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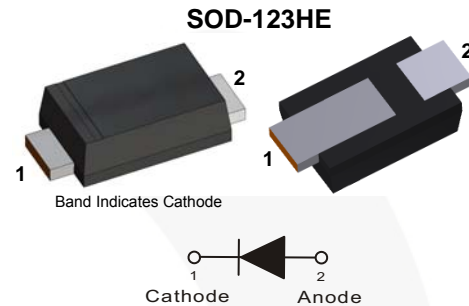
March 2016

SS12FP - S115FP

1 A, 20 V - 150 V Surface Mount Schottky Barrier Rectifiers

Features

- Larger Cathode Pad for Improved Power Dissipation
 - Ultra Thin Profile - Package Height < 1.0 mm
 - High Surge Current Capability
 - Low Power Loss, High Efficiency
 - UL Flammability 94V-0 Classification
 - MSL 1 per J-STD-020
 - RoHS Compliant / Green Molding Compound
 - Industrial Device Qualified per AEC-Q101 Standards
- * See authorized use policy



Ordering Information

| Part Number | Top Mark | Package | Packing Method |
|-------------|----------|-----------|----------------|
| SS12FP | 2FP | SOD-123HE | Tape and Reel |
| SS13FP | 3FP | SOD-123HE | Tape and Reel |
| SS14FP | 4FP | SOD-123HE | Tape and Reel |
| SS16FP | 6FP | SOD-123HE | Tape and Reel |
| S110FP | 0FP | SOD-123HE | Tape and Reel |
| S115FP | AFP | SOD-123HE | Tape and Reel |

SS12FP - S115FP — 1 A, 20 V - 150 V Surface Mount Schottky Barrier Rectifiers

Absolute Maximum Ratings

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 |
|-------------|---|-------------|---------|-------------|---------|---------|---------|------------------|
| | | SS12 FP | SS13 FP | SS14 FP | SS16 FP | S110 FP | S115 FP | |
| V_{RRM} | Repetitive Peak Reverse Voltage | 20 | 30 | 40 | 60 | 100 | 150 | V |
| V_{RMS} | RMS Reverse Voltage | 14 | 21 | 28 | 42 | 70 | 105 | V |
| V_R | DC Blocking Voltage | 20 | 30 | 40 | 60 | 100 | 150 | V |
| $I_{F(AV)}$ | Average Forward Rectified Current | 1 | | | | | | A |
| I_{FSM} | Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load | 30 | | | | | | A |
| T_J | Operating Junction Temperature Range | -55 to +125 | | -55 to +150 | | | | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -55 to +150 | | | | | | $^\circ\text{C}$ |

Thermal Characteristics⁽¹⁾

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

| Symbol | Parameter | Value | Unit |
|-----------------|--|-------|---------------------------|
| Ψ_{JL} | Thermal Characteristics, Junction-to-Lead ⁽²⁾ | 10 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 140 | $^\circ\text{C}/\text{W}$ |

Notes:

- Per JESD51-3 recommended thermal test board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.
- Thermocouple soldered at cathode lead.

Electrical Characteristics

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

| Symbol | Parameter | Condi- tions | Value | | | | | | Unit |
|----------|--|--|---------|---------|---------|---------|---------|---------|------|
| | | | SS12 FP | SS13 FP | SS14 FP | SS16 FP | S110 FP | S115 FP | |
| V_F | Maximum Instantaneous Forward Voltage ⁽³⁾ | $I_F = 0.5\text{ A}$ | | | 0.51 | 0.58 | 0.70 | 0.75 | V |
| | | $I_F = 1.0\text{ A}$ | 0.45 | 0.50 | 0.55 | 0.70 | 0.80 | 0.90 | |
| I_R | Maximum Reverse Current at Rated V_R | $T_J = 25^\circ\text{C}$ | 0.40 | | | | 0.05 | | mA |
| | | $T_J = 125^\circ\text{C}$ | | | | | 0.50 | | |
| C_J | Typical Junction Capacitance | $V_R = 4\text{ V}$, $f = 1\text{ MHz}$ | 54 | | | | 28 | | pF |
| T_{rr} | Typical Reverse Recovery Time | $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{RR} = 0.25\text{ A}$ | 6 | | | | 14 | | ns |

Note:

- Pulse test with $PW = 300\ \mu\text{s}$, 1% duty cycle

Typical Performance Characteristics

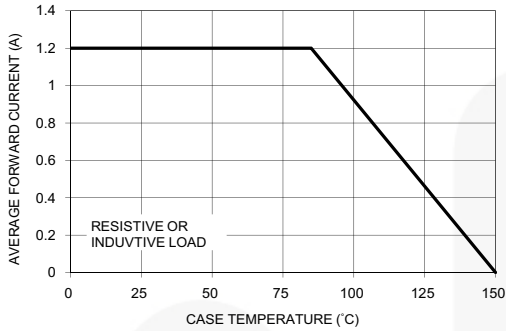


Figure 1. Forward Current Derating Curve

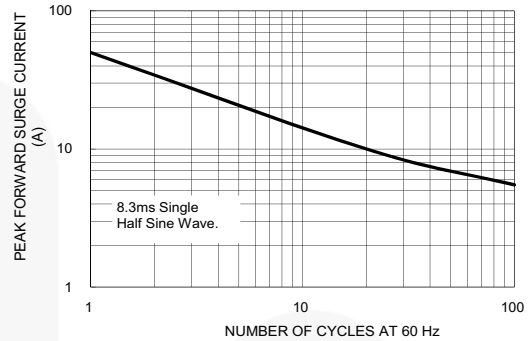


Figure 2. Maximum Non-Repetitive Forward Surge Current

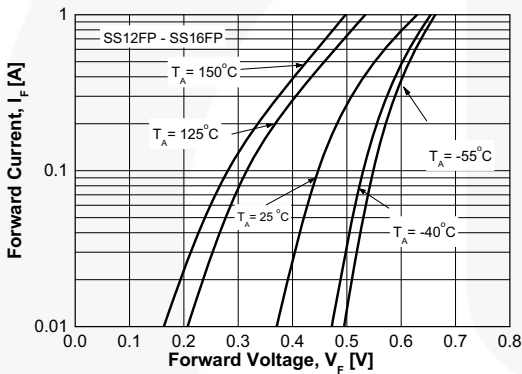


Figure 3. Typical Forward Characteristics

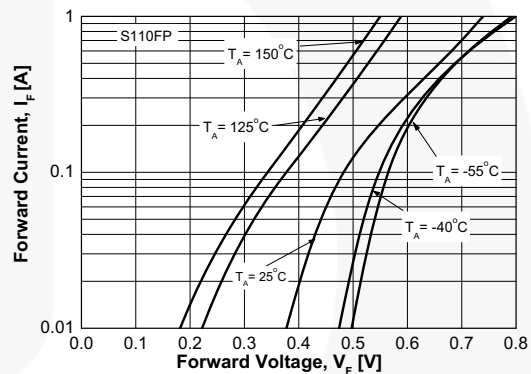


Figure 4. Typical Forward Characteristics

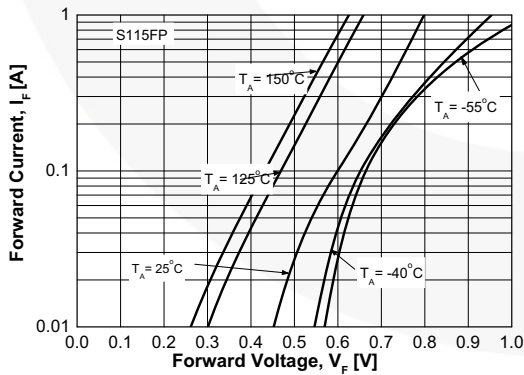


Figure 5. Typical Forward Characteristics

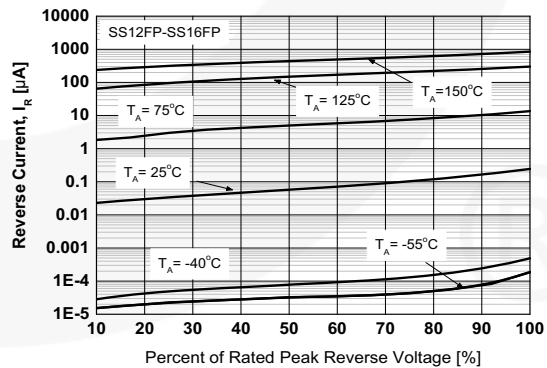


Figure 6. Typical Reverse Characteristics

Typical Performance Characteristics (Continued)

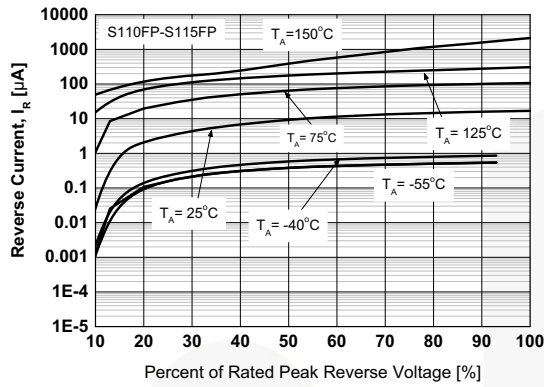


Figure 7. Typical Reverse Characteristics

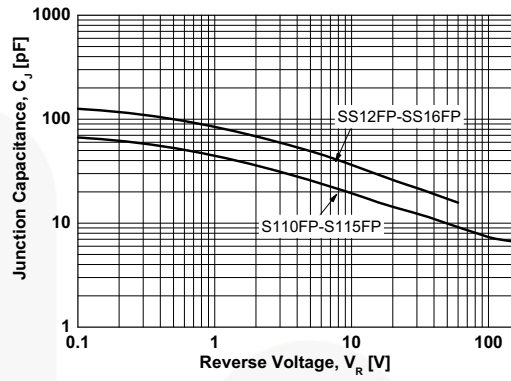
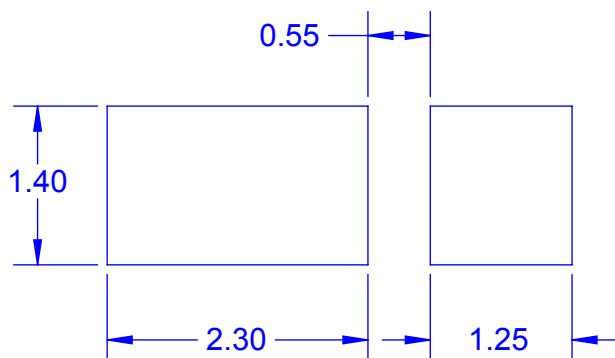
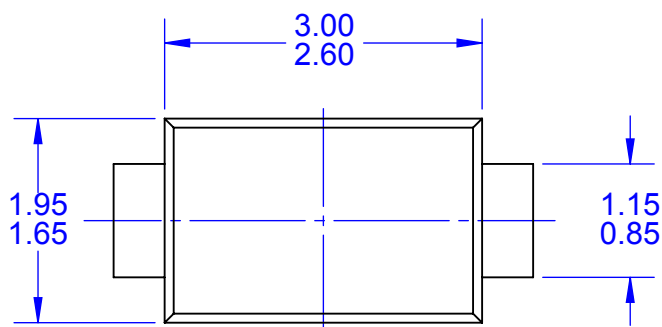
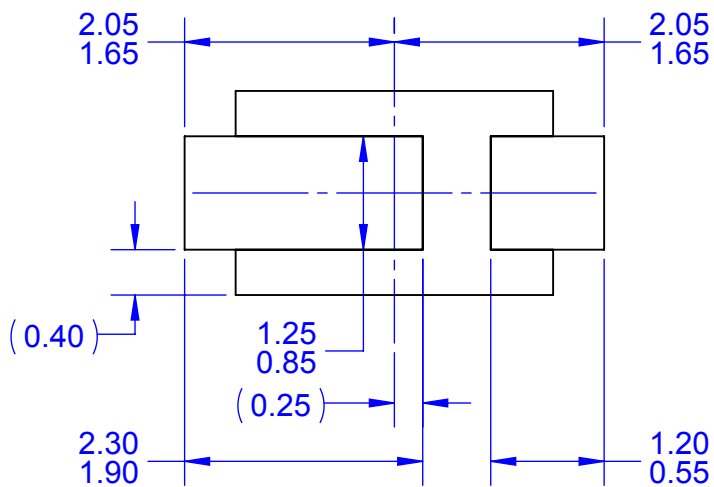
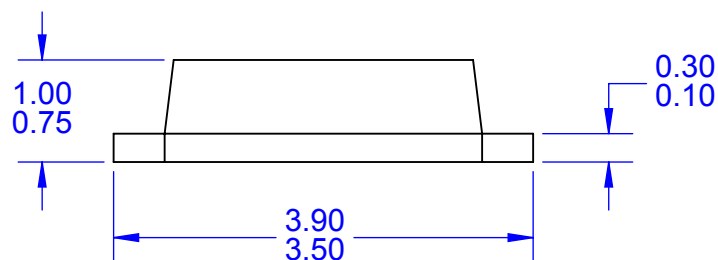


Figure 8. Typical Junction Capacitance



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