | °C |
| T _J | Operating Junction Temperature Range | -55 to +150 | | | | | | | | °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 (Note 1)

| Symbol | Parameter | Value | Unit |
|------------------|---|-------|------|
| P _D | Power Dissipation | 2.6 | W |
| R _{θJA} | Thermal Resistance, Junction-to-Ambient | 100 | °C/W |
| R _{θJL} | Thermal Resistance, Junction-to-Lead | 13 | °C/W |

1. Device is mounted on FR-4 PCB 0.013 mm. Land pattern size: refer to the package drawing. Trace size: force line = 50 mil & sense line = 4 mil.

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

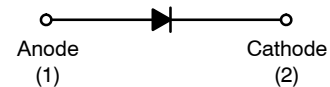
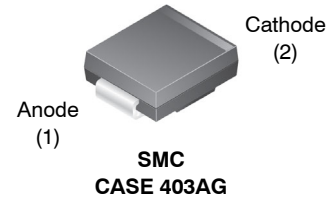
| Symbol | Parameter | Conditions | Value | | | | | | | Unit |
|-----------------|---|--|-------|-----|-----|-----|-----|-----|-----|------|
| | | | S3A | S3B | S3D | S3G | S3J | S3K | S3M | |
| V _F | Maximum Forward Voltage | I _F = 3.0 A | 1.2 | | | | | | | V |
| t _{rr} | Typical Reverse Recovery Time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | 2.5 | | | | | | | μs |
| I _R | Maximum Reverse Current at Rated V _R | T _A = 25°C | 5 | | | | | | | μA |
| | | T _A = 125°C | 250 | | | | | | | |
| C _T | Typical Total Capacitance | V _R = 4.0 V, f = 1.0 MHz | 60 | | | | | | | pF |

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.

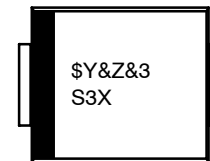


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MARKING DIAGRAM



- \$Y = ON Semiconductor Logo
- &Z = Assembly Plant Code
- &3 = Numeric Date Code
- S3X = Specific Device Code
- X = A-N

ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

TYPICAL PERFORMANCE CHARACTERISTICS

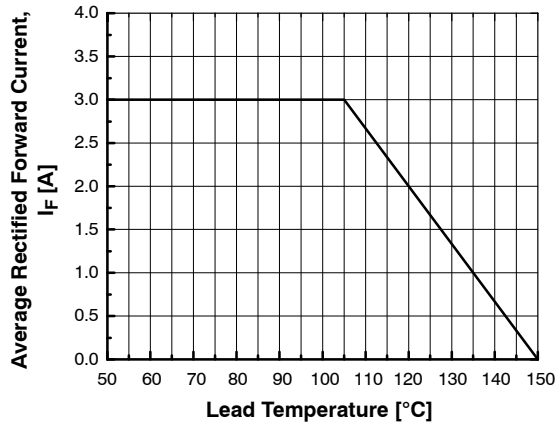


Figure 1. Forward Current Derating Curve

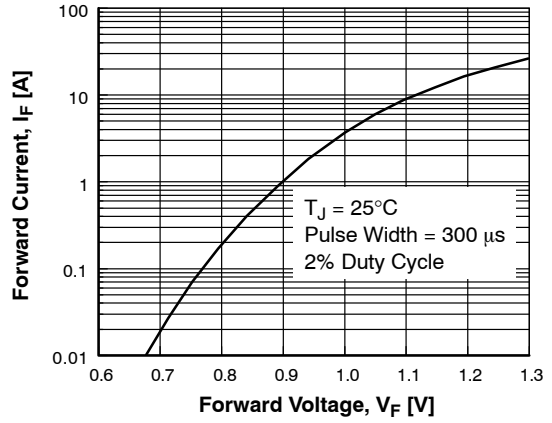


Figure 2. Forward Voltage Characteristics

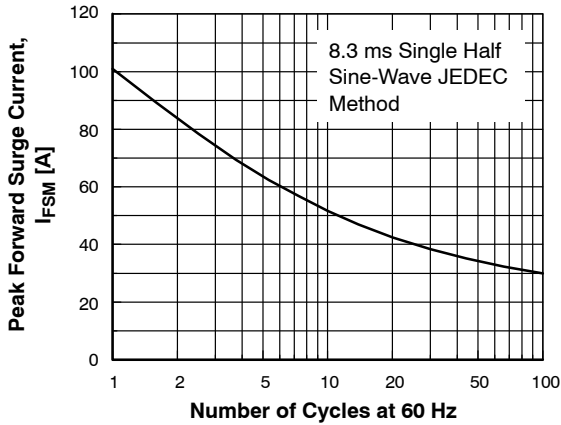


Figure 3. Non-Repetitive Surge Current

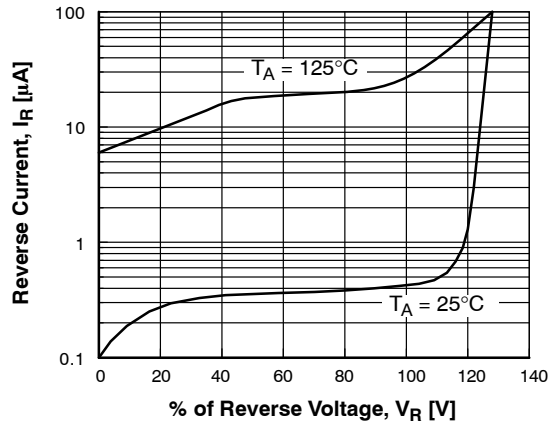


Figure 4. Reverse Current vs. Reverse Voltage

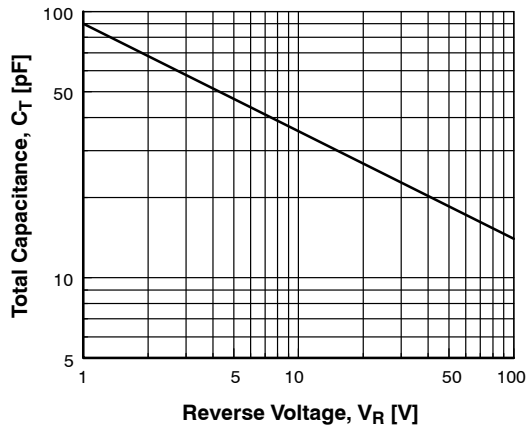


Figure 5. Total Capacitance

S3A-S3N

ORDERING INFORMATION

| Part Number | Top Marking | Package | Shipping† |
|-------------|-------------|-----------------------------|--------------------|
| S3A | S3A | DO-214AB (SMC) (Pb-Free) | 3000 / Tape & Reel |
| S3B | S3B | | |
| S3D | S3D | | |
| S3G | S3G | | |
| S3J | S3J | | |
| S3K | S3K | | |
| S3M | S3M | | |
| S3N | S3N | | |

†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.

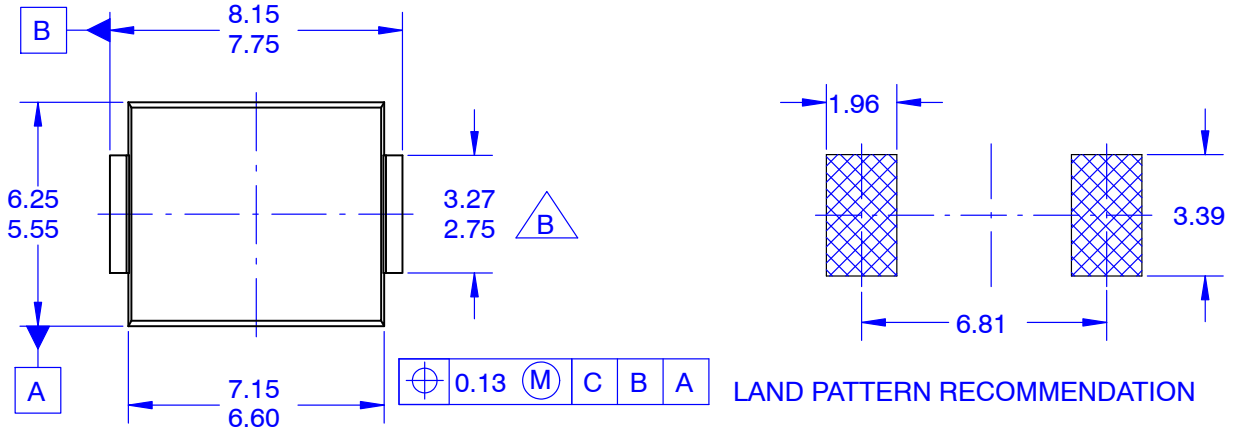
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

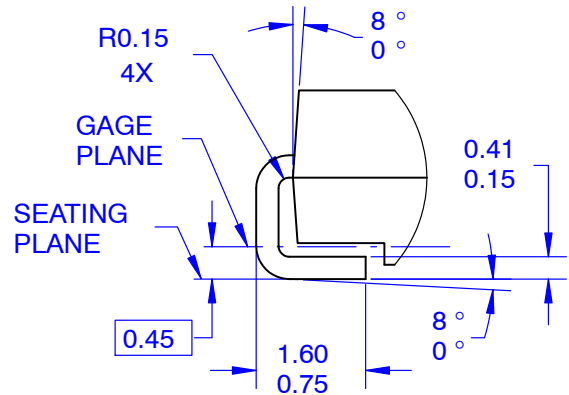
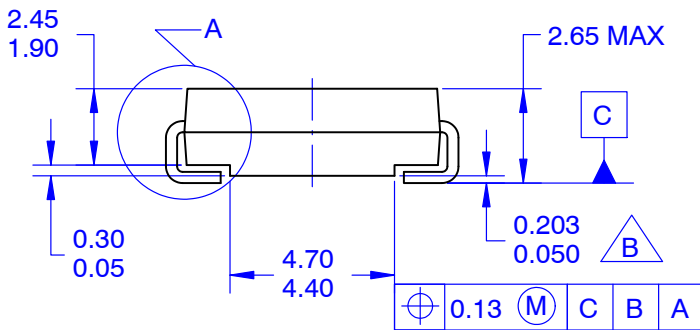


SMC
CASE 403AG
ISSUE O

DATE 31 AUG 2016



TOP VIEW



NOTES:

A. EXCEPT WHERE NOTED, CONFORMS TO JEDEC DO-214, VARIATION AB

- B** DOES NOT COMPLY TO JEDEC STD. VALUE
- C. ALL DIMENSIONS ARE IN MILLIMETERS
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.
- E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5-2009
- F. LAND PATTERN STANDARD: DIOM7957X241M

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