





#### **DUAL SURFACE MOUNT SWITCHING DIODE**

### **Features**

- Fast Switching Speed
- Ultra-Small Leadless Surface Mount Package (1.0 \* 0.6mm)
- Ultra-Low Profile Package (0.5mm)
- Low Forward Voltage
- Fast Reverse Recovery
- Low Capacitance
- Totally Lead- Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

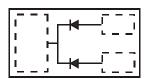
### **Mechanical Data**

- Case: X1-DFN1006-3
- Case Material: Molded Plastic, "Green" Molding Compound.
   UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 64
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-3



**Bottom View** 



Top View Internal Schematic

## **Ordering Information** (Note 4)

Part Number	Case	Packaging
BAV70LP-7	X1-DFN1006-3	3,000/Tape & Reel

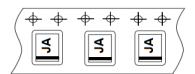
Notes:

- 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 Bar Denotes Cathode Side



JA = Product Type Marking Code



## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	$V_{RM}$	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	75	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	53	V
Forward Continuous Current (Note 5)	I <sub>FM</sub>	300	mA
Average Rectified Output Current (Note 5)	lo	150	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	450	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0µs @ t = 1.0s	I <sub>FSM</sub>	2.0 1.0	A

## **Thermal Characteristics**

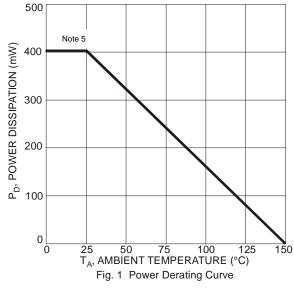
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	$P_{D}$	400	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	312	°C/W
Operating and Storage Temperature Range	$T_J,T_STG$	-65 to +150	°C

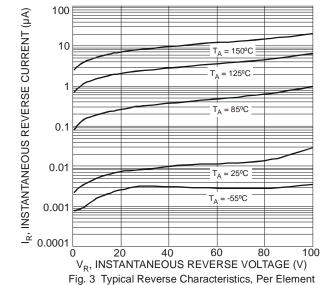
## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

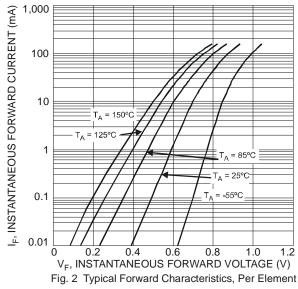
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	75	_	V	$I_R = 2.5\mu A$
Forward Voltage	V <sub>F</sub>		0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Reverse Current (Note 6)	I <sub>R</sub>	l	2.5 50 30 25		$V_R = 75V$ $V_R = 75V$ , $T_J = +150^{\circ}C$ $V_R = 25V$ , $T_J = +150^{\circ}C$ $V_R = 20V$
Total Capacitance	Ст	1	2.0	pF	$V_R = 0$ , $f = 1.0MHz$
Reverse Recovery Time	t <sub>RR</sub>		4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{RR} = 0.1 \text{ x } I_R, R_L = 100 \Omega$

5. Part mounted on FR-4 board with recommended pad layout, please see http://www.diodes.com/package-outlines.html for the latest version.
6. Short duration pulse test used to minimize self-heating effect. Notes:









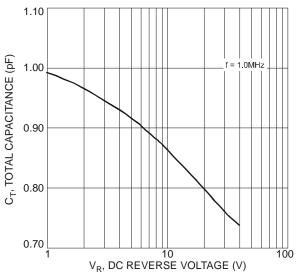


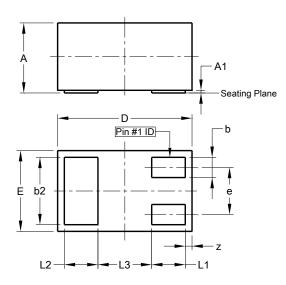
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element



## **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### X1-DFN1006-3

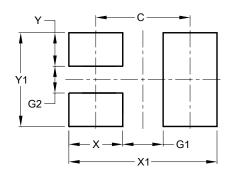


X1-DFN1006-3				
Dim	Min	Max	Тур	
Α	0.47	0.53	0.50	
A1	0.00	0.05	0.03	
b	0.10	0.20	0.15	
b2	0.45	0.55	0.50	
ם	0.95	1.075	1.00	
Е	0.55	0.675	0.60	
е	-	-	0.35	
ľ	0.20	0.30	0.25	
L2	0.20	0.30	0.25	
<u> 1</u> 3	ı	1	0.40	
Z	0.02	0.08	0.05	
All Dimensions in mm				

## **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### X1-DFN1006-3



Dimensions	Value (in mm)
С	0.70
G1	0.30
G2	0.20
Х	0.40
X1	1.10
Y	0.25
V1	0.70



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