

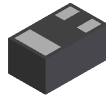
## Features

- IEC 61000-4-2 (ESD): Level 4, Air –  $\pm 16$ kV, Contact –  $\pm 8$ kV
- MIL STD 883C (ESD) HBM – 8kV
- Low Leakage <  $1\mu\text{A}$  @ 5.25V
- Low Capacitance (40pF Typical)
- Surface-Mount Package Ideally Suited for Automated Insertion
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

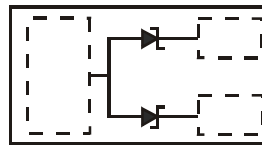
## Mechanical Data

- Package: X1-DFN1006-3
- Package Material: Molded Plastic, "Green" Molding Compound. 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<sup>e4</sup>
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-3



Bottom View


 Top View  
Internal Schematic

## Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DESD6V8DLPA-7	X1-DFN1006-3	3000	Tape & Reel
DESD6V8DLPA-7B	X1-DFN1006-3	10,000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information

<b>DESD6V8DLPA-7</b>	 Top View Bar Denotes Cathode Side   $\bar{8}Z$ = Product Type Marking Code
<b>DESD6V8DLPA-7B</b>	 Top View Bar Denotes Cathode Side   $\bar{8}Z$ = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit	Conditions
Forward Voltage	V <sub>F</sub>	1.25	V	I <sub>F</sub> = 10mA
ESD Protection – Contact Discharge	V <sub>ESD_CONTACT</sub>	±8	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V <sub>ESD_AIR</sub>	±16	kV	Standard IEC 61000-4-2

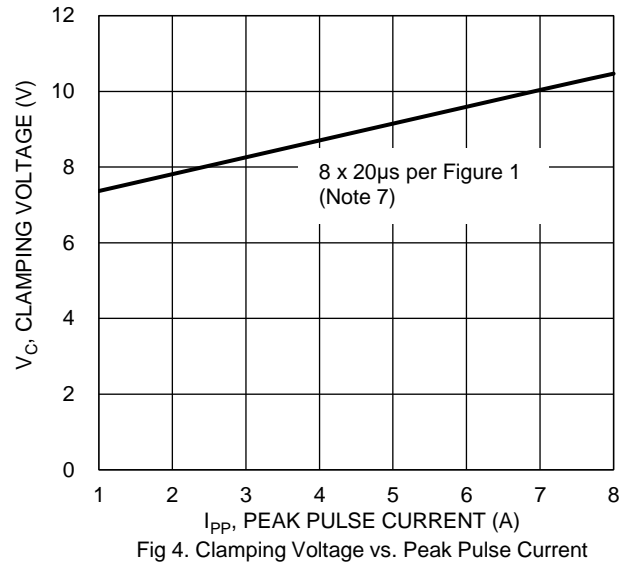
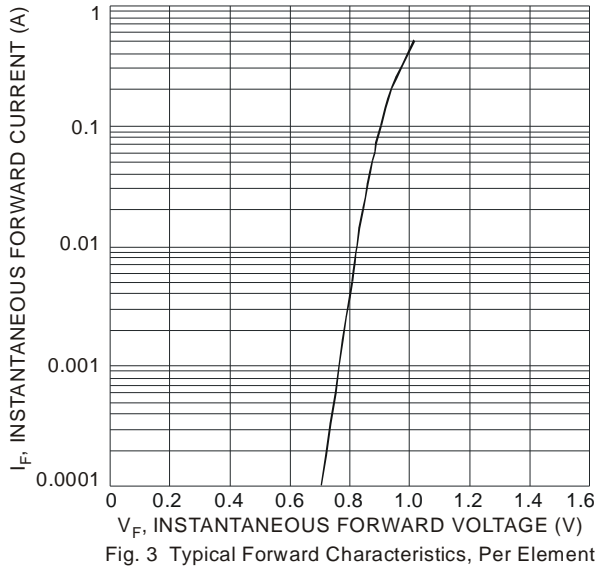
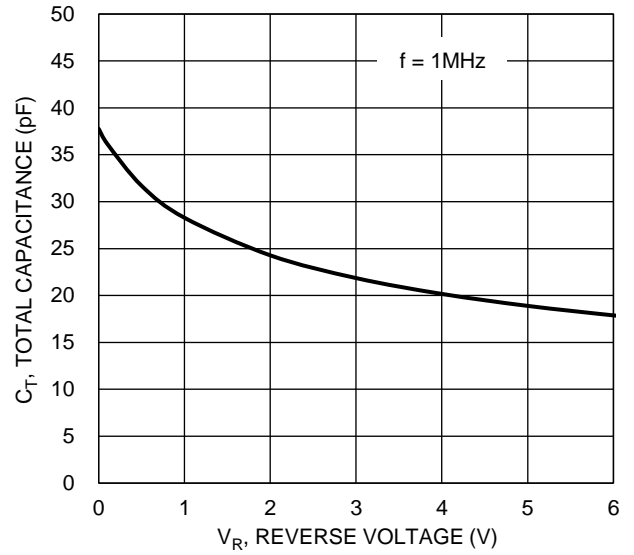
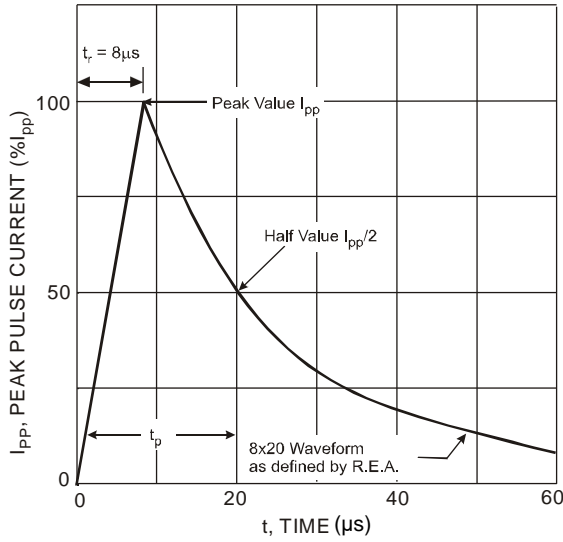
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Peak Pulse Power (t <sub>P</sub> = 8 x 20µs) (Note 5) T <sub>A</sub> = +25°C	P <sub>PK</sub>	70	W
Power Dissipation (Note 5)	P <sub>D</sub>	385	mW
Thermal Resistance Junction to Ambient (Note 5) T <sub>A</sub> = +25°C	R <sub>θJA</sub>	325	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

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

Reverse Standoff Voltage	Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub>			Test Current I <sub>T</sub> (mA)	Maximum Reverse Leakage @ V <sub>RWM</sub> (Note 6) I <sub>R</sub> (µA)	Maximum Dynamic Impedance f = 1kHz			Typical Total Capacitance C <sub>T</sub> V <sub>R</sub> = 0V, f = 1MHz (pF)
	V <sub>RWM</sub> (V)	Min (V)	Typ (V)			Max (V)	Z <sub>ZT</sub> @ I <sub>T</sub> (Ω)	Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω)	
5.25	6.4	6.8	7.2	5.0	1.0	30	300	0.5	40

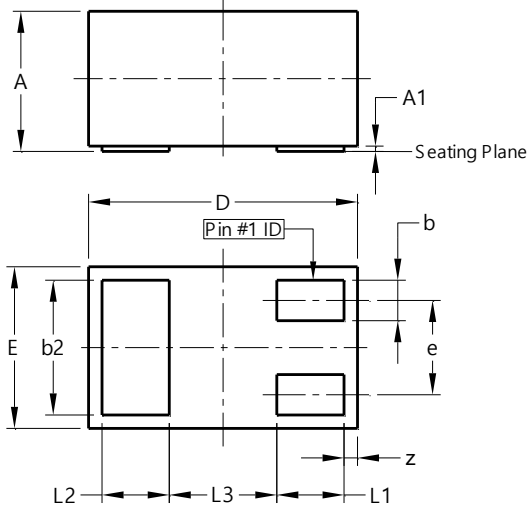
- Notes:
5. Device mounted on FR-5 PC board of size 1.0 × 0.75 × 0.62 inches.
  6. Short duration pulse test used to minimize self-heating effect.
  7. Clamping voltage value is based on an 8 × 20µs peak-pulse current (I<sub>PP</sub>) waveform.



**Package Outline Dimensions**

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

**X1-DFN1006-3**

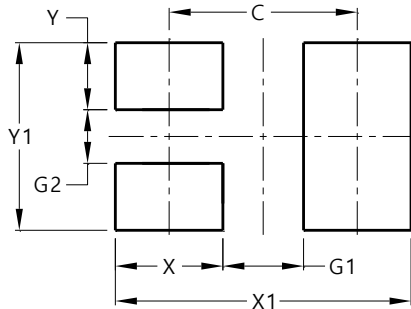


X1-DFN1006-3			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	-	-	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

**Suggested Pad Layout**

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

**X1-DFN1006-3**



Dimensions	Value (in mm)
C	0.70
G1	0.30
G2	0.20
X	0.40
X1	1.10
Y	0.25
Y1	0.70

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