

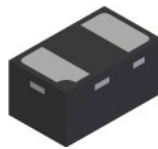
Features

- Fast Switching Speed: 50ns Maximum
- 400V High Reverse Breakdown Voltage Rating
- Low Capacitance: 2.5pF Maximum
- Surface Mount Package Ideally Suited for Automated Insertion
- **Lead Free by Design/RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Notes 2 & 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

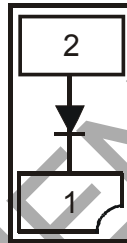
Mechanical Data

- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. (Note 2) 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
- Weight: 0.001 grams (approximate)

X1-DFN1006-2



Bottom View



Device Schematic

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|--------------|--------------|--------------------|
| BAV5004LP-7B | X1-DFN1006-2 | 10,000/Tape & Reel |

- Notes:
1. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead.
 2. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 3. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 4. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



LY = Product Type Marking Code
Line Denotes Cathode Side

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|--------------|------------------------|------|
| Repetitive Peak Reverse Voltage | V_{RRM} | 400 | V |
| Working Peak Reverse Voltage | V_{RWM} | 350 | V |
| DC Blocking Voltage | V_R | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 247 | V |
| Forward Continuous Current (Note 5) | I_{FM} | 300 | mA |
| Peak Repetitive Forward Current (Note 5) | I_{FRM} | 625 | mA |
| Non-Repetitive Peak Forward Surge Current | | @ $t = 1.0\mu\text{s}$ | 5.0 |
| | | @ $t = 1.0\text{ms}$ | 3.0 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|--------------------|
| Power Dissipation (Note 5) (See figure 1) | P_D | 350 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 357 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|-------------|-----|-----|------|---------------|---|
| Reverse Breakdown Voltage (Note 6) | $V_{(BR)R}$ | 400 | — | — | V | $I_R = 150\mu\text{A}$ |
| Forward Voltage | V_F | — | — | 0.93 | V | $I_F = 20\text{mA}$ |
| | | | | 1.09 | | $I_F = 100\text{mA}$ |
| | | | | 1.29 | | $I_F = 200\text{mA}$ |
| Reverse Current (Note 6) | I_R | — | — | 1 | μA | $V_R = 240\text{V}$ |
| | | | | 100 | μA | $V_R = 240\text{V}, T_J = 150^\circ\text{C}$ |
| Total Capacitance | C_T | — | 0.9 | 2.5 | pF | $V_R = 0\text{V}, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{rr} | — | — | 50 | ns | $I_F = I_R = 30\text{mA}$, $I_{rr} = 3.0\text{mA}, R_L = 100\Omega$ |

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.

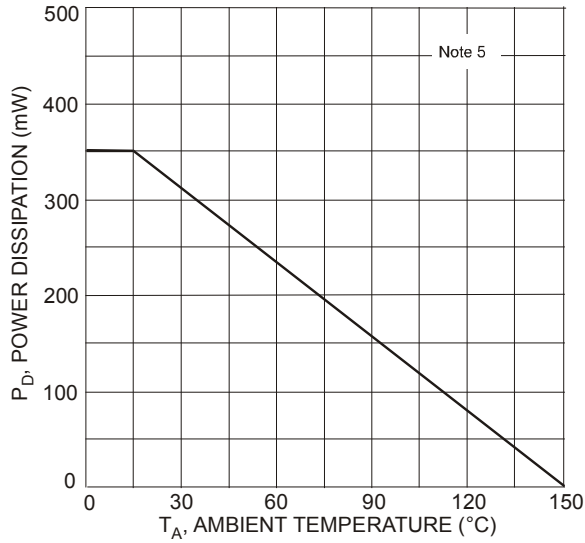


Fig. 1 Power Derating Curve

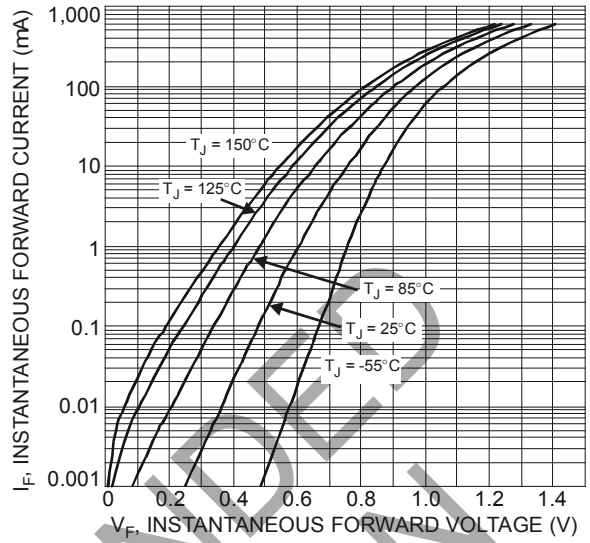


Fig. 2 Typical Forward Characteristics

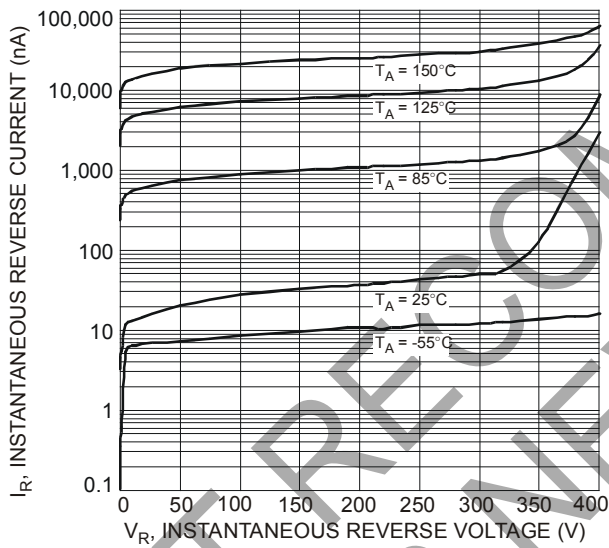


Fig. 3 Typical Reverse Characteristics

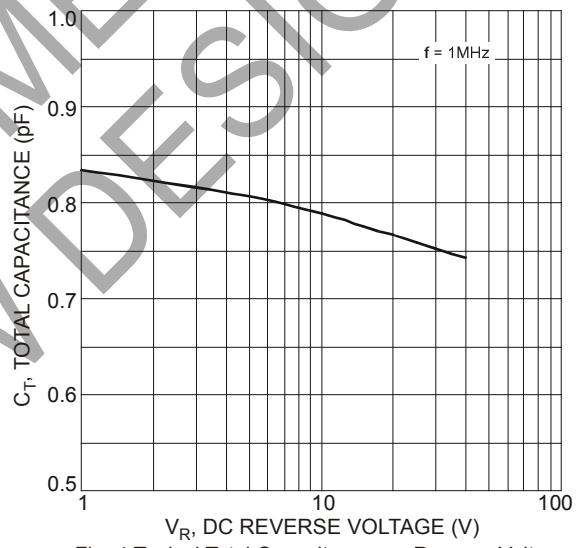
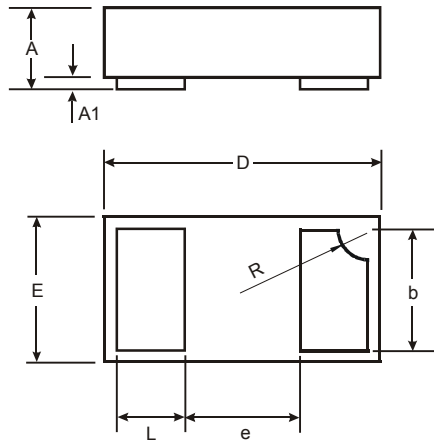


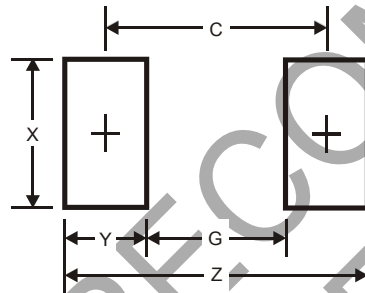
Fig. 4 Typical Total Capacitance vs. Reverse Voltage

Package Outline Dimensions



| 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



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 1.1 |
| G | 0.3 |
| X | 0.7 |
| Y | 0.4 |
| C | 0.7 |

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