

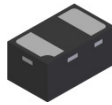
Features

- Fast Switching Speed: Maximum of 50ns
- High Reverse Breakdown Voltage: 325V
- Low Leakage Current: Maximum of 50nA when $V_R = 5V$ or Maximum of 150nA when $V_R = 250V$ at Room Temperature
- Ultra Small Plastic SMD Package: 1.0mm x 0.6mm x 0.5mm
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

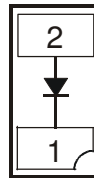
Mechanical Data

- 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
- Terminals: Finish - NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @4
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-2



Bottom View



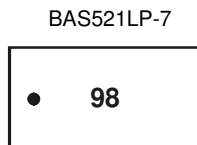
Device Schematic

Ordering Information (Note 4)

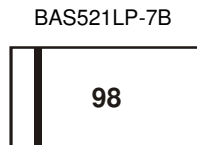
| Part Number | Case | Packaging |
|-------------|--------------|--------------------|
| BAS521LP-7 | X1-DFN1006-2 | 3,000/Tape & Reel |
| BAS521LP-7B | X1-DFN1006-2 | 10,000/Tape & Reel |

- 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

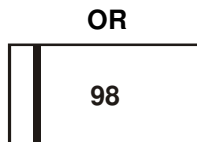


Top View
Dot Denotes
Cathode Side



Top View
Bar Denotes
Cathode Side

98 = Product Type Marking Code



Top View
Bar Denotes
Cathode Side

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 325 | V |
| Working Peak Reverse Voltage | V _{RWM} | 325 | V |
| DC Blocking Voltage | V _R | 325 | V |
| Forward Current (Note 5) | I _F | 400 | mA |
| Non-Repetitive Peak Forward Surge Current @ t = 1.0μs | I _{FSM} | 8.0 | A |
| Repetitive Peak Forward Current @ t=8.3ms (Note 5) | I _{FRM} | 3.0 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 400 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 312 | °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 | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|------------------|----------------|---|
| Reverse Breakdown Voltage (Note 6) | V _{(BR)R} | 300 | — | V | I _R = 100μA |
| Forward Voltage | V _F | — | 1.1 | V | I _F = 100mA |
| Reverse Current (Note 6) | I _R | — | 50 150 100 | nA nA μA | V _R = 5V V _R = 250V V _R = 250V, T _J = +150°C |
| Total Capacitance | C _T | — | 5 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{rr} | — | 50 | ns | I _F = I _R = 30mA, I _{rr} = 0.1 x I _R , R _L = 100Ω |

Notes: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
6. Short duration pulse test used to minimize self-heating effect.

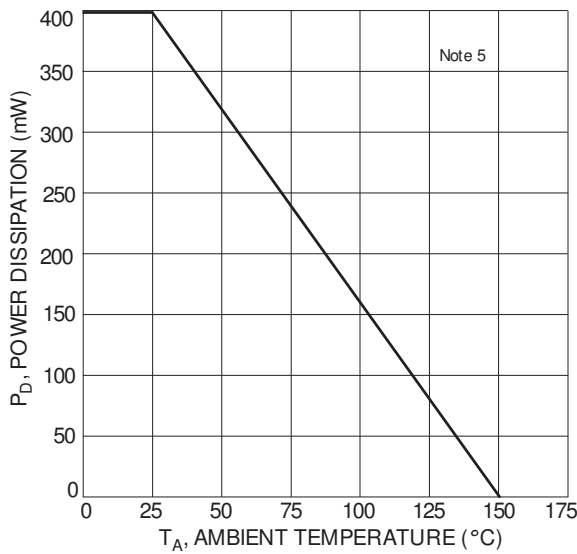


Fig. 1 Power Derating Curve

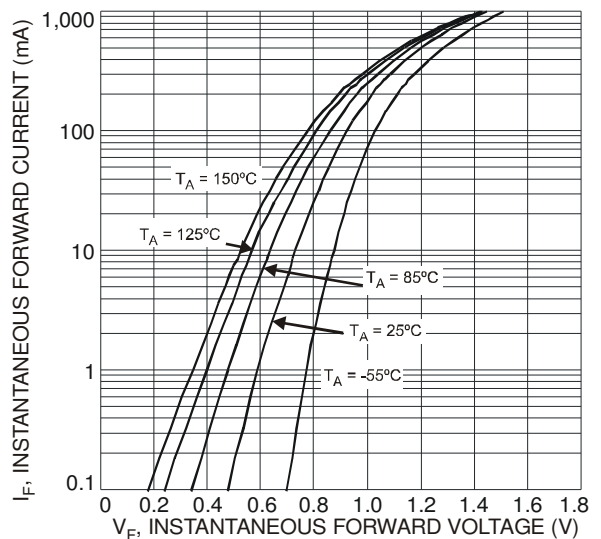


Fig. 2 Typical Forward Characteristics

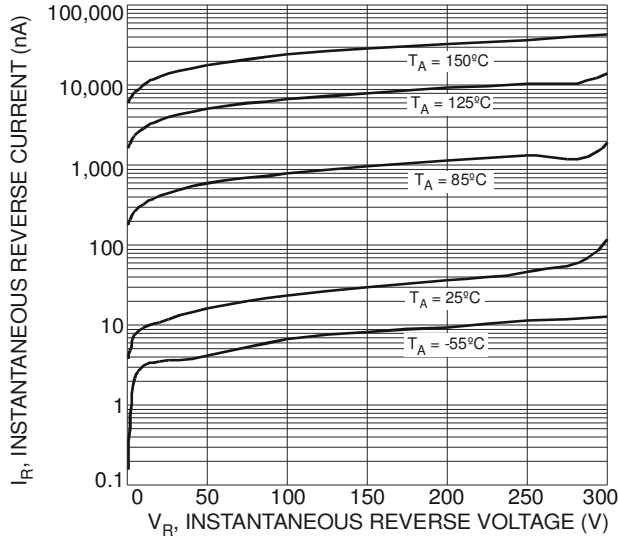


Fig. 3 Typical Reverse Characteristics

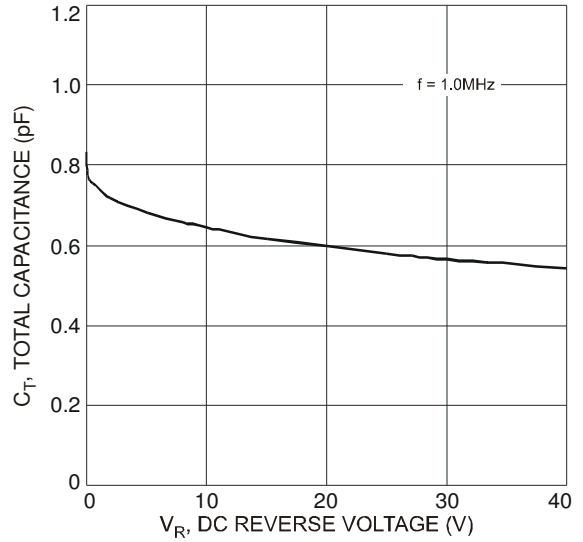
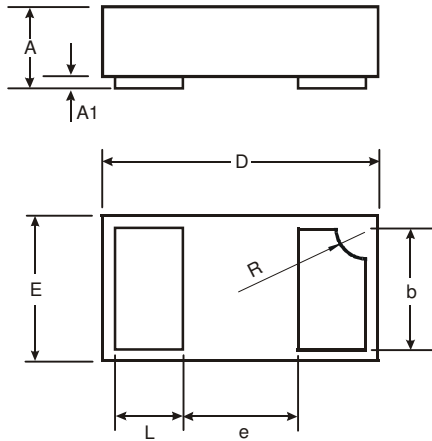


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

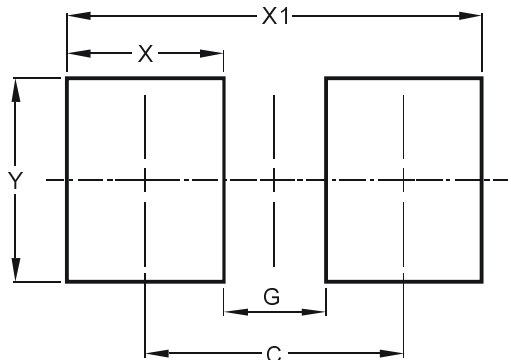
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| 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.



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

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