

S3A - S3M

General Purpose Rectifiers

Features

- Low Profile Package.
- Glass Passivated Junction.



SMC/DO-214AB

COLOR BAND DENOTES CATHODE

Ordering Informations

| Part Number | Top Mark | Package | Packing Method |
|-------------|----------|----------------|----------------|
| S3A | S3A | DO-214AB (SMC) | Tape and Reel |
| S3B | S3B | DO-214AB (SMC) | Tape and Reel |
| S3D | S3D | DO-214AB (SMC) | Tape and Reel |
| S3G | S3G | DO-214AB (SMC) | Tape and Reel |
| S3J | S3J | DO-214AB (SMC) | Tape and Reel |
| S3K | S3K | DO-214AB (SMC) | Tape and Reel |
| S3M | S3M | DO-214AB (SMC) | Tape and Reel |

Absolute Maximum Ratings⁽¹⁾

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | | | | | | | Unit |
|-------------|--|-------|-----|-----|-----|-----|-----|-------------|------------------|
| | | 3A | 3B | 3D | 3G | 3J | 3K | 3M | |
| V_{RRM} | Maximum Repetitive Reverse Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current $T_L = 105^\circ\text{C}$ | | | | | | | 3.0 | A |
| I_{FSM} | Non-Repetitive Peak Forward Surge Current 8.3ms Single Half-Sine-Wave | | | | | | | 100 | A |
| T_{STG} | Storage Temperature Range | | | | | | | -55 to +150 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | | | | | | | -55 to +150 | $^\circ\text{C}$ |

Note:

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics⁽²⁾

| Symbol | Parameter | Value | Units |
|-----------------|--|-------|-------|
| P_D | Power Dissipation | 2.6 | W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 100 | °C/W |
| Ψ_{JL} | Junction to Lead Thermal Characteristics (With Referenced to Anode Pin) | 11 | °C/W |

Note:

2. Device mounted on FR-4 PCB 0.013mm.
Land pattern size: Refer to the package drawing.
Trace size: Force line = 50 mil & Sense line = 4 mil.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Conditions | Value | | | | | | | Units |
|----------|--------------------------------|---|-------|----|----|----|----|----|----|-------|
| | | | 3A | 3B | 3D | 3G | 3J | 3K | 3M | |
| V_F | Forward Voltage at 3.0 A | | 1.2 | | | | | | | V |
| t_{rr} | Reverse Recovery Time | $I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$ | 2.5 | | | | | | | μs |
| I_R | Reverse Current at rated V_R | $T_A = 25^\circ\text{C}$ | 5.0 | | | | | | | μA |
| | | $T_A = 125^\circ\text{C}$ | 250 | | | | | | | μA |
| C_T | Total Capacitance | $V_R = 4.0 \text{ V}$, $f = 1.0 \text{ MHz}$ | 60 | | | | | | | pF |

Typical Performance Characteristics

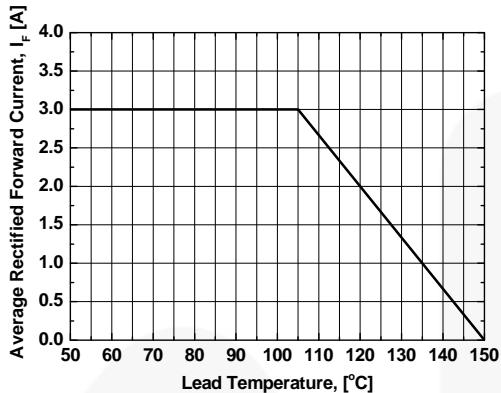


Figure 1. Forward Current Derating Curve

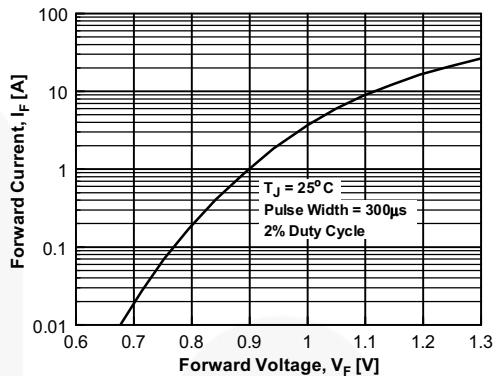


Figure 2. Forward Voltage Characteristics

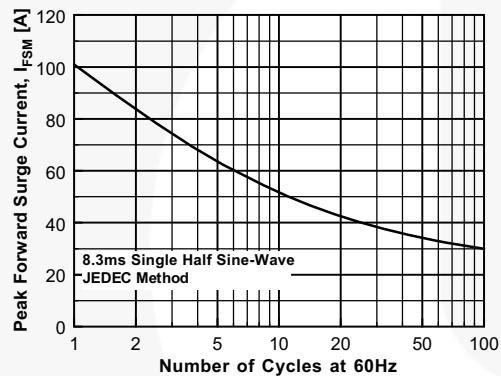


Figure 3. Non-Repetitive Surge Current

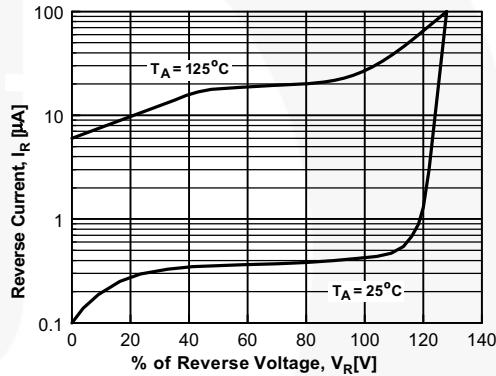


Figure 4. Reverse Current vs Reverse Voltage

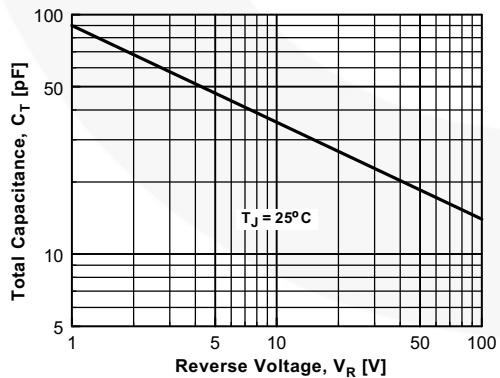


Figure 5. Total Capacitance

Physical Dimension

SMC/DO-214AB

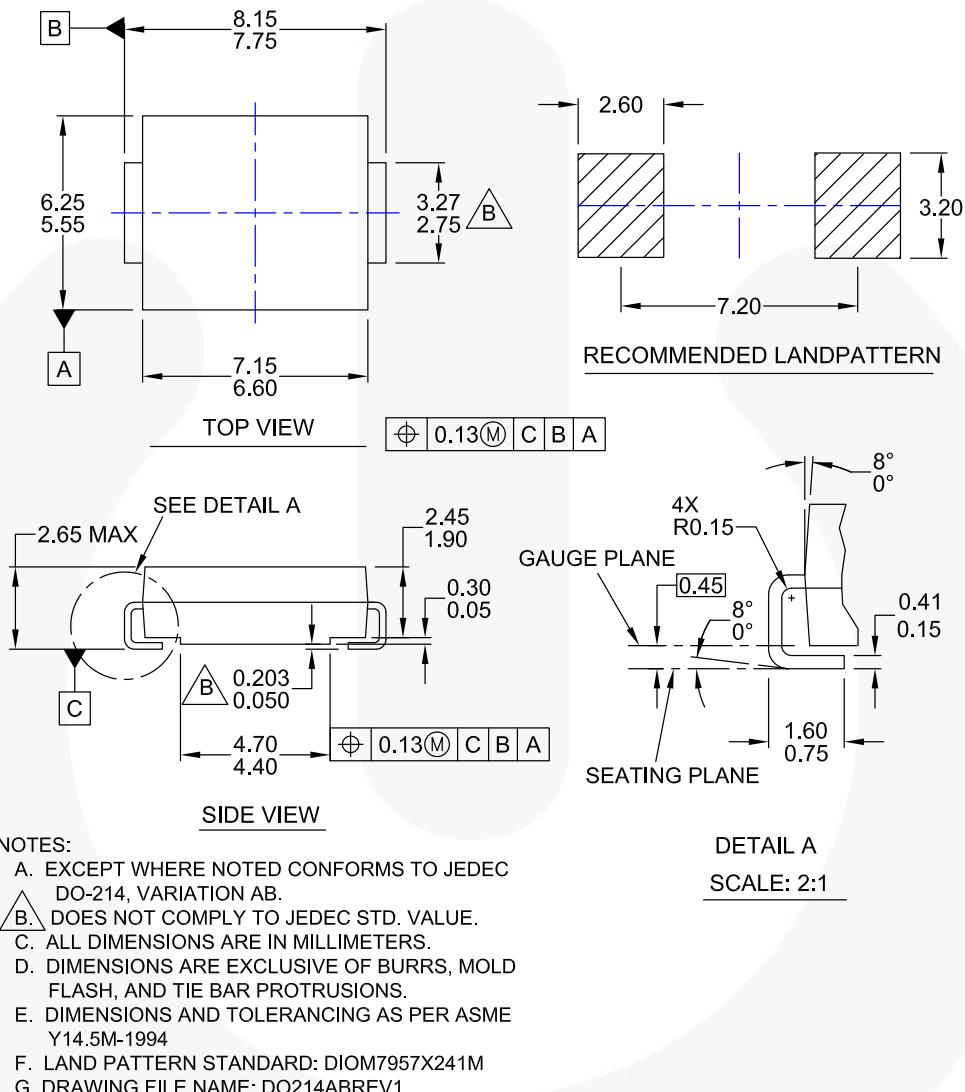


Figure 6. 2-Lead, SMC, JEDEC DO-214, Variation AB

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<http://www.fairchildsemi.com/dwg/DO/DO214AB.pdf>



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