

2.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

 Product Summary (@ T_A = +25°C)

| V _{RRM} (V) | I _o (A) | V _{F(MAX)} (V) | I _{R(MAX)} (mA) |
|----------------------|--------------------|-------------------------|--------------------------|
| 100 | 2 | 0.79 | 0.5 |

Description and Applications

The B2100A is a single rectifier packaged in the low profile SMA package. Providing low VF and excellent high temperature stability this device is ideal for use in general rectification applications such as:

- Boost Diode
- Blocking Diode



Top View



Bottom View

Features and Benefits

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Surge Overload Rating to 50A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SMA
- 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 ^③
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.064 grams (approximate)

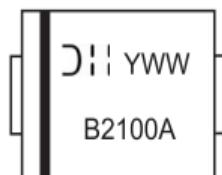
Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|------|------------------|
| B2100A-13-F | SMA | 5000/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



B2100A = Product Type Marking Code
 D11 = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 13 for 2013)
 WW = Week code (01 to 53)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

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

| Characteristic | Symbol | Value | Unit |
|--|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Working Peak Reverse Voltage | V_{RWM} | 100 | V |
| DC Blocking Voltage | V_{RM} | | |
| Average Rectified Output Current (See Figure 1) | I_O | 2.0 | A |
| RMS Reverse Voltage | $V_{R(\text{RMS})}$ | 70 | V |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 50 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|------|
| Typical Thermal Resistance Junction to Terminal (Note 5) | $R_{\theta JT}$ | 25 | °C/W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +125 | °C |

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|----------|-----|-----|------|------|---|
| Forward Voltage Drop | V_F | — | — | 0.79 | V | $I_F = 2.0\text{A}, T_A = +25^\circ\text{C}$ |
| | | — | — | 0.69 | V | $I_F = 2.0\text{A}, T_A = +100^\circ\text{C}$ |
| Peak Reverse Current at Rated DC Blocking Voltage | I_{RM} | — | — | 0.5 | mA | $V_R = 100\text{V}, T_A = +25^\circ\text{C}$ |
| | | — | — | 15 | mA | $V_R = 100\text{V}, T_A = +100^\circ\text{C}$ |
| Typical Total Capacitance (Note 6) | C_T | | 75 | — | pF | $V_R = 4\text{V}, f = 1\text{MHz}$ |

Notes: 5. Valid provided that terminals are kept at ambient temperature.
 6. Short duration pulse test used to minimize self-heating effect.

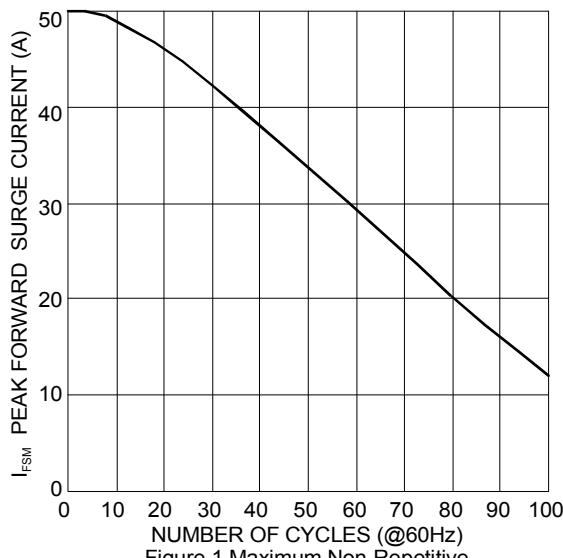


Figure 1 Maximum Non-Repetitive Peak Forward Surge Current

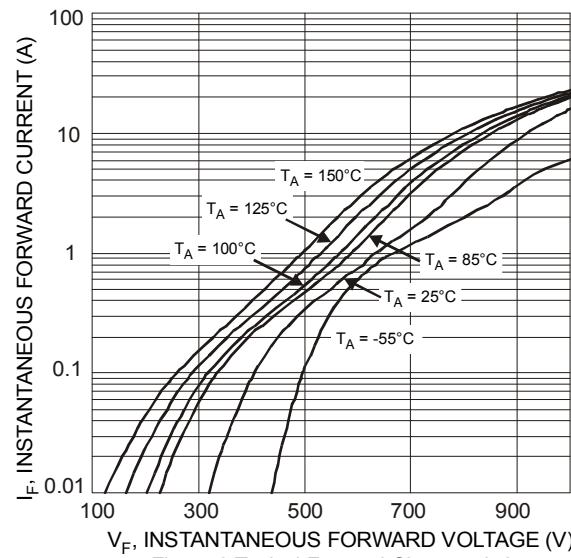


Figure 2 Typical Forward Characteristics

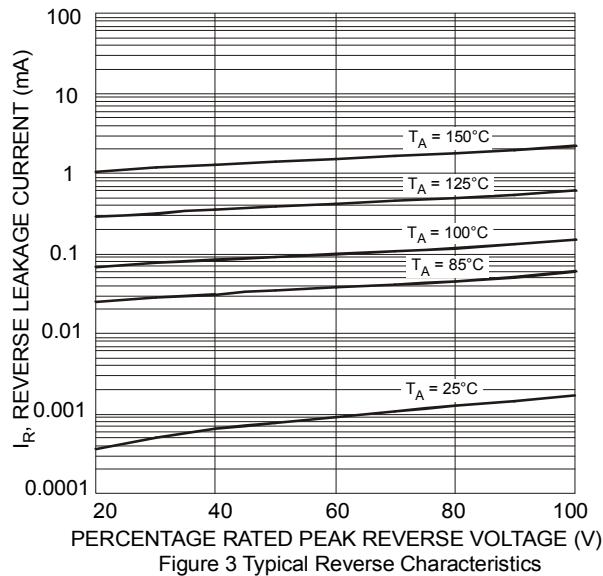


Figure 3 Typical Reverse Characteristics

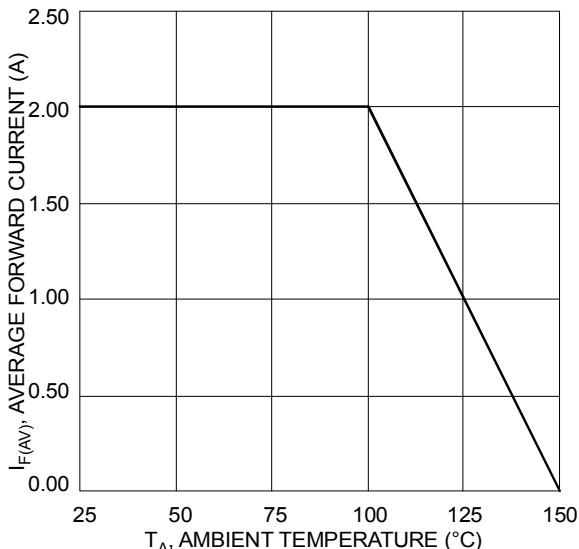


Figure 4 Forward Current Derating Curve

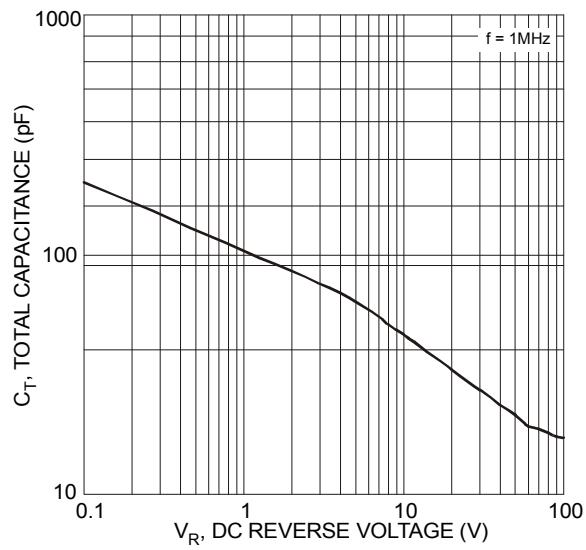
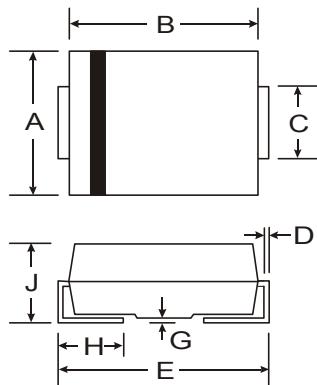


Figure 5 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

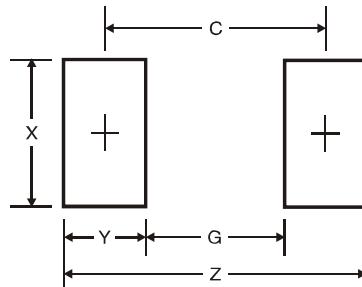


| SMA | | |
|----------|------|------|
| Dim | Min | Max |
| A | 2.29 | 2.92 |
| B | 4.00 | 4.60 |
| C | 1.27 | 1.63 |
| D | 0.15 | 0.31 |
| E | 4.80 | 5.59 |
| G | 0.05 | 0.20 |
| H | 0.76 | 1.52 |
| J | 2.01 | 2.30 |

All Dimensions in mm

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 6.5 |
| G | 1.5 |
| X | 1.7 |
| Y | 2.5 |
| C | 4.0 |

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