

Product Summary

| V _{RRM} (V) | I _O (A) | V _{F(MAX)} (V) @ +25°C | I _{R(MAX)} (μA) @ +25°C |
|----------------------|--------------------|------------------------------------|-------------------------------------|
| 100 | 2 | 0.79 | 10 |

Description and Applications

The B2100SAF is a 2A 100V single rectifier packaged in the low profile SMAF package. Providing low V_F and excellent reverse leakage stability at high temperatures, this device is ideal for use in general rectification applications such as:

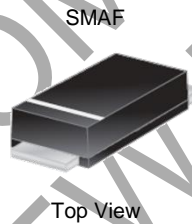
- Boost Diode
- Blocking Diode
- Recirculating Diode

Features and Benefits

- Reduced Low Forward Voltage Drop (V_F); Better Efficiency and Cooler Operation
- Reduced High-Temperature Reverse Leakage; Increased Reliability Against Thermal Runaway Failure in High Temperature Operation
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Case: SMAF
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Weight: 0.036 grams (Approximate)

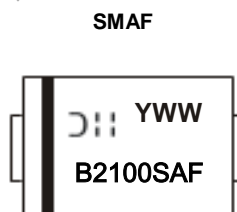


Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|------|--------------------|
| B2100SAF-13 | SMAF | 10,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



DII = Manufacturer's Marking
 B2100SAF = Product Type Marking Code
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 9 for 2019)
 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 capacitive load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 100 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current | I _O | 2 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 60 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 5) | R _{θJA} | 90 | °C/W |
| Typical Thermal Resistance Junction to Case (Note 5) | R _{θJC} | 30 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|------|------|------|--|
| Forward Voltage Drop | V _F | — | 0.74 | 0.79 | V | I _F = 2A, T _J = +25°C |
| | | — | 0.60 | — | | I _F = 2A, T _J = +125°C |
| Leakage Current (Note 6) | I _R | — | — | 10 | μA | V _R = 100V, T _J = +25°C |
| | | — | — | 2 | mA | V _R = 100V, T _J = +125°C |
| Typical Capacitance | C _T | — | 93 | — | pF | V _R = 4.0V, f = 1MHz |

Notes: 5. Device mounted on FR-4 substrate, 0.4" x 0.5", 2oz, single-sided, PC boards with 0.2" x 0.25" copper pad.
6. Short duration pulse test used to minimize self-heating effect.

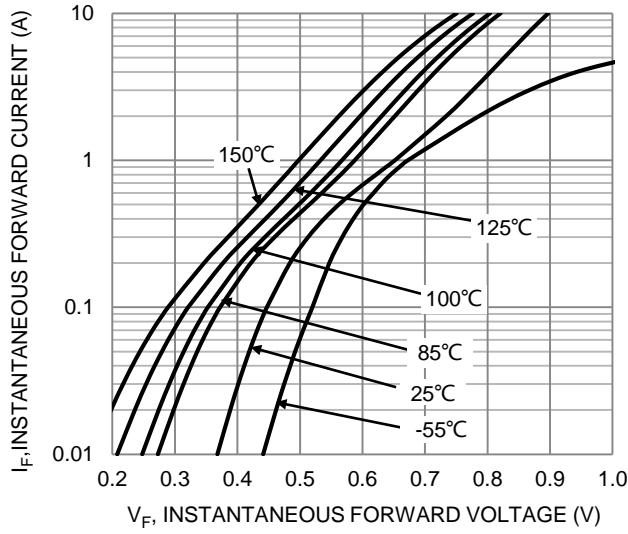


Figure 1. Typical Forward Characteristics

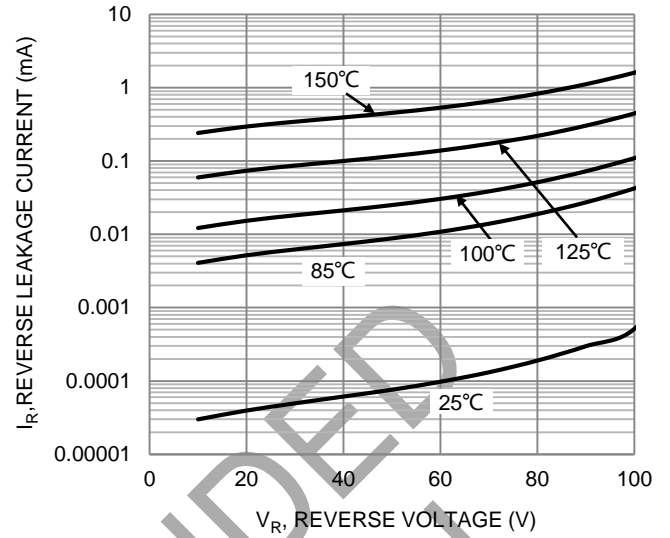


Figure 2. Typical Reverse Characteristics

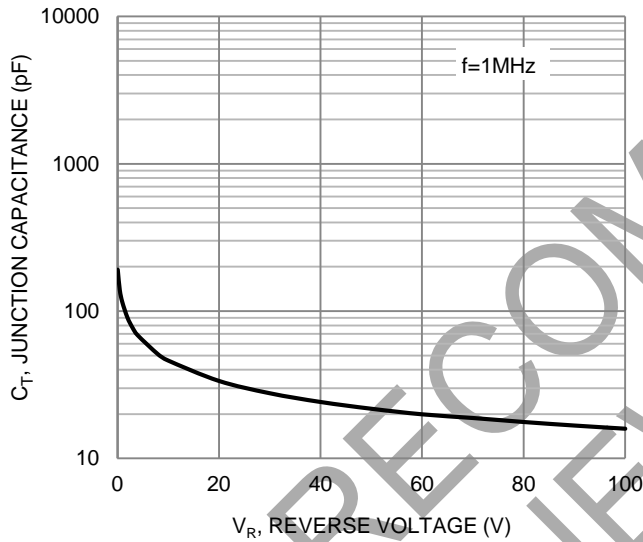


Figure 3. Typical Junction Capacitance

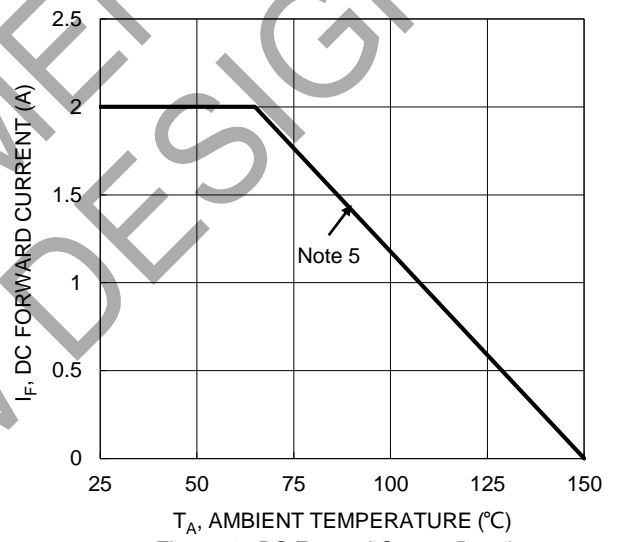


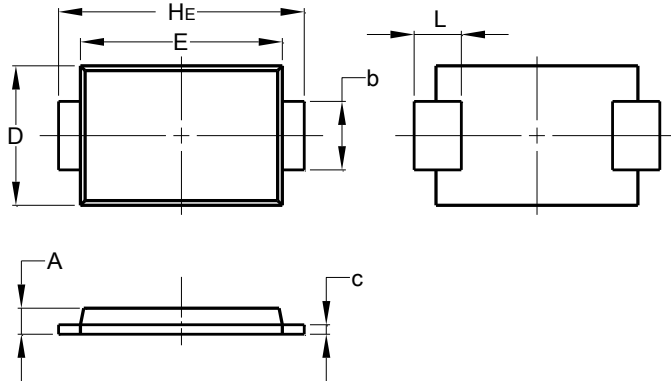
Figure 4. DC Forward Current Derating

NOT RECOMMENDED FOR NEW DESIGN

Package Outline Dimensions

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

SMAF

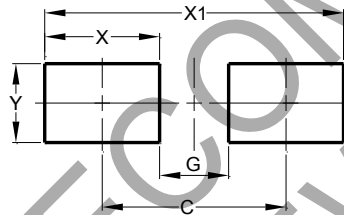


| SMAF | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.90 | 1.10 |
| b | 1.25 | 1.65 |
| c | 0.10 | 0.40 |
| D | 2.25 | 2.95 |
| E | 3.95 | 4.60 |
| HE | 4.80 | 5.60 |
| L | 0.50 | 1.50 |
| All Dimensions in mm | | |

Suggested Pad Layout

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

SMAF



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 4.00 |
| G | 1.50 |
| X | 2.50 |
| X1 | 6.50 |
| Y | 1.70 |

NOT RECOMMENDED FOR NEW DESIGN

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