

Transient Voltage Suppressors for ESD Protection

ESDXXV88D-2A Series

Description

The ESDXXV88D-2A is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, ultra-low capacitance values, it is very suitable for signal port and board space speed transmission in very small places, such as Ethernet, mobile phones, MP3 players, digital cameras and other portable.

Feature

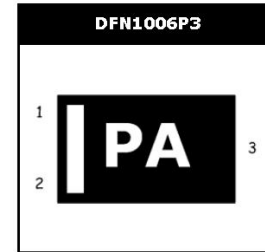
- ◆ 20 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects one I/O line (Unidirection)
- ◆ Low clamping voltage
- ◆ Working voltages: 3.3V, 5V and 12V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50 ns)

Applications

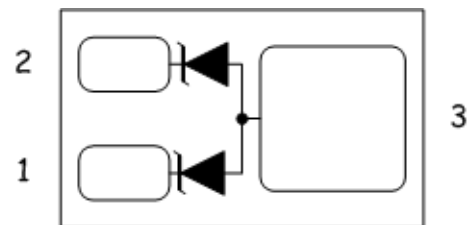
- ◆ Cell Phone Handsets and Accessories
- ◆ High Speed I/O Lines
- ◆ Notebooks & Handhelds
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ USB Interface

Mechanical Characteristics

Symbol	Parameter	Value	Units
P _{pp}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	20	Watts
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature	260	°C



Functional Diagram



Mechanical Data

- ◆ DFN1006P3 (1.0x0.6mm) Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 0.6 Milligrams (Approximate)
- ◆ Quantity Per Reel : 5,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking Code	Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR}	Test Current I_T (mA)	V_C @1A (Max.)	V_C		Maximum Reverse Leakage I_R @ V_{RWM} (uA)	Maximum Junction Capacitance @0 V (pF)
						(Max.)	(@A)		
ESD3.3V88D-2A	PA	3.3	4.5	1.0	8.5	12	2	5	9
ESD05V88D-2A	PB	5.0	6.0	1.0	10	15	2	0.5	8
ESD12V88D-2A	PC	12	13.3	1.0	17	19	2	0.5	6

Characteristic Curves

Fig1. 8/20µs Pulse Waveform

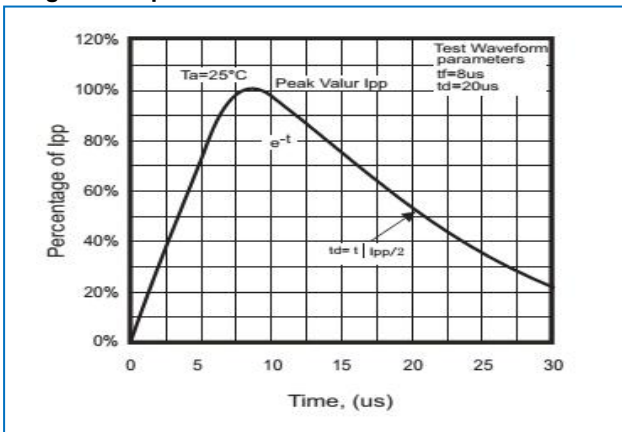


Fig2.ESD Pulse Waveform (according to IEC 61000-4-2)

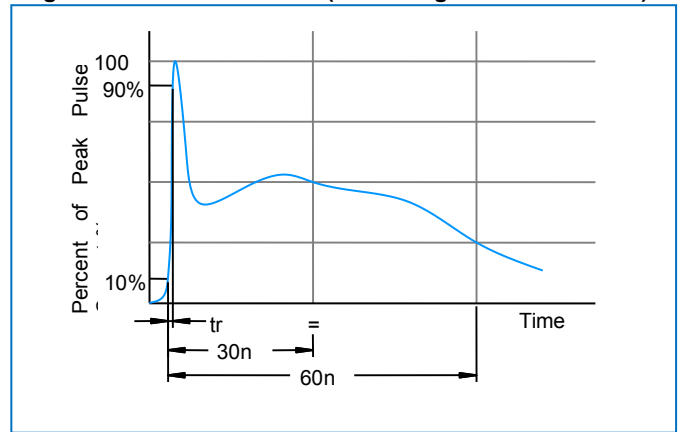


Fig3. ESD Clamping Voltage Screenshot Positive 8 KV contact per IEC 61000-4-2

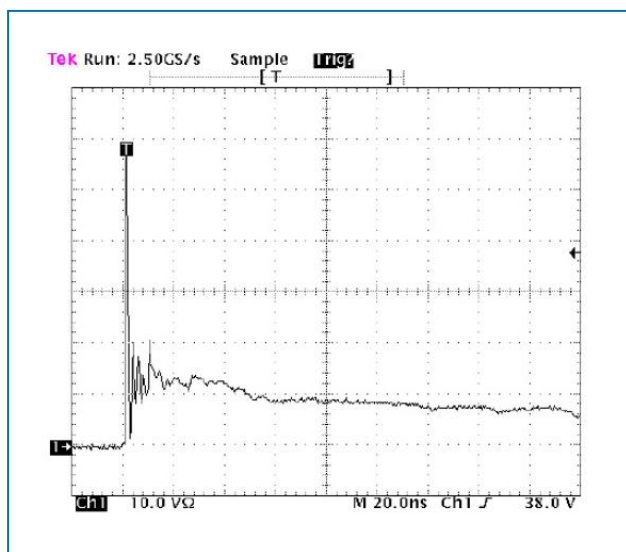
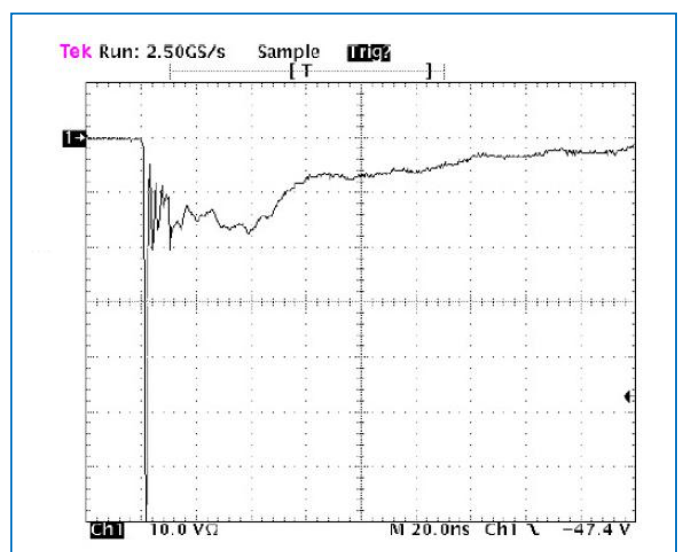


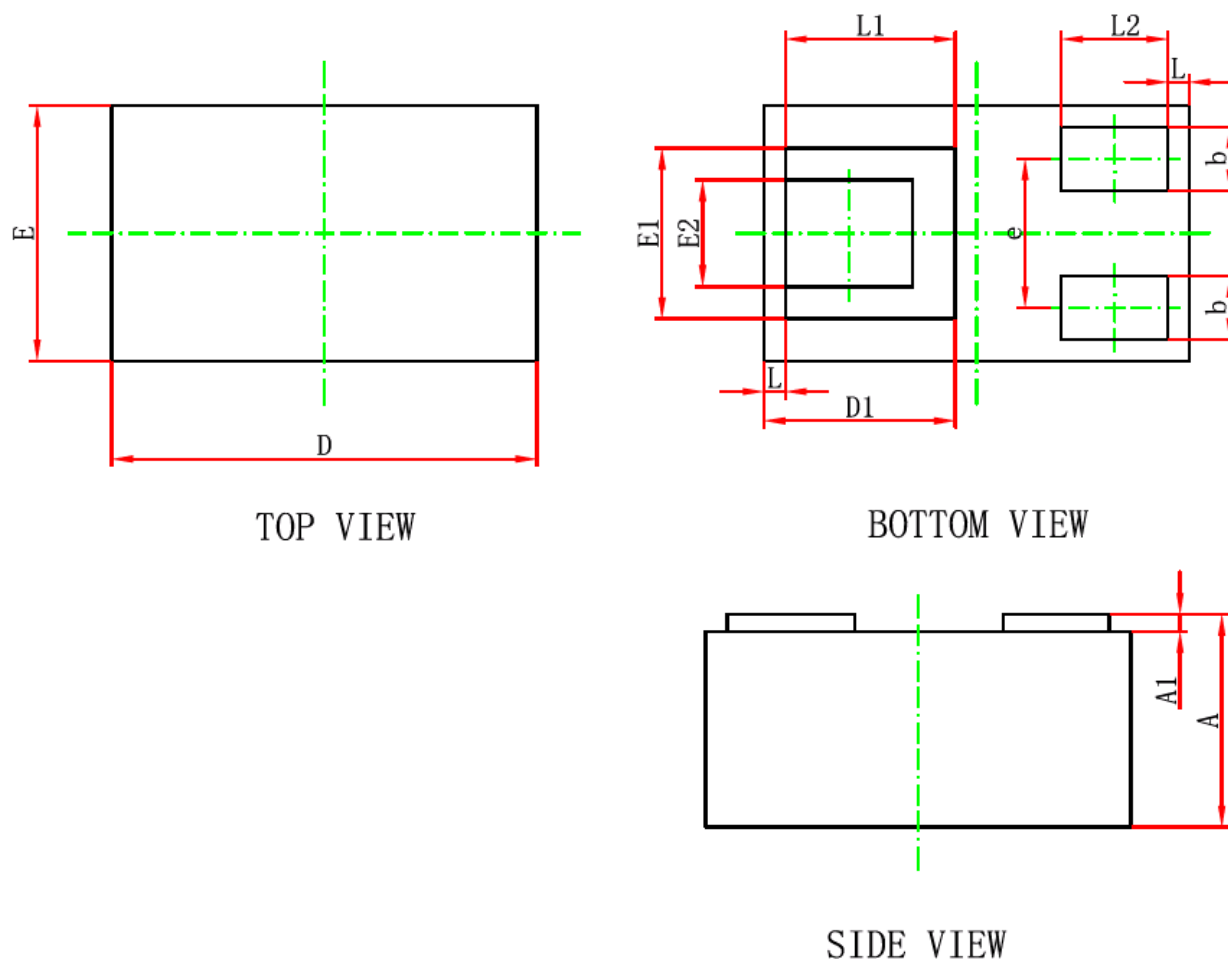
Fig4. ESD Clamping Voltage Screenshot Negative 8 KV contact per IEC 61000-4-2



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DFN1006P3 Package Outline & Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.350/0.450	0.450/0.550	0.014/0.018	0.018/0.022
A1	0.010	0.090	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450 REF.		0.017 REF.	
E1	0.400 REF.		0.016 REF.	
E2	0.200	0.300	0.008	0.012
b	0.100	0.200	0.004	0.008
e	0.300	0.400	0.012	0.016
L	0.000	0.050	0.000	0.002
L1	0.250	0.350	0.010	0.014
L2	0.200	0.300	0.008	0.012