

Features

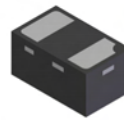
- Ultra Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: 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
- Weight: 0.001 grams



Top View



Bottom View

Ordering Information (Note 2)

| Part Number | Case | Packaging |
|---------------|-----------|--------------------|
| SBR05U20LP-7 | DFN1006-2 | 3,000/Tape & Reel |
| SBR05U20LP-7B | DFN1006-2 | 10,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
 2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



52 = Product Type Marking Code
 -7: Dot Denotes Cathode Side
 -7B: Bar Denotes Cathode Side

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} | 20 | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | V_{RM} | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 14 | V |
| Average Rectified Output Current (See Figure 1) | I_O | 500 | mA |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 5 | A |

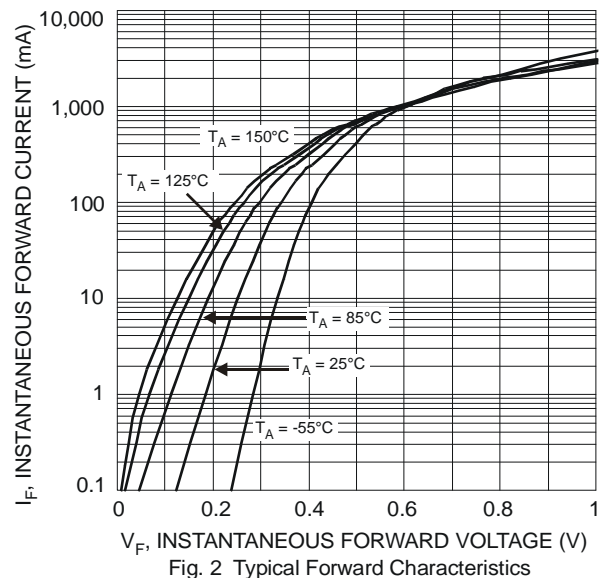
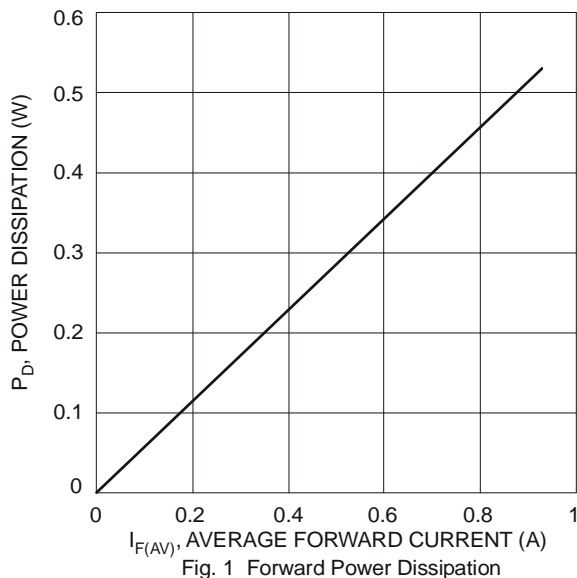
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|----------------|-------------|------------------|
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|-------------|-----|------|------|---------------|--|
| Reverse Breakdown Voltage (Note 3) | $V_{(BR)R}$ | 20 | - | - | V | $I_R = 50\mu\text{A}$ |
| Forward Voltage Drop | V_F | - | 0.34 | 0.38 | V | $I_F = 0.1\text{A}, T_J = 25^\circ\text{C}$ |
| | | - | 0.25 | 0.28 | | $I_F = 0.1\text{A}, T_J = 150^\circ\text{C}$ |
| | | - | 0.39 | 0.43 | | $I_F = 0.2\text{A}, T_J = 25^\circ\text{C}$ |
| | | - | 0.31 | 0.34 | | $I_F = 0.2\text{A}, T_J = 150^\circ\text{C}$ |
| | | - | 0.47 | 0.50 | | $I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$ |
| | | - | 0.43 | 0.46 | | $I_F = 0.5\text{A}, T_J = 150^\circ\text{C}$ |
| Leakage Current (Note 3) | I_R | - | 6 | 50 | μA | $V_R = 20\text{V}, T_J = 25^\circ\text{C}$ |
| | | - | 1.5 | 5 | mA | $V_R = 20\text{V}, T_J = 150^\circ\text{C}$ |

Notes: 3. Short duration pulse test used to minimize self-heating effect.



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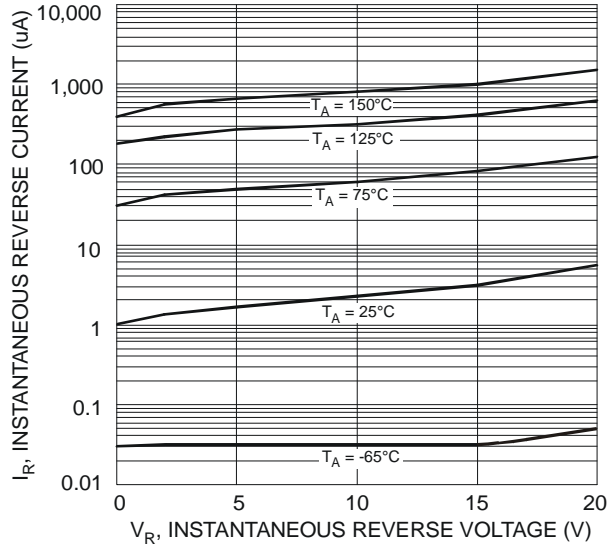


Fig. 3 Typical Reverse Characteristics

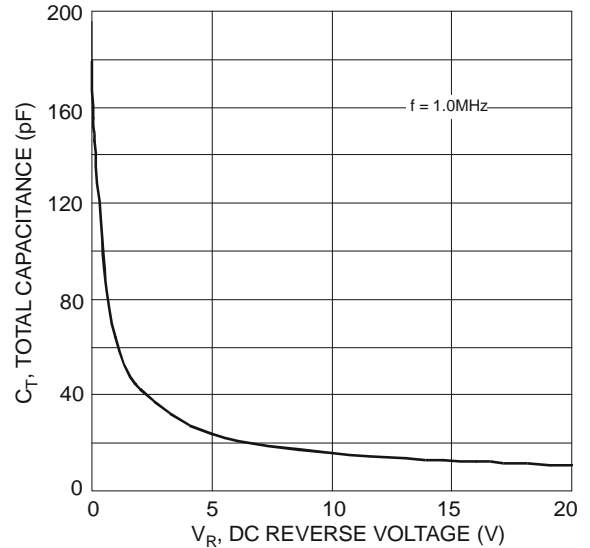


Fig. 4 Total Capacitance vs. Reverse Voltage

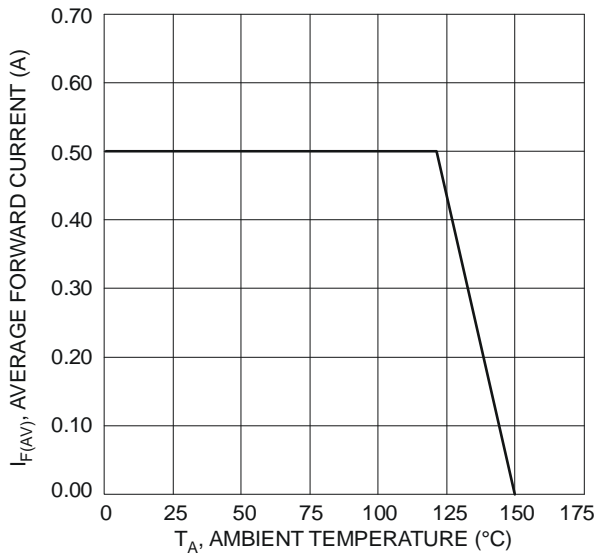


Fig. 5 Forward Current Derating Curve

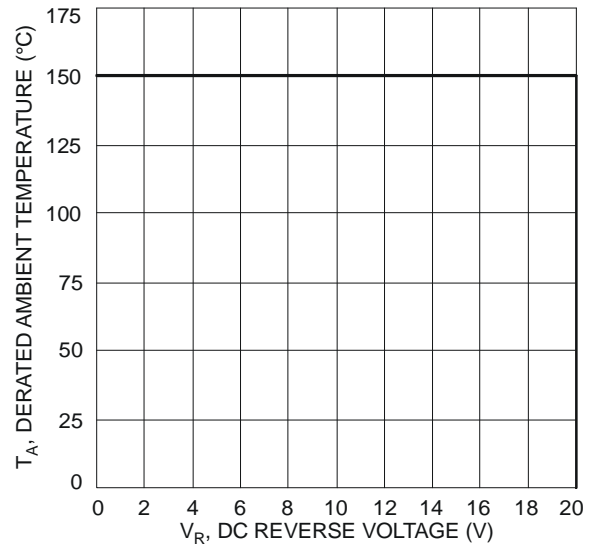
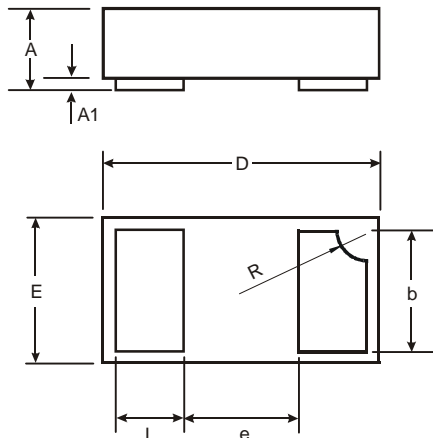


Fig. 6 Operating Temperature Derating

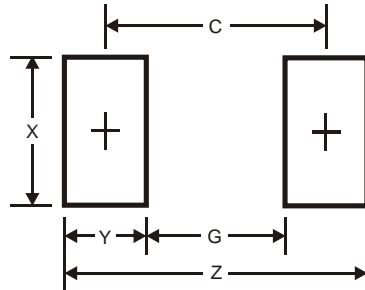
Package Outline Dimensions



| 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 | | | |

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Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 1.1 |
| G | 0.3 |
| X | 0.7 |
| Y | 0.4 |
| C | 0.7 |

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