1 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

NEW PRODUCT

Features

- IEC 61000-4-2 (ESD): Air ±15kV, Contact ±8kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance of 0.85pF Typical
- Ultra-low Profile (0.4mm max) Leadless Surface Mount Package Suitable for Compact Portable Electronics
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability

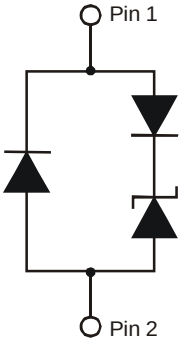
Mechanical Data

- Case: X2-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.001 grams (Approximate)

X2-DFN1006-2



Bottom View



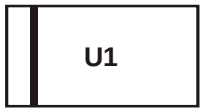
Device Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
D1213A-01LP4-7B	X2-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 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.

Marking Information



U1 = Product Type Marking Code
Line Denotes Pin 1

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Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I_{PP}	5	A	8/20µs, Per Figure 2
ESD Protection – Contact Discharge	$V_{ESD_Contact}$	±8	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V_{ESD_Air}	±15	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package 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°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse working voltage	V_{RWM}	—	—	3.3	V	—
Reverse current (Note 6)	I_R	—	0.1	1.0	µA	$V_R = V_{RWM}$ = 3.3V
Reverse breakdown voltage	V_{BR}	6.0	—	—	V	I_R = 1mA
Forward voltage	V_F	0.6	0.8	0.95	V	I_F = 8mA
Reverse clamping voltage, Positive Transients	V_{CL1}	—	10.0	—	V	I_{PP} = 1A, t_p = 8/20µs
Reverse clamping voltage, Negative Transients	V_{CL2}	—	-1.7	—	V	I_{PP} = -1A, t_p = 8/20µs
Dynamic resistance	R_{DYN}	—	0.9	—	Ω	I_R = 1A, t_p = 8/20µs
Capacitance	C_T	—	0.85	1.2	pF	V_R = 1.65V, f = 1MHz

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

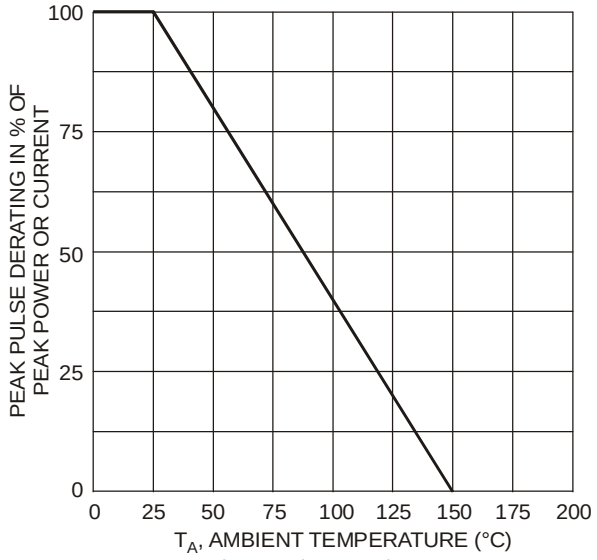

Fig. 1 Pulse Derating Curve

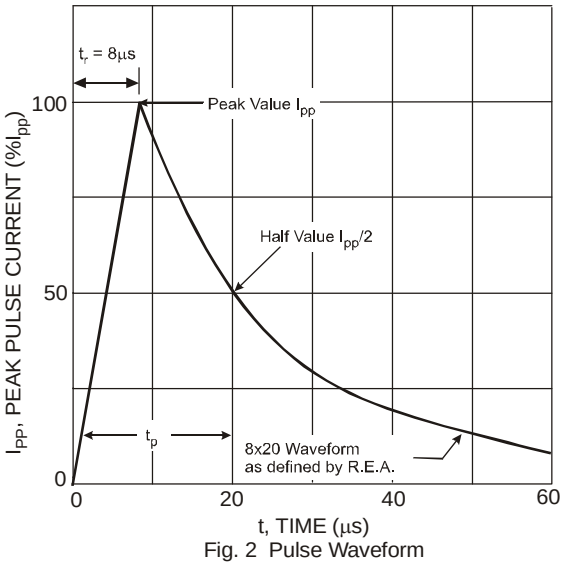

Fig. 2 Pulse Waveform

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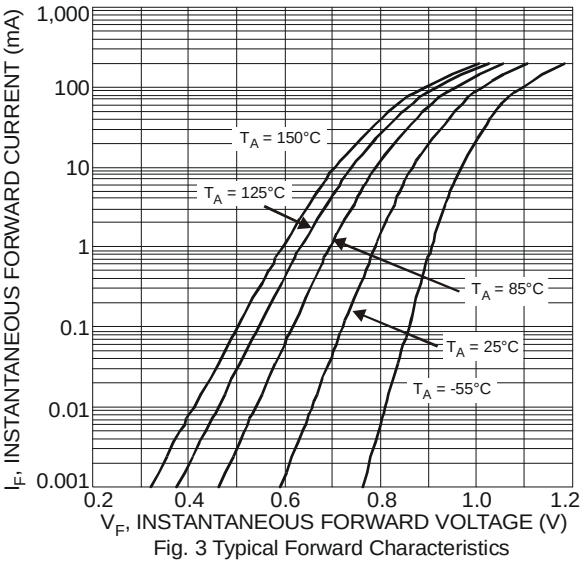


Fig. 3 Typical Forward Characteristics

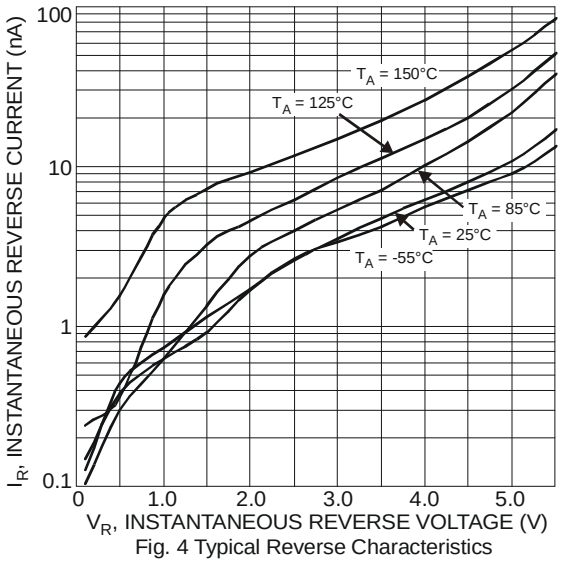


Fig. 4 Typical Reverse Characteristics

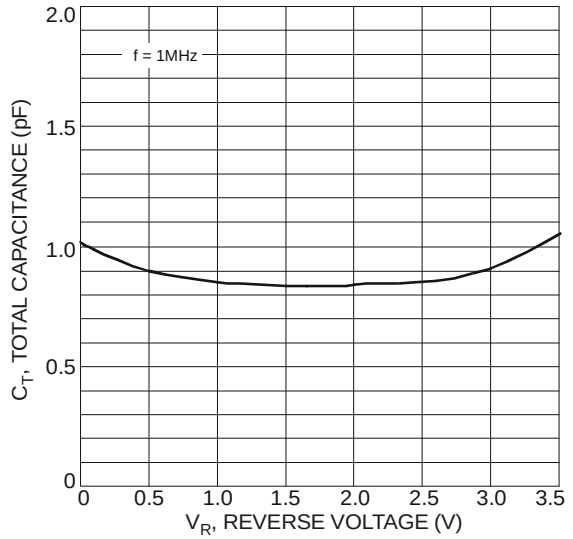
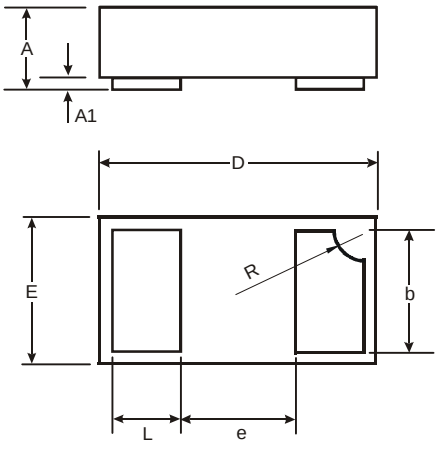


Fig. 5 Typical Total Capacitance vs. Reverse Voltage

Package Outline Dimensions



X2-DFN1006-2			
Dim	**Min**	**Max**	**Typ**
A	0.34	0.4	0.37
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			

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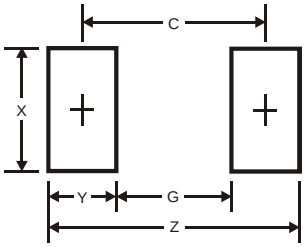
Suggested Pad Layout



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

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