

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)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, 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/>**

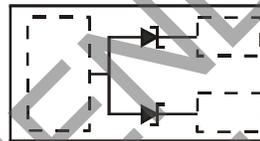
Mechanical Data

- 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	3000/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) & 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 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

DESD6V8DLP-7	<p>From date code 1527 (YYWW), this changes to:</p> <p>Top View Dot Denotes Anode Side</p> <p>Top View Bar Denotes Cathode Side</p>
DESD6V8DLP-7B	<p>Top View Bar Denotes Cathode Side</p> <p>9Z = Product Type Marking Code</p>

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

Characteristic	Symbol	Value	Unit
Forward Voltage @ I _F = 10mA	V _F	1.25	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Peak Pulse Power (t _P = 8x20μs) (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 _{θJA}	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 I _T (mA)	Maximum Reverse Leakage @ V _{RWM} (Note 6) I _R (μA)	Maximum Dynamic Impedance f = 1kHz			Typical Total Capacitance C _T V _R = 0V, f = 1MHz (pF)
	Min (V)	Typ (V)	Max (V)			Z _{ZT} @ I _T (Ω)	Z _{ZK} @ I _{ZK} (Ω)	I _{ZK} (mA)	
V _{RWM} (V)	6.4	6.8	7.2	5.0	1.0	30	300	0.5	40

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

NOT RECOMMENDED FOR NEW DESIGN

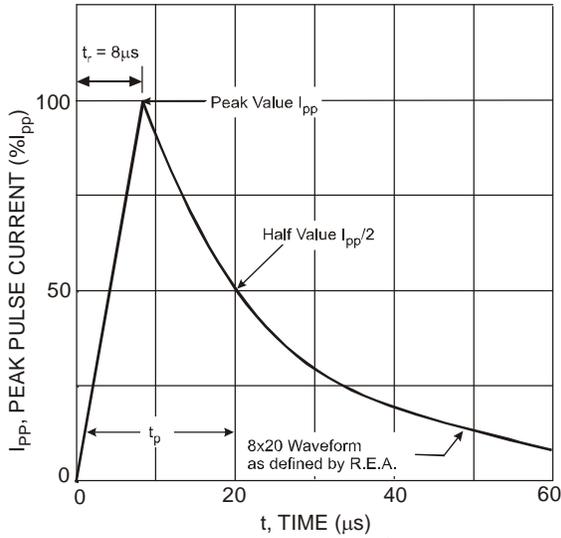


Fig. 1 Pulse Waveform

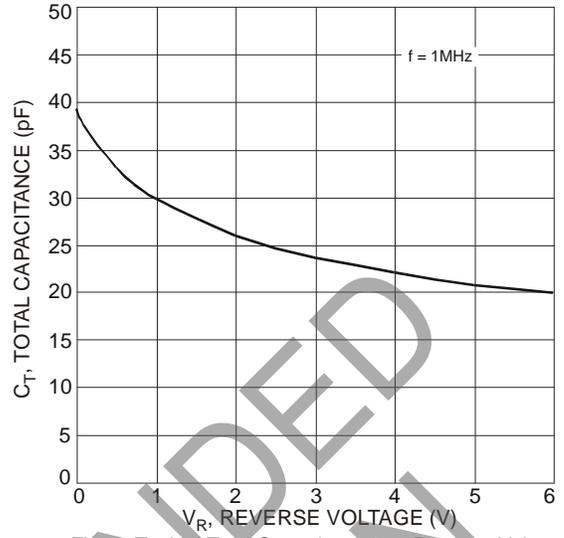


Fig. 2 Typical Total Capacitance vs. Reverse Voltage

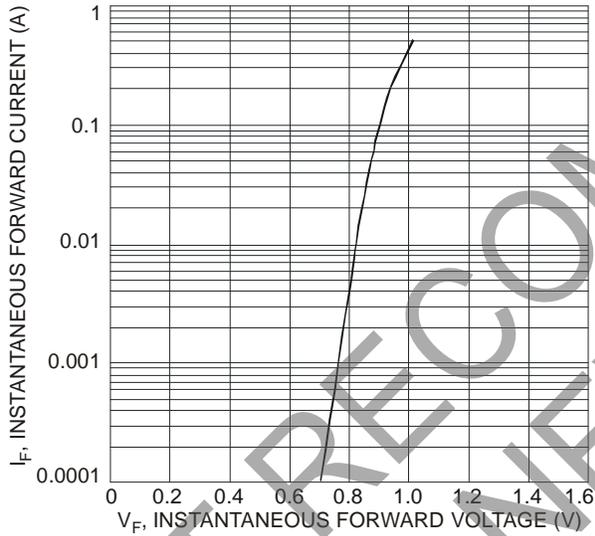


Fig. 3 Typical Forward Characteristics, Per Element

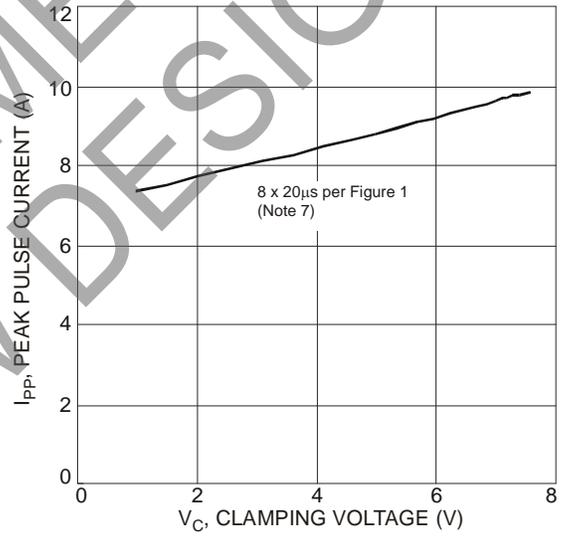
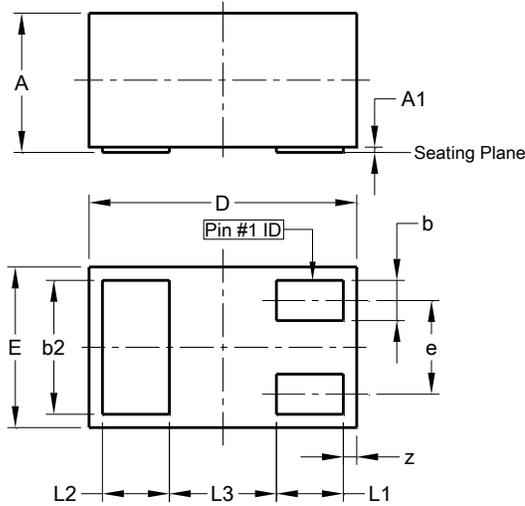


Fig. 4 Clamping Voltage vs. Peak Pulse Current

Package Outline Dimensions

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

X1-DFN1006-3

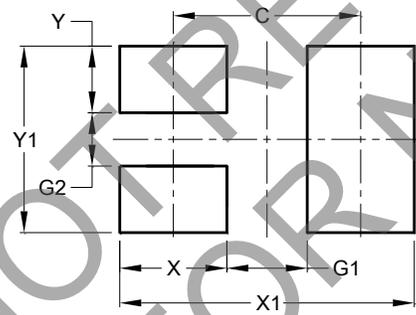


X1-DFN1006-3			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	-	-	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

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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