

Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Breakdown Voltage
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

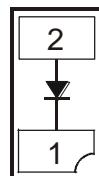
Mechanical Data

- 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
- Terminal Connections: See Marking Information
- Terminals: Finish - NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208^{e4}
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Bottom View



Device Schematic

Ordering Information (Note 4)

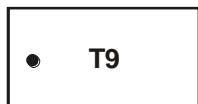
| Part Number | Case | Packaging |
|-------------|--------------|--------------------|
| BAS16HLP-7 | X1-DFN1006-2 | 3,000/Tape & Reel |
| BAS16HLP-7B | X1-DFN1006-2 | 10,000/Tape & Reel |

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>.

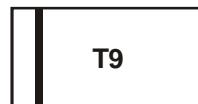
Marking Information

BAS16HLP-7



Top View
Dot Denotes
Cathode Side

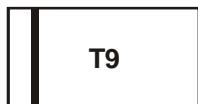
BAS16HLP-7B



Top View
Bar Denotes
Cathode Side

T9 = Product Type Marking Code

OR



Top View
Bar Denotes
Cathode Side

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|--------------|-------|------|
| Non-Repetitive Peak Reverse Voltage | V_{RM} | 125 | V |
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Working Peak Reverse Voltage | V_{RWM} | 100 | V |
| DC Blocking Voltage | V_R | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 71 | V |
| Forward Continuous Current | I_{FM} | 215 | mA |
| Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$ | I_{FSM} | 4 | |
| @ $t = 1.0\text{ms}$ | | 1 | |
| @ $t = 1.0\text{s}$ | | 0.5 | A |

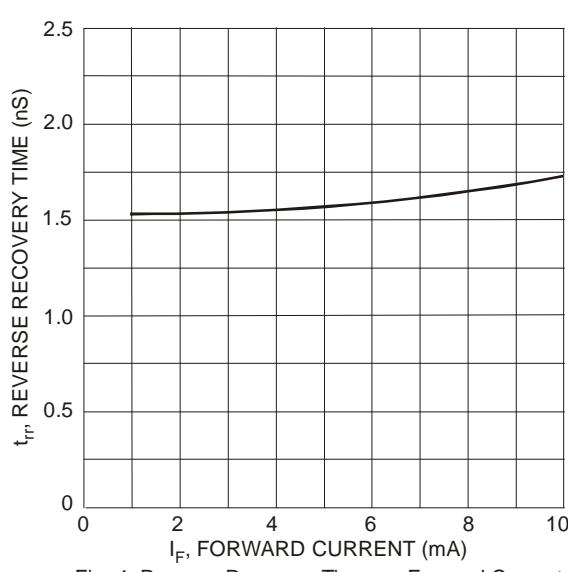
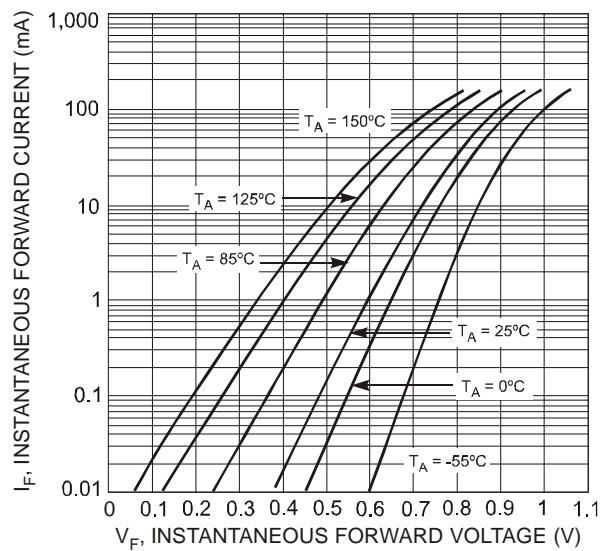
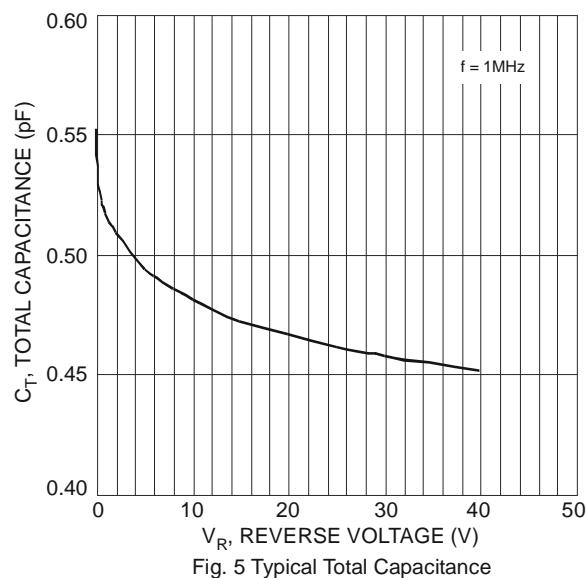
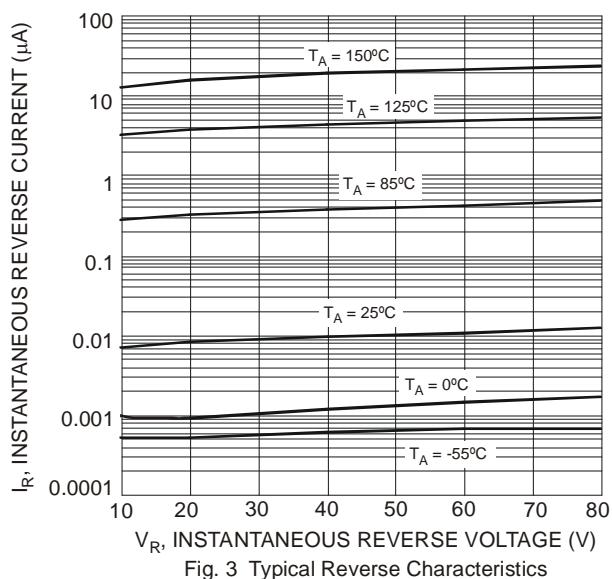
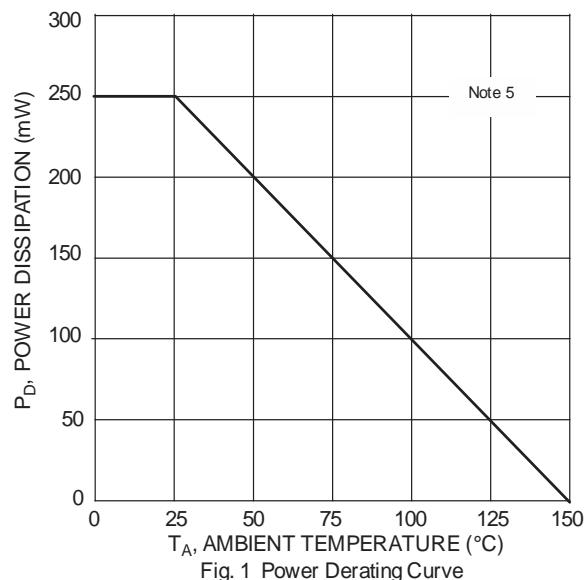
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|------|
| Power Dissipation (Note 5) | P_D | 250 | mW |
| Thermal Resistance Junction to Ambient (Note 5) | $R_{\theta JA}$ | 500 | °C/W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | °C |

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

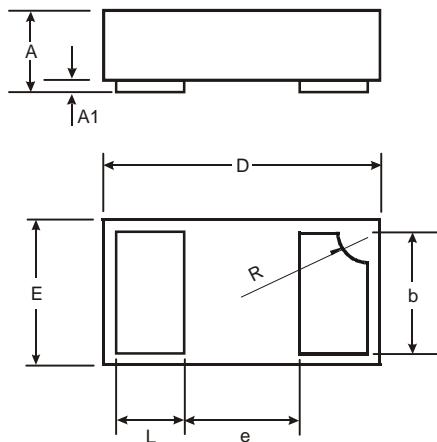
| Characteristic | Symbol | Min | Max | Unit | Test Conditions |
|------------------------------------|-------------|-----|-------|------|--|
| Reverse Breakdown Voltage (Note 6) | $V_{(BR)R}$ | 100 | — | V | $I_R = 100\mu\text{A}$ |
| Forward Voltage | V_F | — | 0.715 | V | $I_F = 1.0\text{mA}$ |
| | | — | 0.855 | | $I_F = 10\text{mA}$ |
| | | — | 1.0 | | $I_F = 50\text{mA}$ |
| | | — | 1.25 | | $I_F = 150\text{mA}$ |
| Peak Reverse Current (Note 6) | I_R | — | 500 | nA | $V_R = 80\text{V}$ |
| | | — | 50 | | $V_R = 80\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 30 | | $V_R = 25\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 30 | | $V_R = 25\text{V}$ |
| Total Capacitance | C_T | — | 1.5 | pF | $V_R = 0\text{V}, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{rr} | — | 4.0 | ns | $I_F = I_R = 10\text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ |

Notes: 5. Part mounted on FR-4 PC 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.



Package Outline Dimensions

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

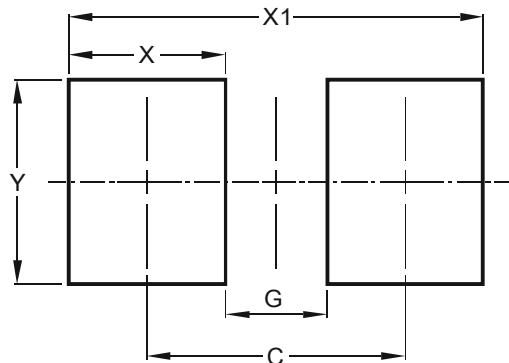


| X1-DFN1006-2 | | | |
|--------------|------|-------|------|
| Dim | Min | Max | Typ |
| A | 0.47 | 0.53 | 0.50 |
| A1 | 0 | 0.05 | 0.03 |
| b | 0.45 | 0.55 | 0.50 |
| D | 0.95 | 1.075 | 1.00 |
| E | 0.55 | 0.675 | 0.60 |
| e | - | - | 0.40 |
| L | 0.20 | 0.30 | 0.25 |
| R | 0.05 | 0.15 | 0.10 |

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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