DUAL SURFACE MOUNT SWITCHING DIODE

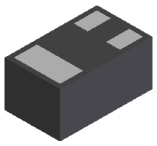
Features

- 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
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

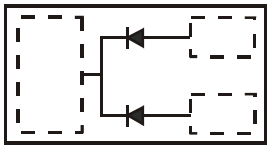
Mechanical Data

- 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
- Weight: 0.0009 grams

X1-DFN1006-3



Bottom View



Top View
Internal Schematic

Ordering Information (Note 3)

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

Notes:
1. No purposefully added lead. Halogen and Antimony Free.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
3. For packaging details, go to our website at http://www.diodes.com.

Marking Information

JA = Product Type Marking Code
Bar Denotes Cathode Side

Maximum Ratings @T_A = 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_{RRM} V_{RWM} V_R	75	V
RMS Reverse Voltage		$V_{R(RMS)}$	53	V
Forward Continuous Current (Note 4)		I_{FM}	300	mA
Average Rectified Output Current (Note 4)		I_O	150	mA
Repetitive Peak Forward Current		I_{FRM}	450	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I_{FSM}	2.0 1.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P_D	400	mW
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	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 5)	$V_{(BR)R}$	75	—	V	I_R = 2.5μA
Forward Voltage	V_F	—	0.715 0.855 1.0 1.25	V	I_F = 1.0mA I_F = 10mA I_F = 50mA I_F = 150mA
Reverse Current (Note 5)	I_R	—	2.5 50 30 25	μA μA μA nA	V_R = 75V V_R = 75V, T_J = 150°C V_R = 25V, T_J = 150°C V_R = 20V
Total Capacitance	C_T	—	2.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	4.0	ns	I_F = I_R = 10mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

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

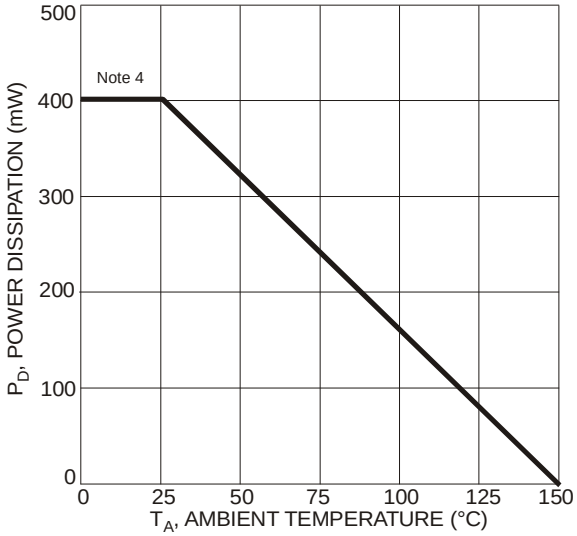


Fig. 1 Power Derating Curve

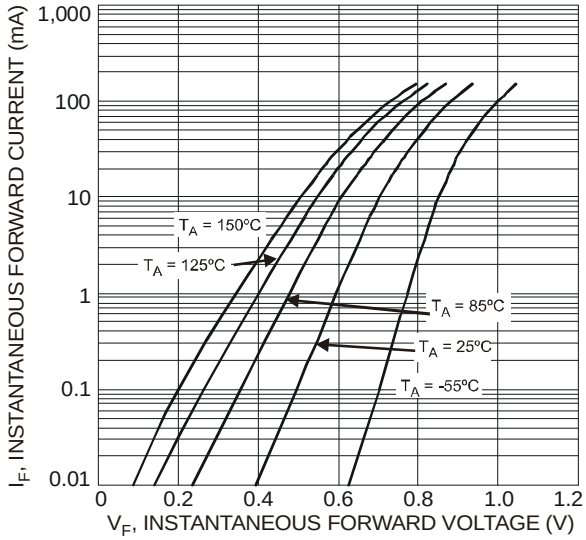


Fig. 2 Typical Forward Characteristics, Per Element

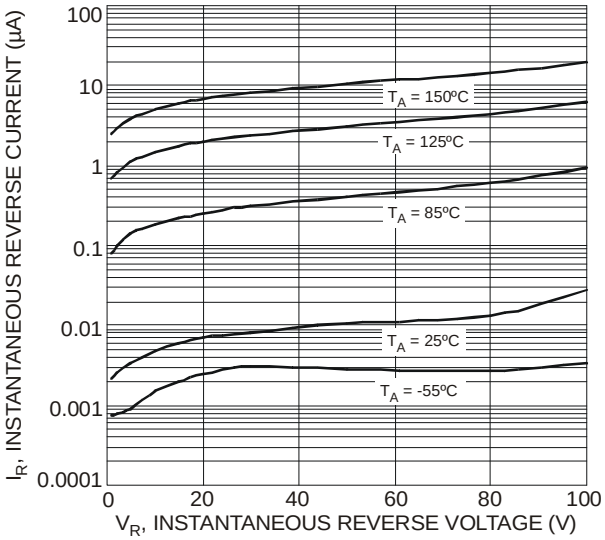


Fig. 3 Typical Reverse Characteristics, Per Element

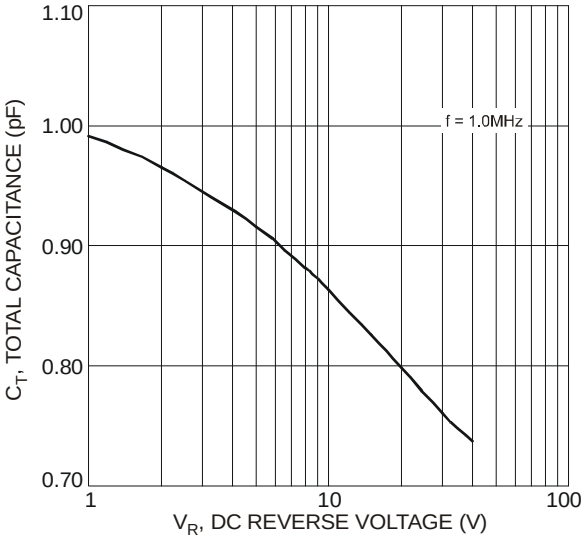
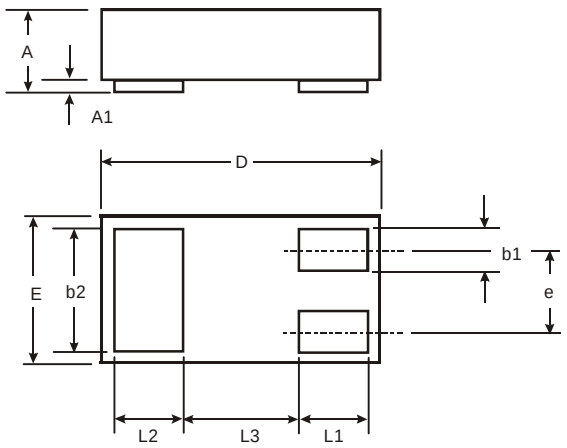


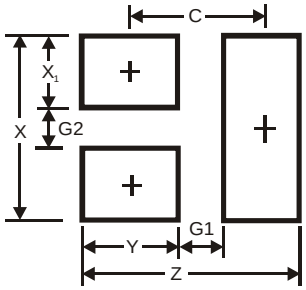
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions



X1-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	0.47	0.53	0.50
A1	0	0.05	0.03
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.1
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
C	0.7