

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 by Design, RoHS Compliant (Note 1)**
- **“Green” Device (Note 2)**

Mechanical Data

- Case: DFN1006H4-2
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Dot
- Terminals: Finish - NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.001 grams (approximate)



Bottom View

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} | 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} | 6 | A |

Thermal Characteristics @T_A = 25°C unless otherwise specified

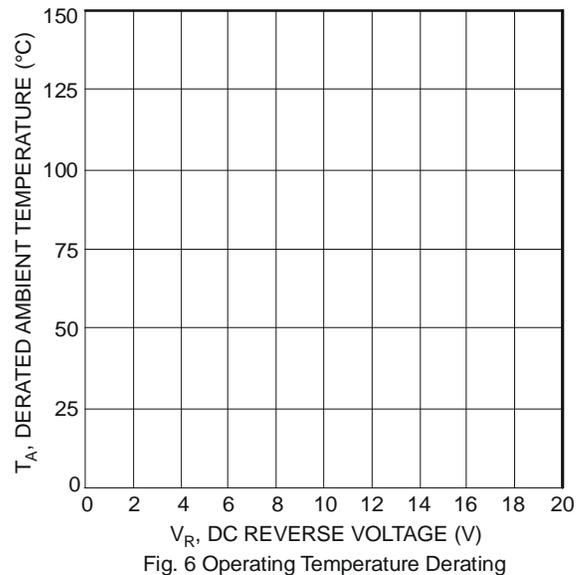
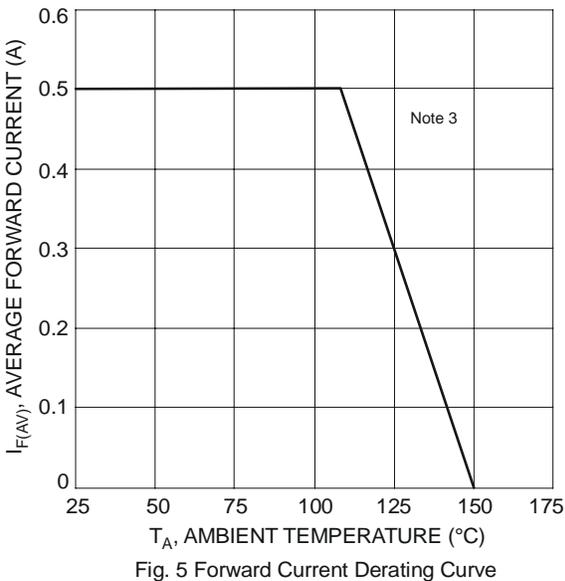
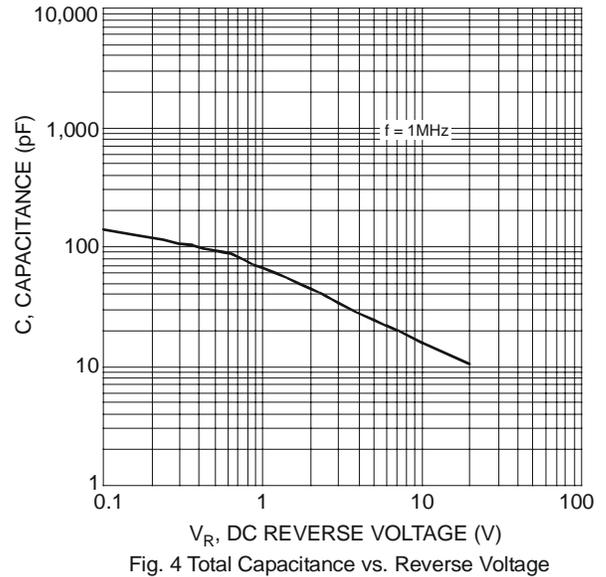
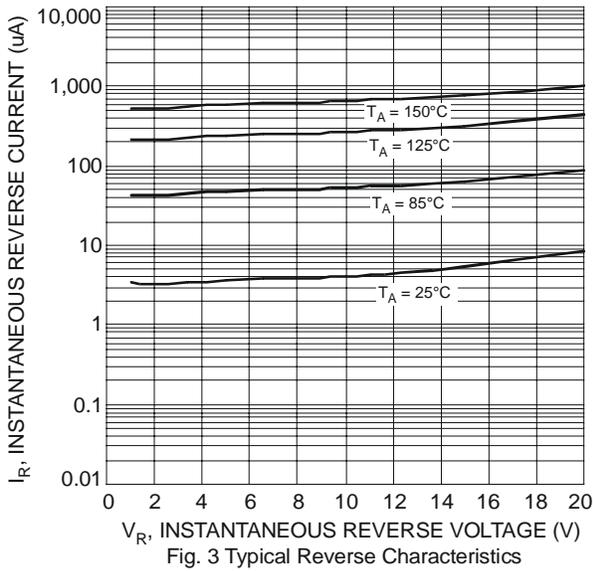
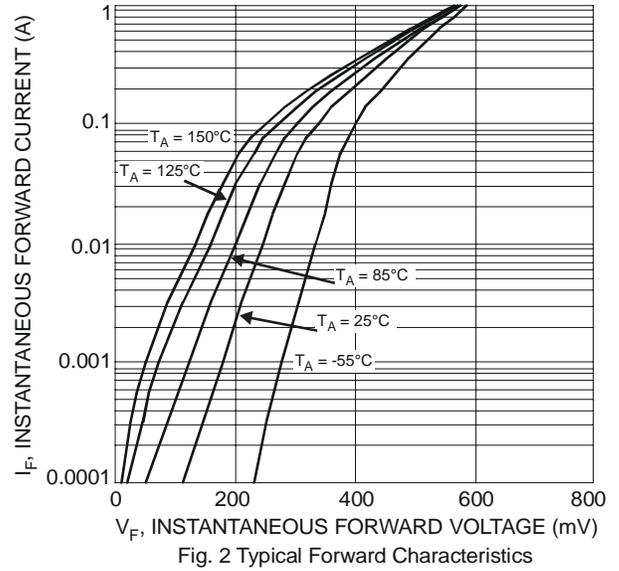
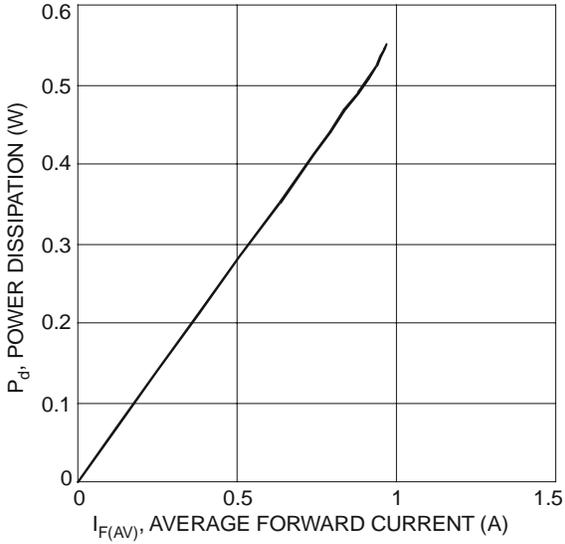
| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance (Note 3) | R _{θJA} | 224 | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|------|------|------|---|
| Reverse Breakdown Voltage (Note 4) | V _{(BR)R} | 20 | - | - | V | I _R = 50µA |
| Forward Voltage Drop | V _F | - | 0.34 | 0.38 | V | I _F = 0.1A, T _j = 25°C |
| | | | 0.25 | 0.28 | | I _F = 0.1A, T _j = 150°C |
| | | | 0.38 | 0.42 | | I _F = 0.2A, T _j = 25°C |
| | | | 0.31 | 0.34 | | I _F = 0.2A, T _j = 150°C |
| | | | 0.47 | 0.50 | | I _F = 0.5A, T _j = 25°C |
| | | | 0.42 | 0.45 | | I _F = 0.5A, T _j = 150°C |
| Leakage Current (Note 4) | I _R | - | 6 | 50 | µA | V _R = 20V, T _j = 25°C |
| | | | 1.5 | 5 | mA | V _R = 20V, T _j = 150°C |

- Notes:
1. No purposefully added lead.
 2. Diodes Inc.'s “Green” policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 3. Device mounted on FR-4 substrate. 2” x 2” 2oz. Copper, single sided PCB board.
 4. Short duration pulse test used to minimize self-heating effect.

SBR is a registered trademark of Diodes Incorporated.

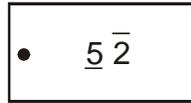


Ordering Information (Note 5)

| Part Number | Case | Packaging |
|---------------|-------------|------------------|
| SBR05U20LPS-7 | DFN1006H4-2 | 3000/Tape & Reel |

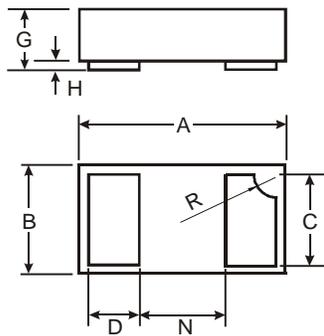
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



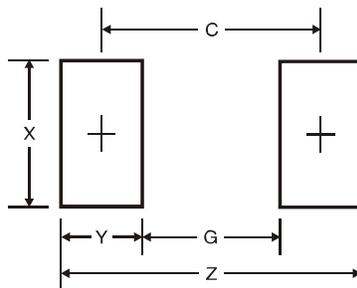
52 = Product Type Marking Code
Dot Denotes Cathode Side

Package Outline Dimensions



| DFN1006H4-2 | | | |
|----------------------|------|-------|------|
| Dim | Min | Max | Typ |
| A | 0.95 | 1.075 | 1.00 |
| B | 0.55 | 0.675 | 0.60 |
| C | 0.45 | 0.55 | 0.50 |
| D | 0.20 | 0.30 | 0.25 |
| G | 0.34 | 0.4 | 0.37 |
| H | 0 | 0.05 | 0.03 |
| N | — | — | 0.40 |
| R | 0.05 | 0.15 | 0.10 |
| All Dimensions in mm | | | |

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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