

Features

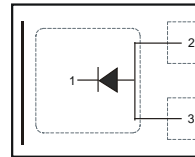
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free By Design, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**



Top View



Bottom View


 Top View
Internal Schematic

Mechanical Data

- Case: DFN1411-3
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish – NiPdAu over Copper Lead Frame. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 2.35mg (approximate)

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} | 40 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| RMS Reverse Voltage | V _{R(RMS)} | 28 | V |
| Average Rectified Output Current (See Figure 1) | I _O | 1.0 | A |
| 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 2) | R _{θJA} | 190 | °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 3) | V _{(BR)R} | 40 | - | - | V | I _R = 100μA |
| Forward Voltage Drop | V _F | - | 0.39 | 0.42 | V | I _F = 0.5A, T _J = 25°C |
| | | - | 0.46 | 0.49 | | I _F = 1.0A, T _J = 25°C |
| | | - | 0.34 | 0.37 | | I _F = 0.5A, T _J = 125°C |
| | | - | 0.43 | 0.47 | | I _F = 1.0A, T _J = 125°C |
| Leakage Current (Note 3) | I _R | - | - | 50 | μA | V _R = 20V, T _J = 25°C |
| | | | | 100 | | V _R = 40V, T _J = 25°C |

- Notes:
1. No purposefully added lead.
 2. Device mounted on Polyimide substrate 1" x 1", 2oz. Copper double sided PCB board.
 3. Short duration pulse test used to minimize self-heating effect.

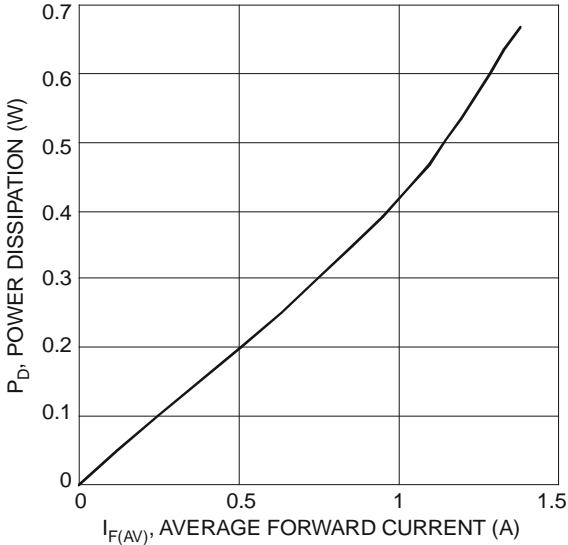


Fig. 1 Forward Power Dissipation

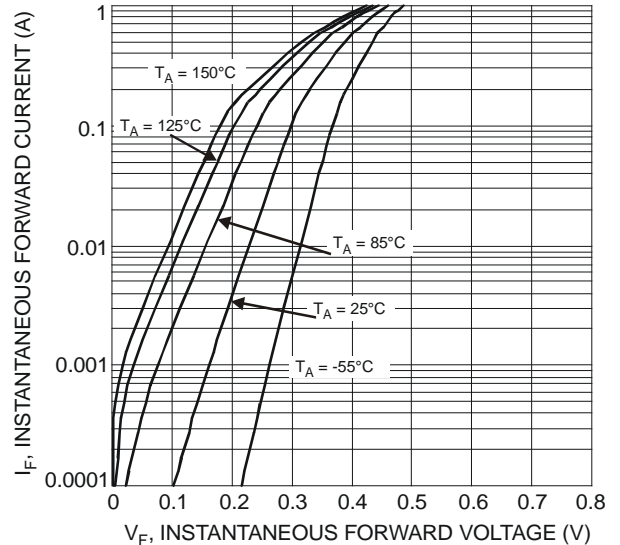


Fig. 2 Typical Forward Characteristics

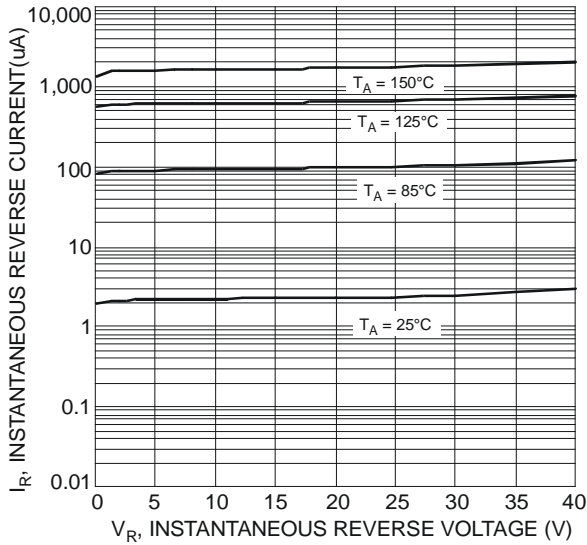


Fig. 3 Typical Reverse Characteristics

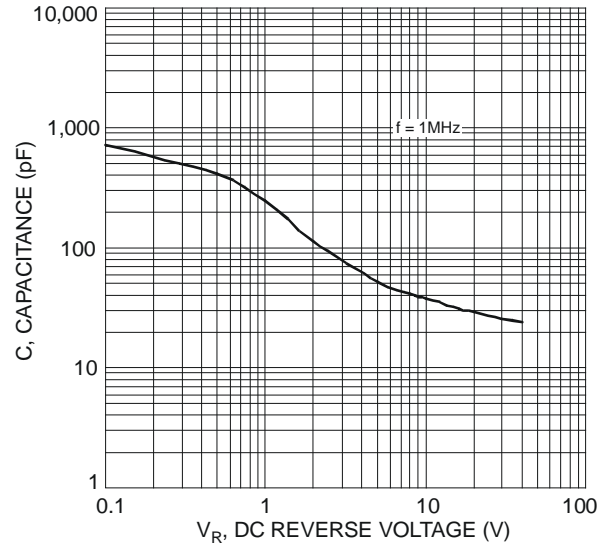


Fig. 4 Total Capacitance vs. Reverse Voltage

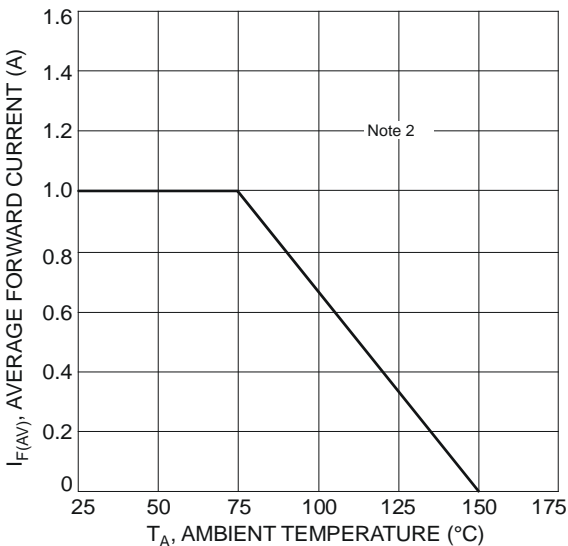


Fig. 5 Forward Current Derating Curve

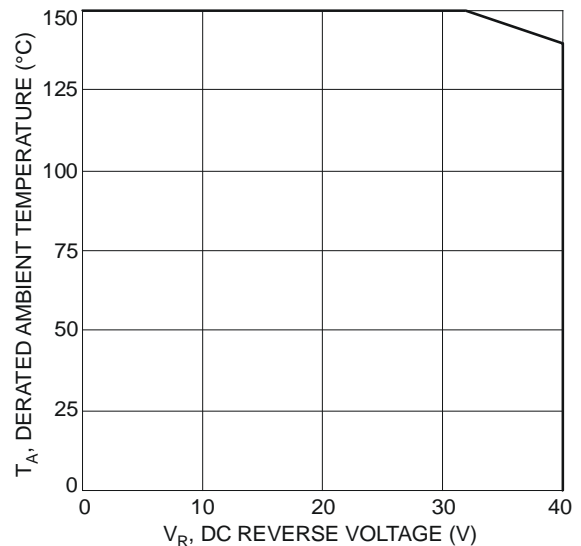


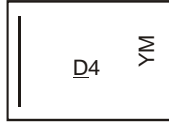
Fig. 6 Operating Temperature Derating

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|-----------|------------------|
| SBR1U40LP-7 | DFN1411-3 | 3000/Tape & Reel |

Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



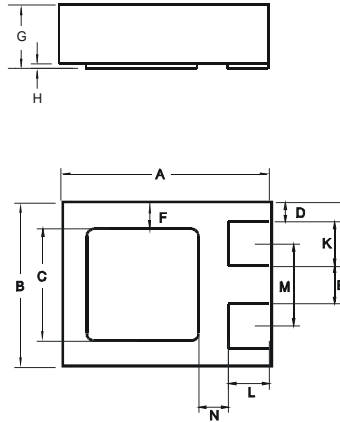
D4 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: U = 2007
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|
| Code | U | V | W | X | Y | Z | A | B | C |

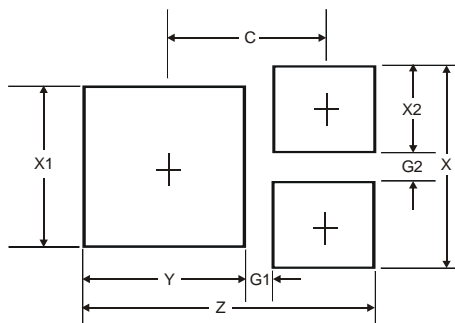
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Package Outline Dimensions



| DFN1411-3 | | | |
|----------------------|------|------|-------|
| Dim | Min | Max | Typ |
| A | 1.35 | 1.48 | 1.40 |
| B | 1.05 | 1.18 | 1.10 |
| C | 0.65 | 0.85 | 0.75 |
| D | — | — | 0.125 |
| E | — | — | 0.25 |
| F | — | — | 0.175 |
| G | 0.47 | 0.53 | 0.50 |
| H | 0 | 0.05 | 0.02 |
| K | 0.25 | 0.35 | 0.30 |
| L | 0.22 | 0.33 | 0.275 |
| M | — | — | 0.55 |
| N | — | — | 0.20 |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 1.38 |
| G1 | 0.15 |
| G2 | 0.15 |
| X | 0.95 |
| X1 | 0.75 |
| X2 | 0.40 |
| Y | 0.75 |
| C | 0.76 |

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