



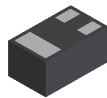
## Features

- IEC 61000-4-2 (ESD): Level 4, Air – 16kV, Contact – 8kV
- MIL STD 883C (ESD) HBM – 16kV
- Low Leakage < 1µA @ 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)**

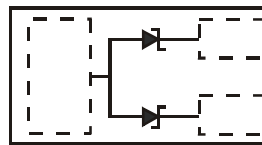
## Mechanical Data

- 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
- Terminals: Finish — NiPdAu over Copper Leadframe.  
Solderable per MIL-STD-202, Method 208 @4
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-3



Bottom View



Top View  
Internal Schematic

## Ordering Information (Note 4)

Part Number	Case	Packaging
DESD6V8DLP-7	X1- DFN1006-3	3,000/Tape & Reel
DESD6V8DLP-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) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](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

<b>DESD6V8DLP-7</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Top View Dot Denotes Cathode Side</p> </div> <div style="text-align: center;"> <p>From date code 1527 (YYWW), this changes to:</p> <p>Top View Bar Denotes Cathode Side</p> </div> </div>
<b>DESD6V8DLP-7B</b>	<div style="text-align: center;"> <p>Top View Bar Denotes Cathode Side</p> </div> <p style="text-align: right;">9Z = Product Type Marking Code</p>

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

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	1.25	V

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Peak Pulse Power (t <sub>p</sub> = 8x20μs) (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)	Max. 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 x 0.75 x 0.62 inches.
  6. Short duration pulse test used to minimize self-heating effect.
  7. Clamping voltage value is based on an 8 x 20μs peak pulse current (I<sub>pp</sub>) waveform.

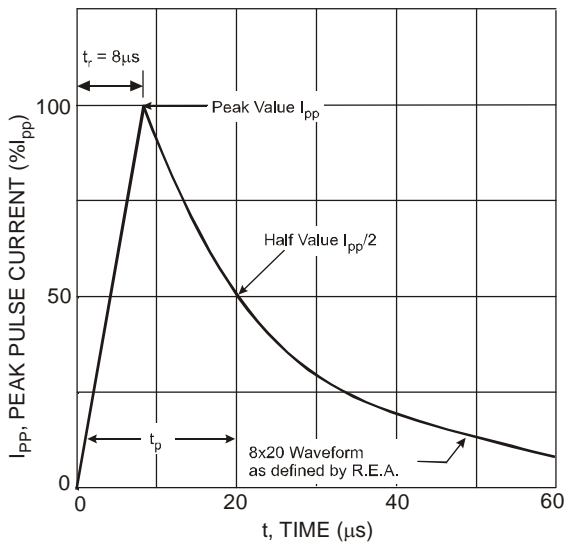


Fig. 1 Pulse Waveform

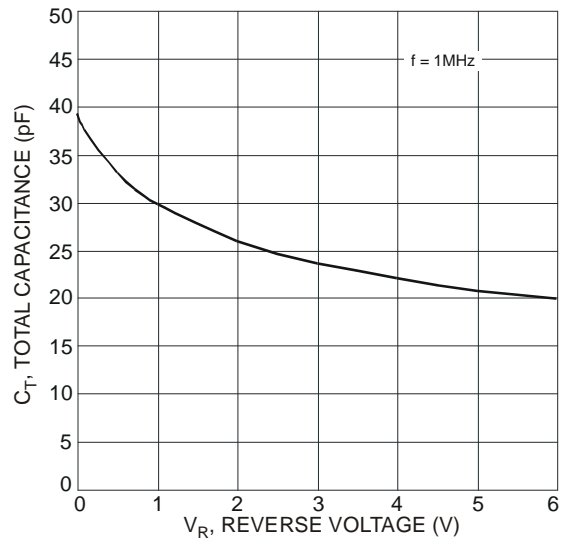


Fig. 2 Typical Total Capacitance vs. Reverse Voltage

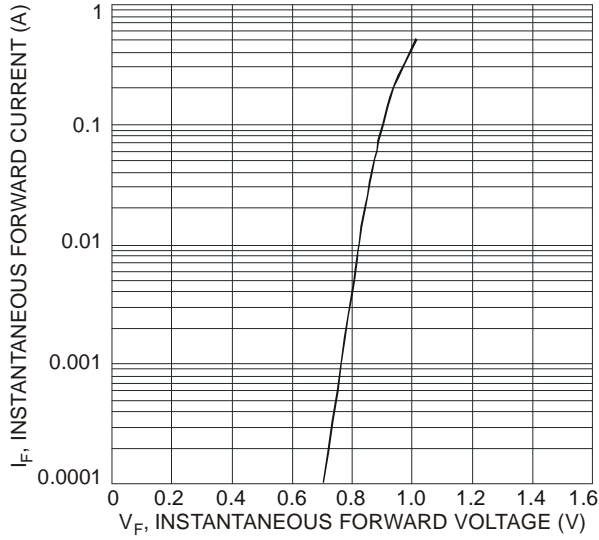


Fig. 3 Typical Forward Characteristics, Per Element

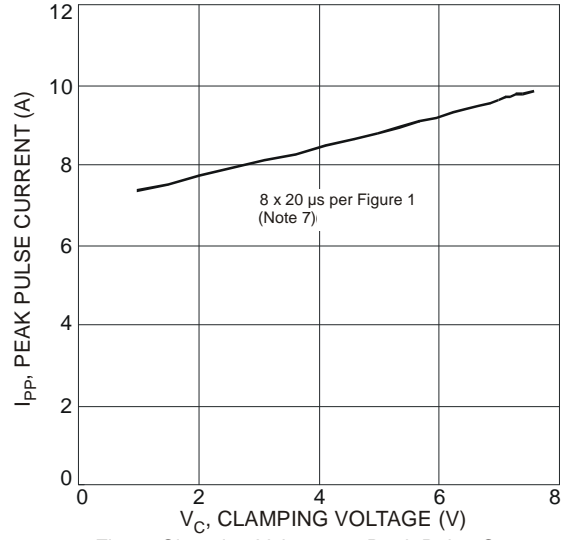
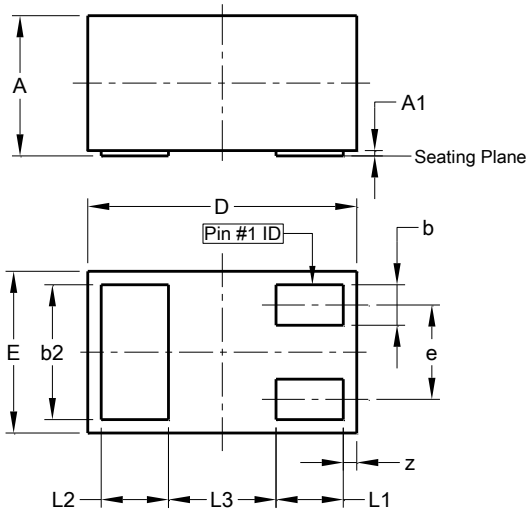


Fig. 4 Clamping Voltage vs. Peak Pulse Current

**Package Outline Dimensions**

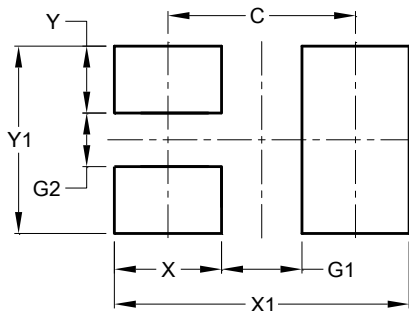
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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
<b>All Dimensions in mm</b>			

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

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