

Transient Voltage Suppressors for ESD Protection

ESDXXV88D-CDN

Description

The ESDXXV88D-CDN is ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

Feature

- ◆ 250 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects one birectional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages :3.3V - 36V
- ◆ Low leakage current
- ◆ IEC61000-4-2(ESD)±30kV(air),±30kV(contact):3.3V-15V
- ◆ IEC61000-4-2(ESD)±25kV(air),±15kV(contact):18V-36V
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)

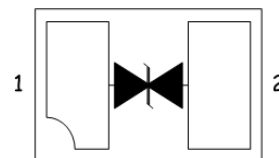
Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Pagers

DFN-1006DN



Functional Diagram



Mechanical Data

- ◆ DFN1006DN (1.0x0.6x0.5mm) Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 0.5 Milligrams (Approximate)
- ◆ Quantity Per Reel : 10,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (tp=8/20μs waveform)	250	W
T_J	Operating Junction Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_L	Soldering Temperature, t max = 10s	260	°C

Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V _{RWM} (V) (Max.)	V _B (V) (Min.)	I _T (mA)	V _C @1A (Max.)	V _C		I _R (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD3.3V88D-CDN	D3	3.3	4.5	1	-	14.0	15.0	30	95
ESD05V88D-CDN	D5	5.0	6.0	1	-	18.0	14.0	1	60

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ESD08V88D-CDN	D8	8.0	8.5	1	-	22.0	10.0	1	45
ESD12V88D-CDN	DD	12.0	13.3	1	-	30.0	7.0	1	27
ESD15V88D-CDN	DE	15.0	16.7	1	-	37.0	6.0	1	25
ESD18V88D-CDN	DF	18.0	19.5	1	-	47.0	4.0	1	25
ESD24V88D-CDN	DH	24.0	26.7	1	-	55.0	3.0	1	24
ESD36V88D-CDN	DN	36.0	40.0	1	-	75.0	2.0	1	20

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

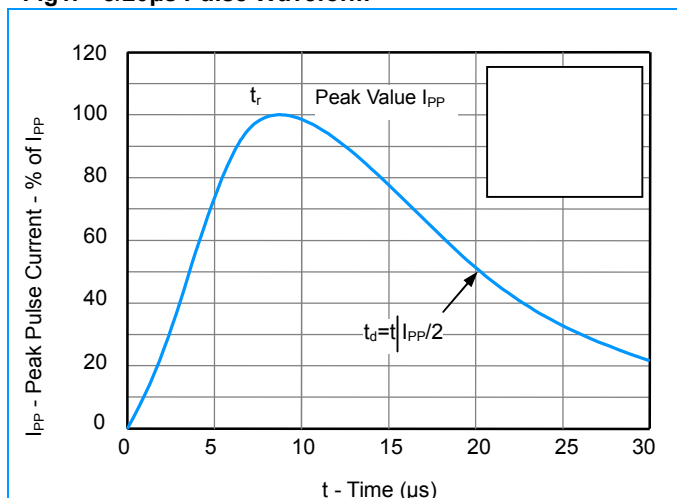


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

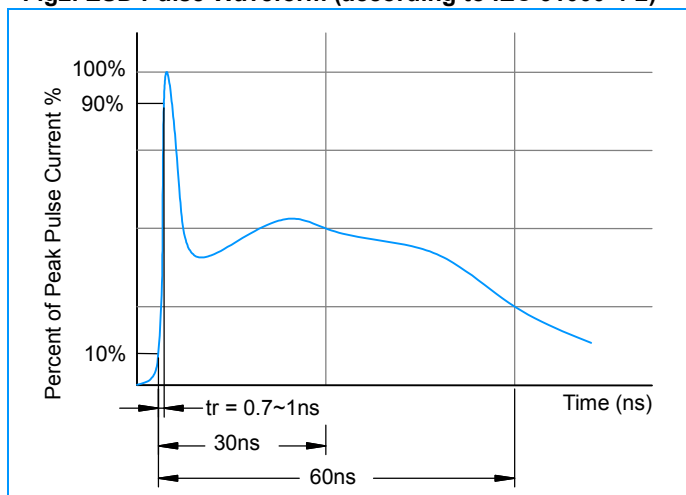
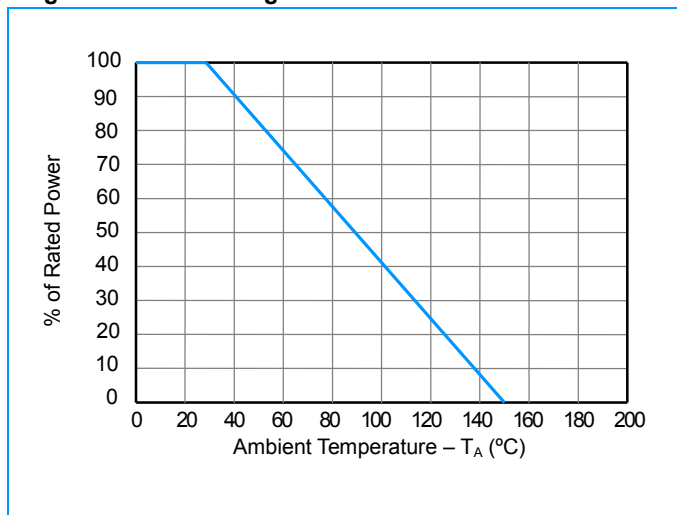


Fig3. Power Derating Curve



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Characteristic Curves

Fig4. ESD Clamping (+8KV Contac per IEC61000-4-2)

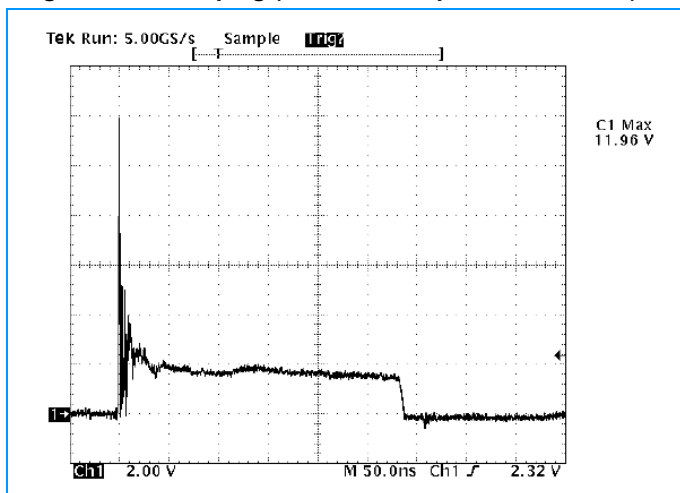
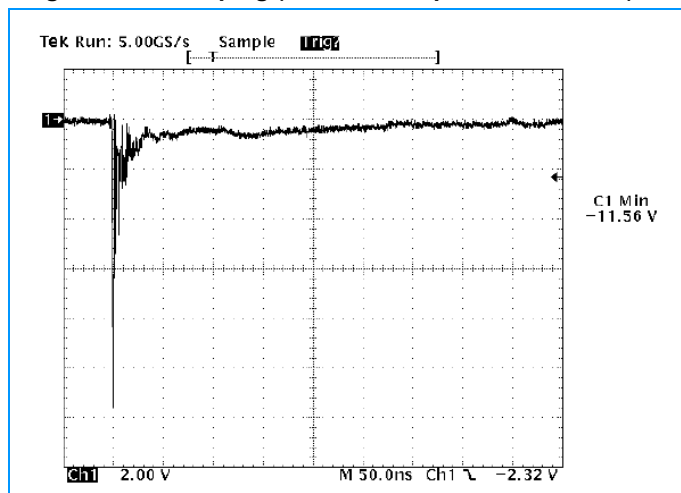
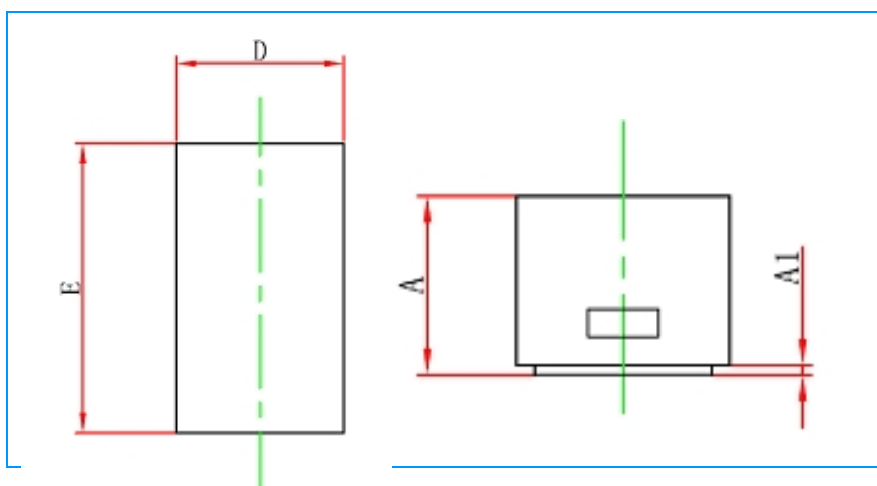


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)



DFN1006 Package Outline & Dimensions



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.500	0.016	0.020
A1	0.000	0.050	0.000	0.002
D	0.550	0.650	0.022	0.026
E	0.950	1.0650	0.037	0.041
b	0.400	0.600	0.016	0.024
e	0.650 TYP		0.026 TYP	
L	0.150	0.350	0.006	0.014
L1	0.050 REF		0.002 REF	

