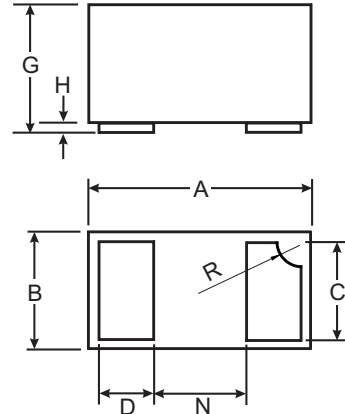


### Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Leadless Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **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-020C
- Terminal Connections: Cathode Dot
- Terminals: Finish - NiPdAu annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking: L1, Dot Denotes Cathode Side
- Ordering Information: See Page 2
- Weight: 0.001 grams



| DFN1006-2            |      |       |      |
|----------------------|------|-------|------|
| 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                    | 0.47 | 0.53  | 0.50 |
| H                    | 0    | 0.05  | 0.03 |
| N                    | —    | —     | 0.40 |
| R                    | 0.05 | 0.15  | 0.10 |
| All Dimensions in mm |      |       |      |

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic   | Symbol  | Value | Unit |
|--|---|-------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RRWM</sub><br>V <sub>R</sub> | 30    | V    |
| Forward Continuous Current   | I <sub>F</sub>  | 200   | mA   |
| Repetitive Peak Forward Current  | I <sub>FRM</sub>  | 300   | mA   |
| Forward Surge Current @ t < 1.0s   | I <sub>FSM</sub>  | 600   | mA   |

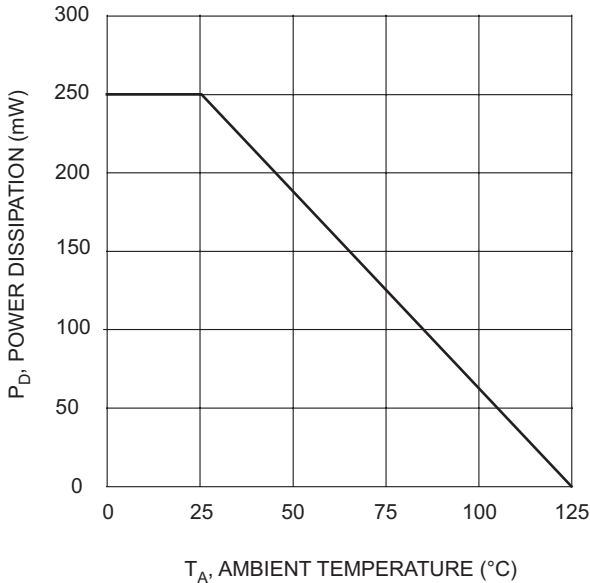
### Thermal Characteristics

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 4)                           | P <sub>d</sub>                    | 250         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 4) | R <sub>θJA</sub>                  | 400         | °C/W |
| Operating and Storage Temperature Range              | T <sub>j</sub> , T <sub>STG</sub> | -65 to +125 | °C   |

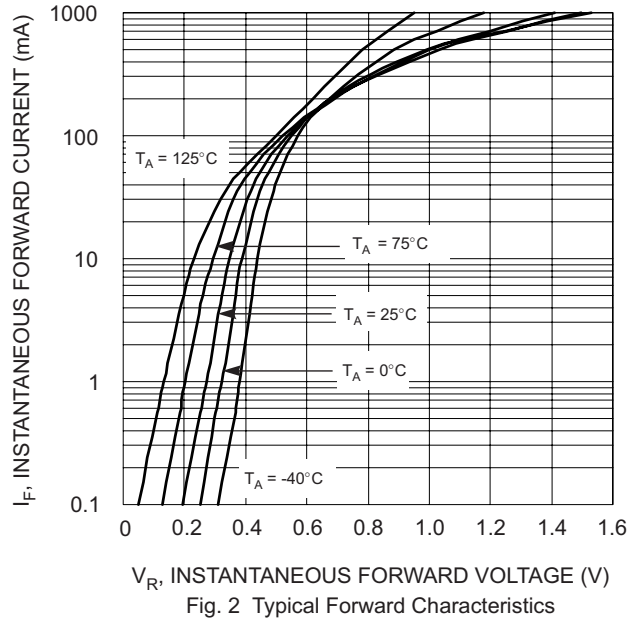
### Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                     | Symbol             | Min | Typ | Max                              | Unit | Test Condition   |
|------------------------------------|--------------------|-----|-----|----------------------------------|------|--|
| Reverse Breakdown Voltage (Note 3) | V <sub>(BR)R</sub> | 30  | —   | —                                | V    | I <sub>R</sub> = 100μA   |
| Forward Voltage                    | V <sub>F</sub>     | —   | —   | 240<br>320<br>400<br>500<br>1000 | mV   | I <sub>F</sub> = 0.1mA<br>I <sub>F</sub> = 1mA<br>I <sub>F</sub> = 10mA<br>I <sub>F</sub> = 30mA<br>I <sub>F</sub> = 100mA |
| Reverse Leakage Current (Note 3)   | I <sub>R</sub>     | —   | —   | 2.0                              | μA   | V <sub>R</sub> = 25V   |
| Total Capacitance                  | C <sub>T</sub>     | —   | —   | 10                               | pF   | V <sub>R</sub> = 1.0V, f = 1.0MHz  |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | —   | 5.0                              | ns   | I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, R <sub>L</sub> = 100Ω                       |

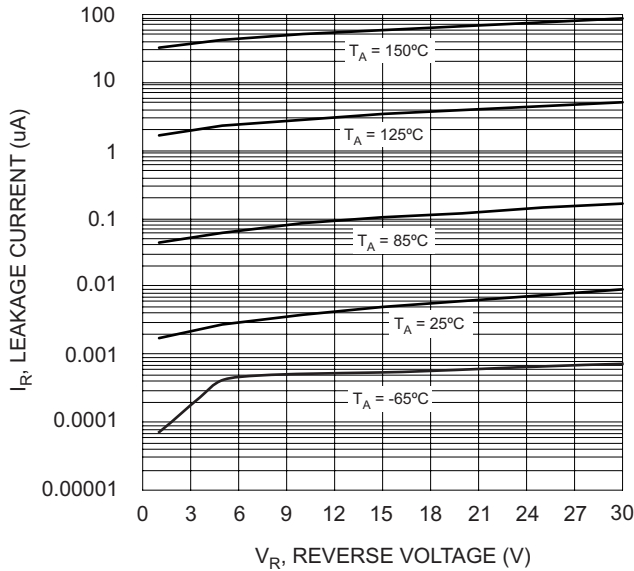
- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Short duration pulse test used to minimize self-heating effect.
  4. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. T<sub>A</sub> = 25°C.



$T_A$ , AMBIENT TEMPERATURE (°C)  
Fig. 1 Power Derating Curve



$V_R$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



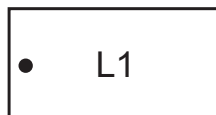
$V_R$ , REVERSE VOLTAGE (V)  
Fig. 3 Typical Reverse Characteristics

**Ordering Information** (Note 4)

| Device    | Packaging | Shipping         |
|-----------|-----------|------------------|
| BAT54LP-7 | DFN1006-2 | 3000/Tape & Reel |

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

**Marking Information**



L1 = Product Type Marking Code, Dot Denotes Cathode Side

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