

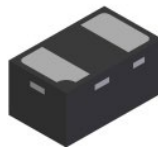
## Features

- 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**

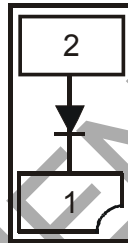
## Mechanical Data

- 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	$I_{FSM}$	@ $t = 1.0\mu\text{s}$	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	$\mu\text{A}$	$V_R = 240\text{V}$
				100	$\mu\text{A}$	$V_R = 240\text{V}, T_J = 150^\circ\text{C}$
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.

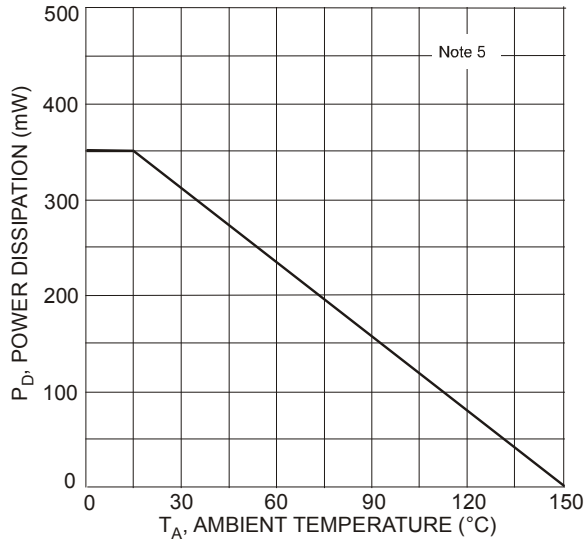


Fig. 1 Power Derating Curve

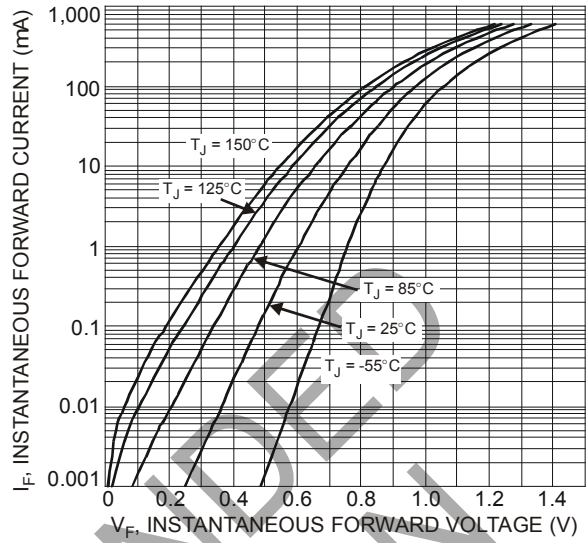


Fig. 2 Typical Forward Characteristics

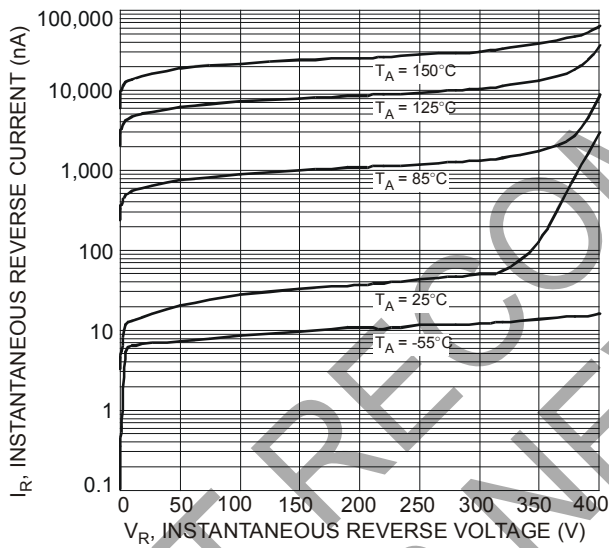


Fig. 3 Typical Reverse Characteristics

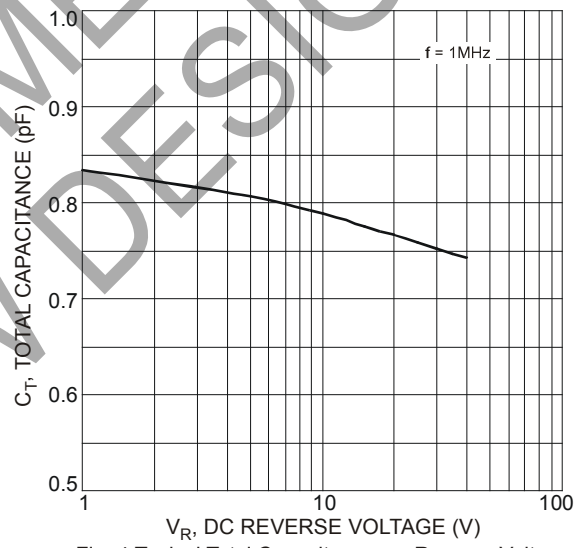
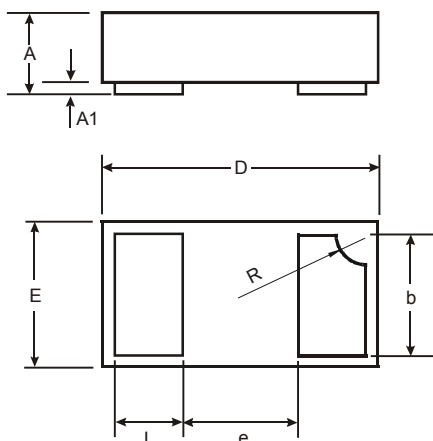


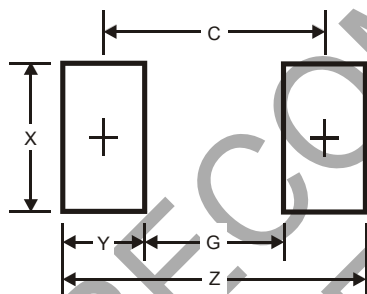
Fig. 4 Typical Total Capacitance vs. Reverse Voltage

**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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