



THE DATASHEET OF S5AC-13



5.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER
Features

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.21 grams (Approximate)



Top View



Bottom

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|------|-------------------|
| S5xC-13-F | SMC | 3,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information


- S5xC = Product Type Marking Code, Ex: S5KC
 YWW = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 7 for 2017)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

| Characteristic | Symbol | S5AC | S5BC | S5DC | S5GC | S5JC | S5KC | S5MC | Unit |
|---|---------------------|------|------|------|------|------|------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | | | | | | | | |
| Working Peak Reverse Voltage | V _{RWM} | 50 | 100 | 200 | 400 | 600 | 800 | 1,000 | V |
| DC Blocking Voltage | V _R | | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current @ T _T = +75°C | I _O | 5.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 100 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 200 | | | | | | | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Terminal (Note 5) | R _{θJT} | 10 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|------|
| Maximum Forward Voltage @ I _F = 5.0A | V _{FM} | 1.15 | V |
| Peak Reverse Current @ T _A = +25°C | I _{RM} | 10 | μA |
| at Rated DC Blocking Voltage @ T _A = +125°C | | 250 | |
| Typical Total Capacitance (Note 6) | C _T | 40 | pF |

Notes: 5. Thermal Resistance Junction to Terminal, unit mounted on PC board with 5.0mm² (0.013mm thick) copper pads as Heat Sink.
6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

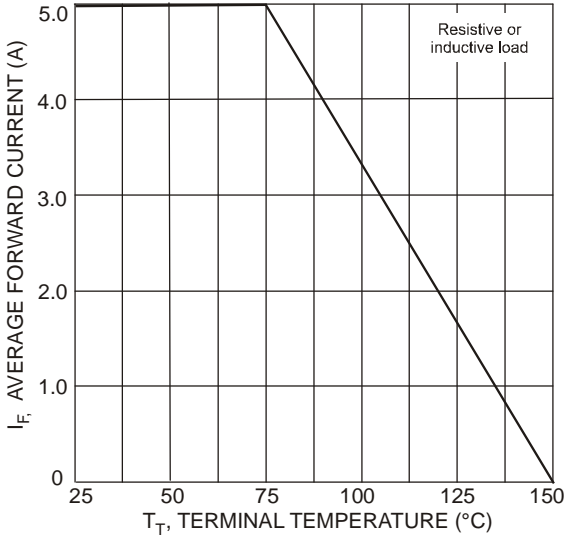


Fig. 1 Forward Current Derating Curve

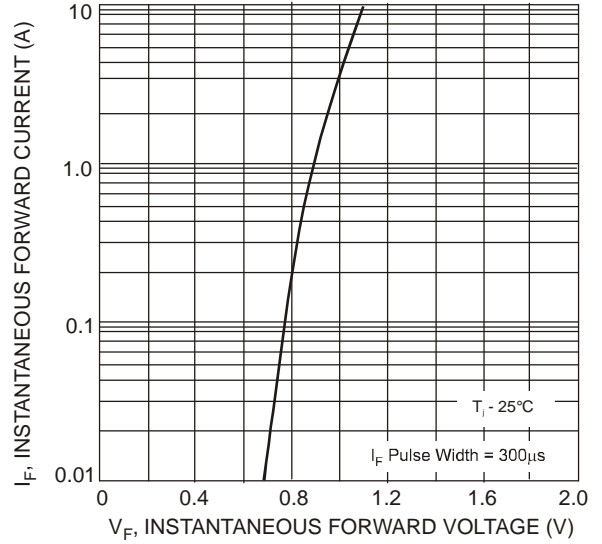


Fig. 2 Typical Forward Characteristics

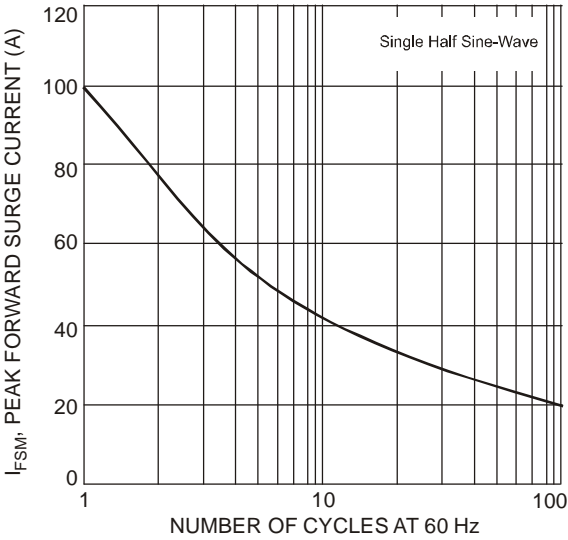


Fig. 3 Forward Surge Current Derating Curve

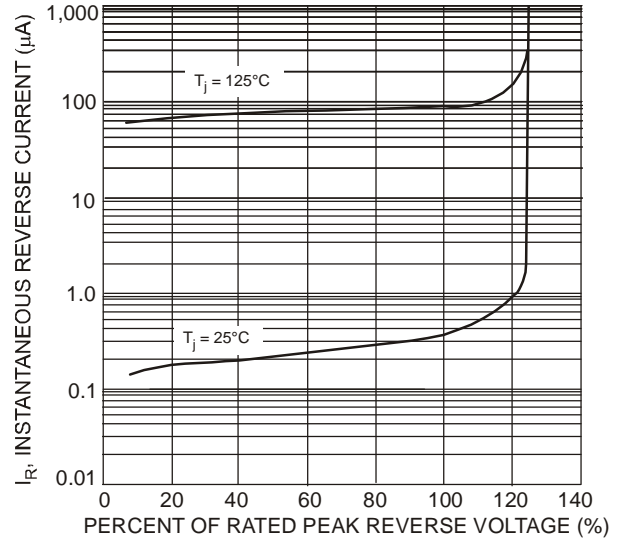
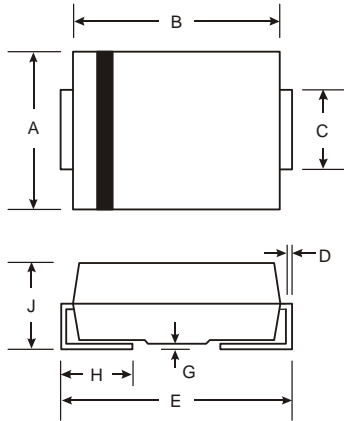


Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMC

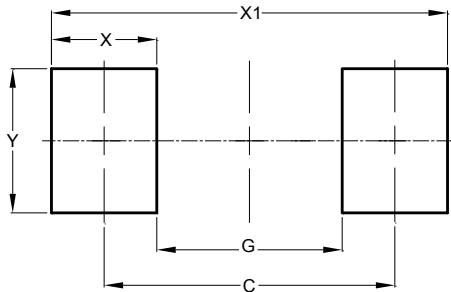


| SMC | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 5.59 | 6.22 |
| B | 6.60 | 7.11 |
| C | 2.75 | 3.18 |
| D | 0.15 | 0.31 |
| E | 7.75 | 8.13 |
| G | 0.10 | 0.20 |
| H | 0.76 | 1.52 |
| J | 2.00 | 2.50 |
| All Dimensions in mm | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMC



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 6.90 |
| G | 4.40 |
| X | 2.50 |
| X1 | 9.40 |
| Y | 3.30 |

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