

Product Summary

| V_R (V) | I_O (A) | V_F Max (V) @ +25°C | I_R Max (μA) @ +25°C |
|--------------|--------------|--------------------------|---------------------------|
| 100 | 0.25 | 0.8 | 1.0 |

Applications

- Low Voltage Rectification
- Blocking Diodes
- AC-DC
- DC-DC

Features and Benefits

- Ultra Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier SBR[®] Technology
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Dot
- Terminals: Finish - NiPdAu over Copper Leadframe.
Solderable per MIL-STD-202, Method 208 ⁽⁴⁾
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Top View



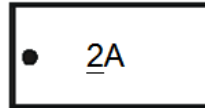
Bottom View

Ordering Information (Note 5)

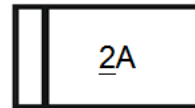
| Part Number | Case | Packaging |
|-----------------|--------------|--------------------|
| SBR02U100LPQ-7 | X1-DFN1006-2 | 3,000/Tape & Reel |
| SBR02U100LPQ-7B | X1-DFN1006-2 | 10,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Please refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>

Marking Information

SBR02U100LP-7


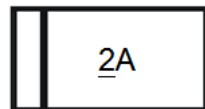
Top View
Dot Denotes
Cathode Side

SBR02U100LP-7B


Top View
Bar Denotes
Cathode Side

2A = Product Type Marking Code

OR



Top View
Bar Denotes
Cathode Side

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 | Value | Unit |
|--|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 100 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| RMS Reverse Voltage | V _{R(RMS)} | 70 | V |
| Average Rectified Output Current (See Figure 1) | I _O | 250 | mA |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 5 | A |

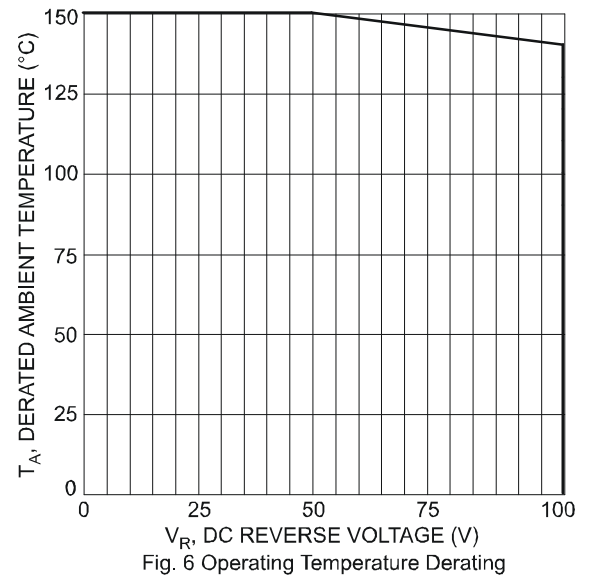
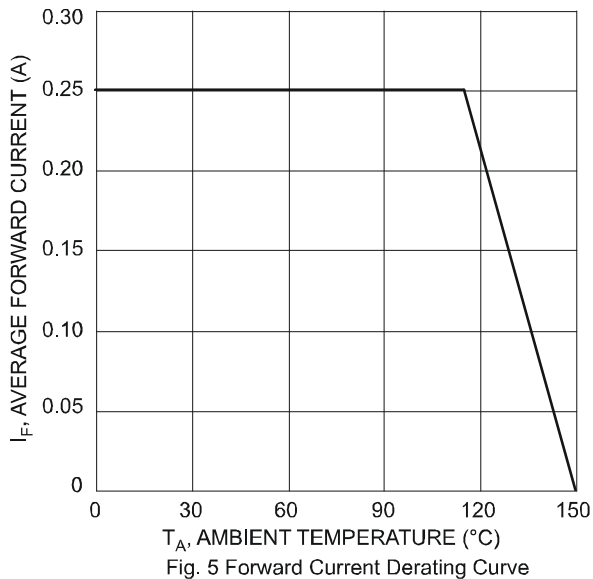
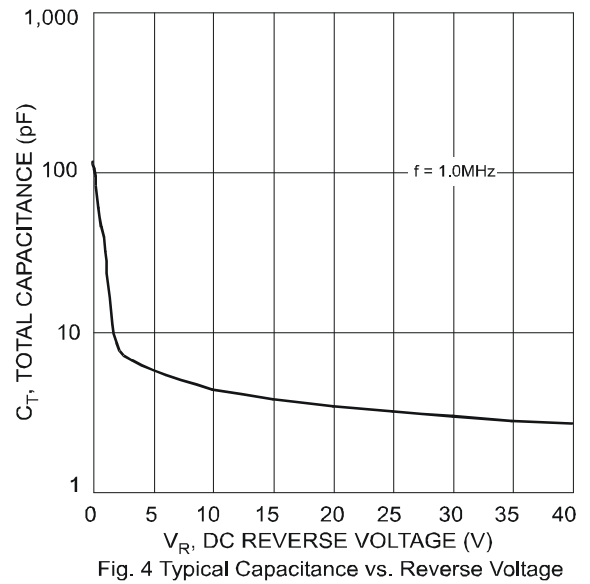
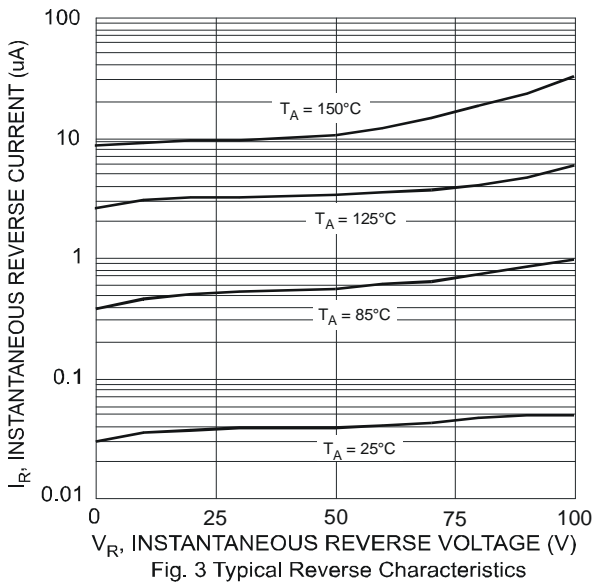
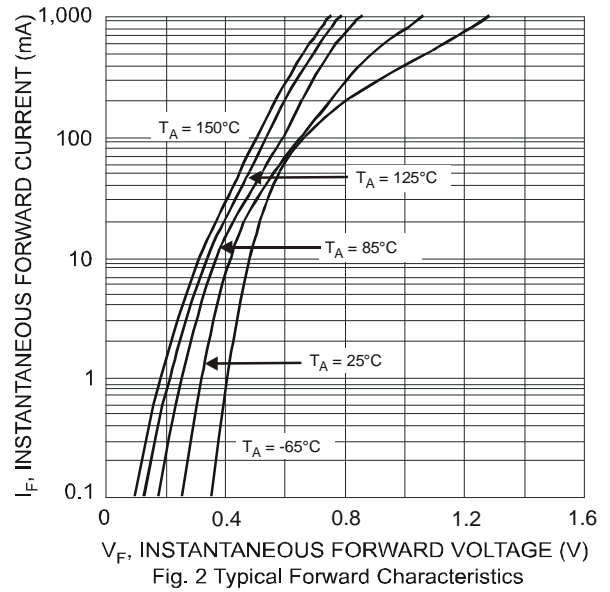
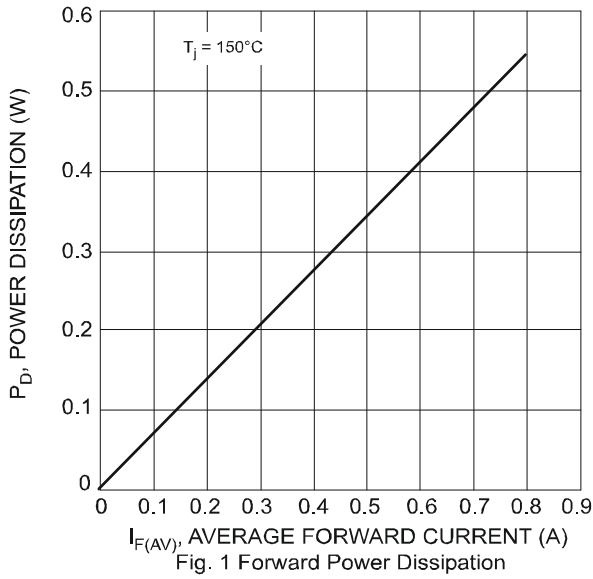
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance | | | |
| Thermal Resistance, Junction to Ambient (Note 6) T _A = +25°C | R _{θJA} | 270 | °C/W |
| Thermal Resistance, Junction to Ambient (Note 7) T _A = +25°C | R _{θJA} | 235 | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-----------|-----------|------|--|
| Reverse Breakdown Voltage (Note 8) | V _{(BR)R} | 100 | — | — | V | I _R = 1mA |
| Forward Voltage Drop | V _F | — | 0.67 | 0.72 | V | I _F = 100mA, T _J = +25°C |
| | | | 0.76 | 0.80 | | I _F = 200mA, T _J = +25°C |
| | | | 0.60 | 0.65 | | I _F = 200mA, T _J = +125°C |
| Leakage Current (Note 8) | I _R | — | 0.04 6 | 1.0 50 | μA | V _R = 75V, T _J = +25°C V _R = 75V, T _J = +85°C |

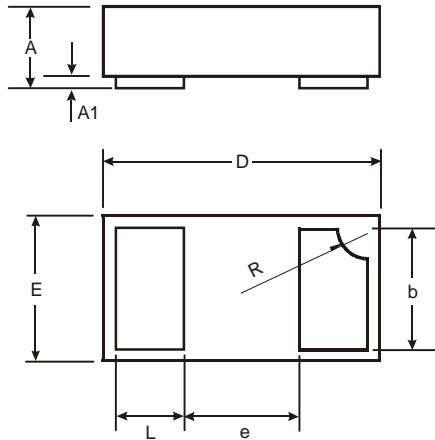
Notes: 6. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
7. Polyimide PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
8. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

X1-DFN1006-2

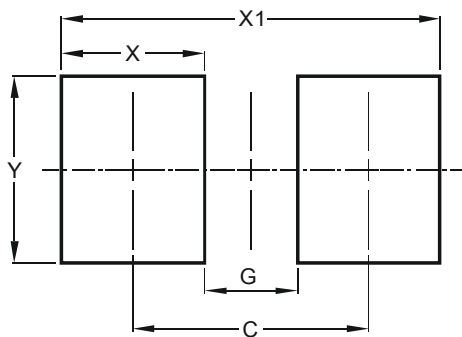


| X1-DFN1006-2 | | | |
|----------------------|------|-------|------|
| Dim | Min | Max | Typ |
| A | 0.47 | 0.53 | 0.50 |
| A1 | 0 | 0.05 | 0.03 |
| b | 0.45 | 0.55 | 0.50 |
| D | 0.95 | 1.075 | 1.00 |
| E | 0.55 | 0.675 | 0.60 |
| e | - | - | 0.40 |
| L | 0.20 | 0.30 | 0.25 |
| R | 0.05 | 0.15 | 0.10 |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

X1-DFN1006-2



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.70 |
| G | 0.30 |
| X | 0.40 |
| X1 | 1.10 |
| Y | 0.70 |

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