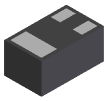
Features

- IEC 61000-4-2 (ESD): Level 4, Air – ±16kV, Contact – ±8kV
- MIL STD 883C (ESD) HBM – 8kV
- 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)**
- **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 or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

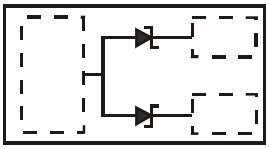
Mechanical Data

- 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 208e4
- Weight: 0.0009 grams (Approximate)

X1-DFN1006-3



Bottom View



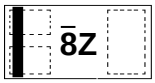
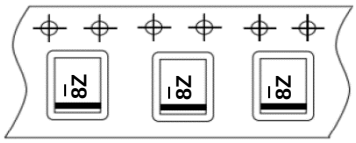
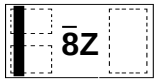
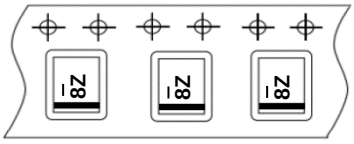
Top View
Internal Schematic

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

DESD6V8DLPA-7	 Top View Bar Denotes Cathode Side 	$\overline{8}$Z = Product Type Marking Code
DESD6V8DLPA-7B	 Top View Bar Denotes Cathode Side 	$\overline{8}$Z = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit	Conditions
Forward Voltage	V_F	1.25	V	I_F = 10mA
ESD Protection – Contact Discharge	$V_{ESD\_CONTACT}$	±8	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V_{ESD_AIR}	±16	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Peak Pulse Power (t_P = 8 x 20µs) (Note 5) T_A = +25°C	P_{PK}	70	W
Power Dissipation (Note 5)	P_D	385	mW
Thermal Resistance Junction to Ambient (Note 5) T_A = +25°C	$R_{\theta JA}$	325	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T			Test Current	Maximum Reverse Leakage @ V_{RWM} (Note 6)	Maximum Dynamic Impedance f = 1kHz			Typical Total Capacitance C_T V_R = 0V, f = 1MHz
V_{RWM} (V)	Min (V)	Typ (V)	Max (V)	I_T (mA)	I_R (µA)	Z_{ZT} @ I_T (Ω)	Z_{ZK} @ I_{ZK} (Ω)	I_{ZK} (mA)	(pF)
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_{PP}) waveform.

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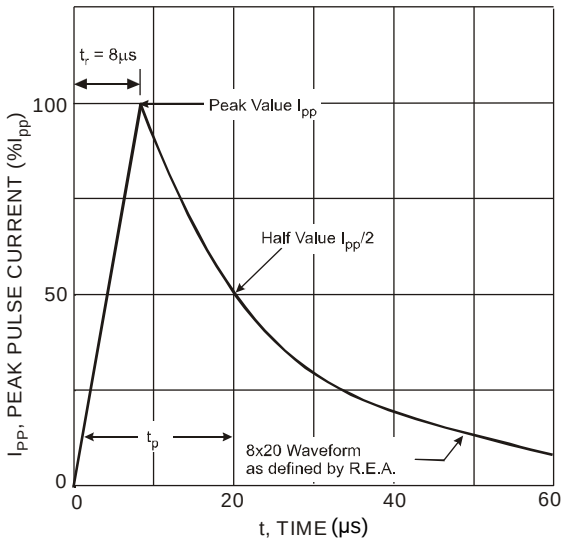

Fig. 1 Pulse Waveform

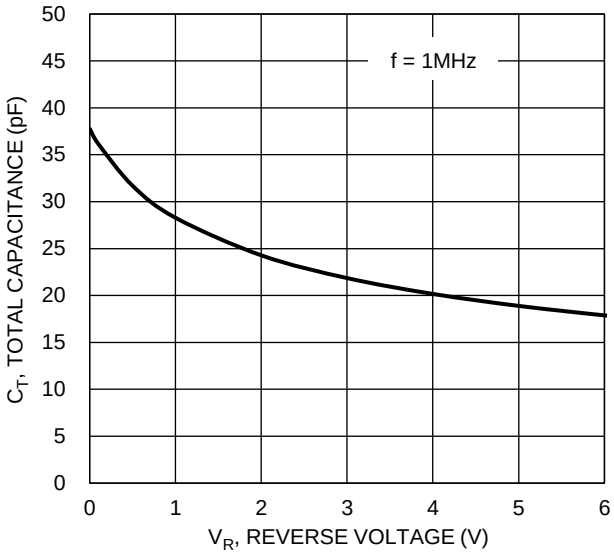

Fig 2. Typical Total Capacitance vs. Reverse Voltage

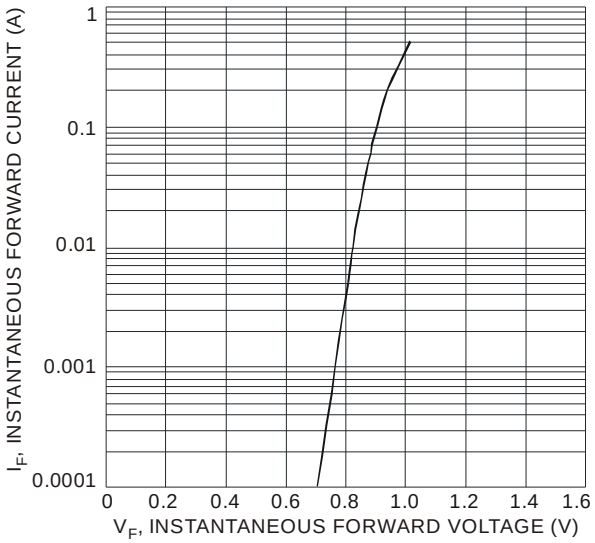

Fig. 3 Typical Forward Characteristics, Per Element

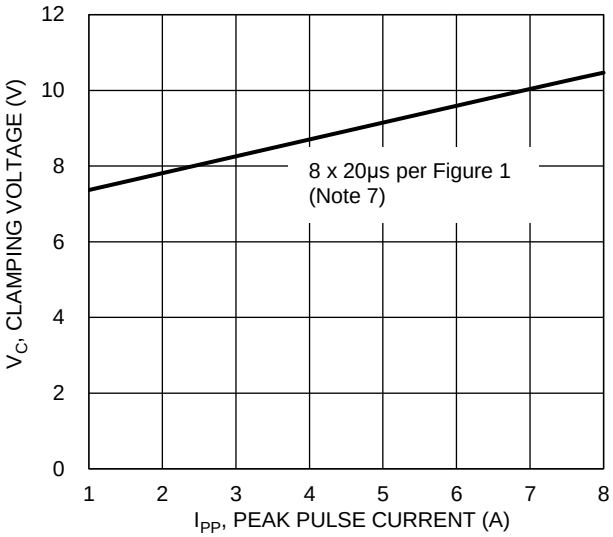

Fig 4. Clamping Voltage vs. Peak Pulse Current

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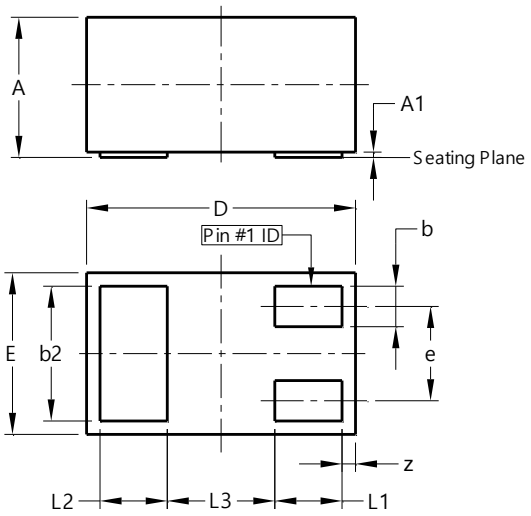
Package Outline Dimensions

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

X1-DFN1006-3

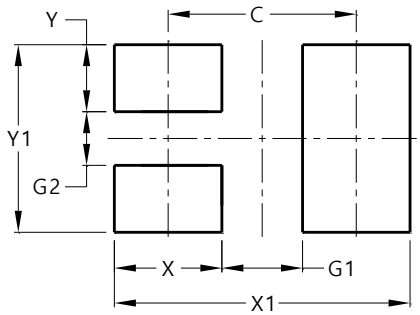


X1-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	-	-	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

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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