

# Transient Voltage Suppressors for ESD Protection

## ESDXXV88D-C

### Description

The ESDXXV88D-C 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

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

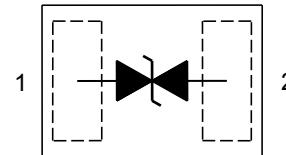
### Applications

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

### DFN-1006



### Functional Diagram



### Mechanical Data

- ◆ DFN1006 (1.0x0.6x0.5mm) Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 0.5 Milligrams (Approximate)
- ◆ Quantity Per Reel : 5,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

### Mechanical Characteristics

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (tp=8/20μs waveform)	100	W
I <sub>PP</sub>	Peak Pulse Current (tp=8/20μs waveform)	2.5	A
T <sub>J</sub>	Operating Junction Temperature Range	-55 to +125	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>L</sub>	Soldering Temperature, t max = 10s	260	°C
	IEC61000-4-2 (ESD)		
	Air Discharge	15	KV
	Contact Discharge	8	

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V <sub>RWM</sub> (V) (Max.)	V <sub>B</sub> (V) (Min.)	I <sub>T</sub> (mA)	V <sub>C</sub> @1A (Max.)	V <sub>C</sub>		I <sub>R</sub> (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD3.3V88D-C	T	3.3	3.5	1	5.5	15	7	1	6
ESD05V88D-C	M	5	6	1	12.5	20	2	1	10

### Characteristic Curves

Fig1. 8/20μs Pulse Waveform

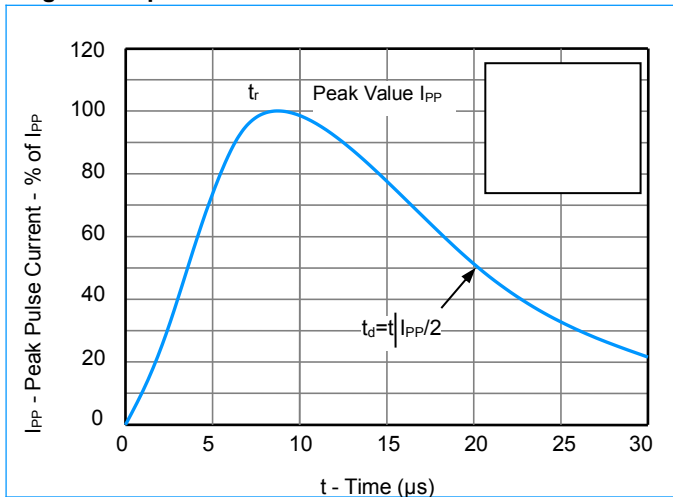


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

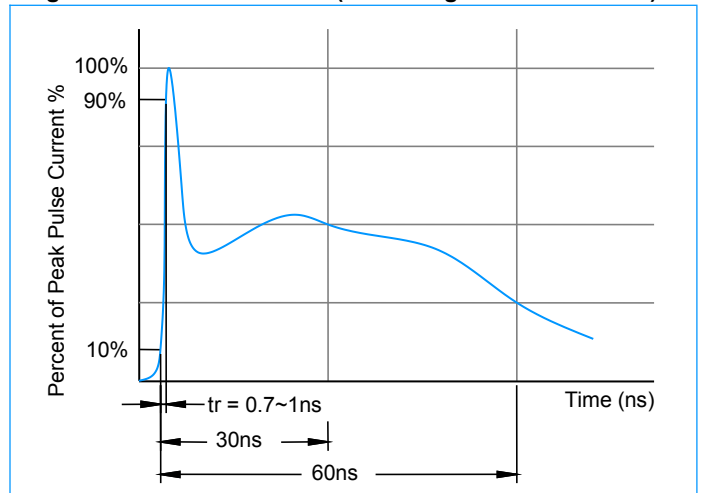
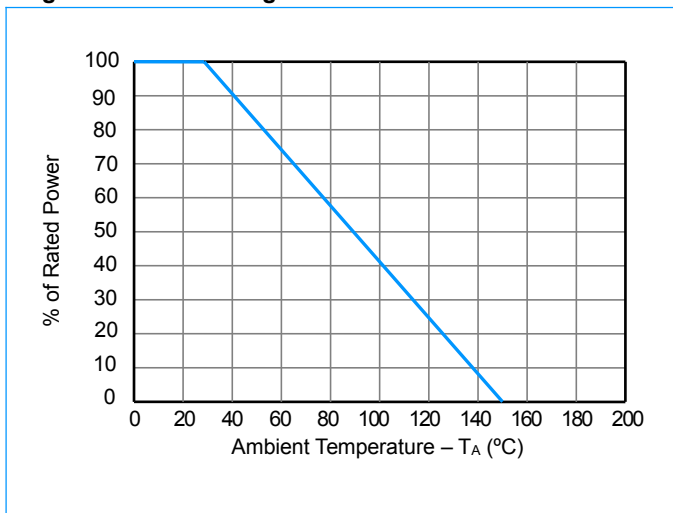


Fig3. Power Derating Curve



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## ESDXXV88D-C

### Characteristic Curves

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

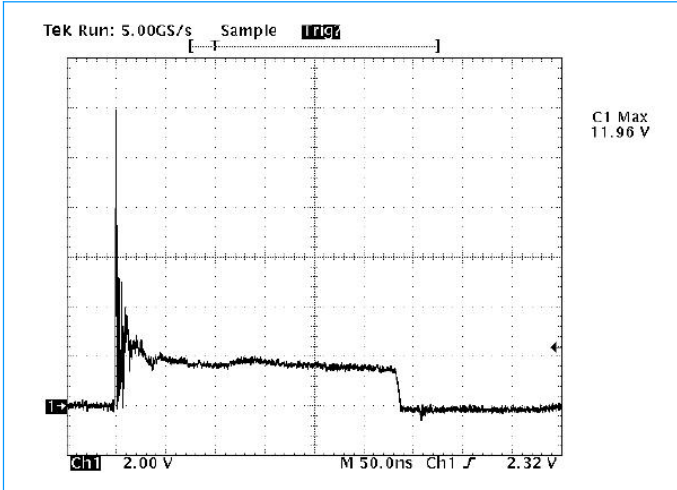
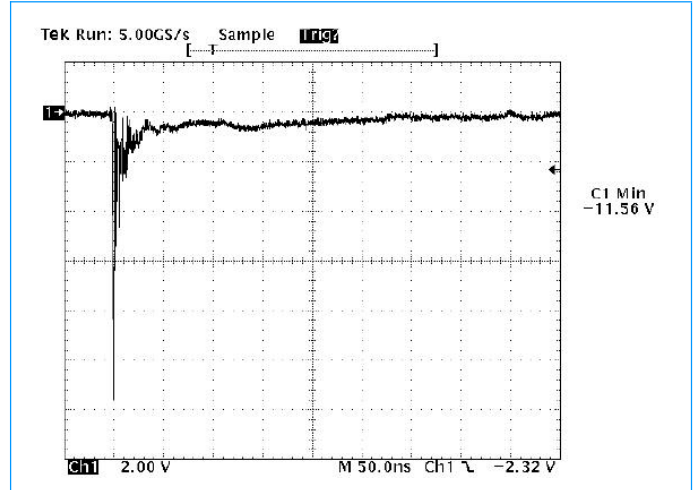
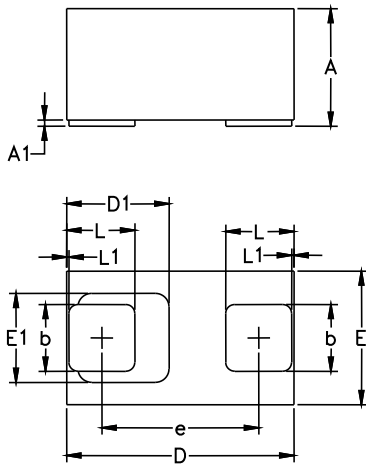


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)

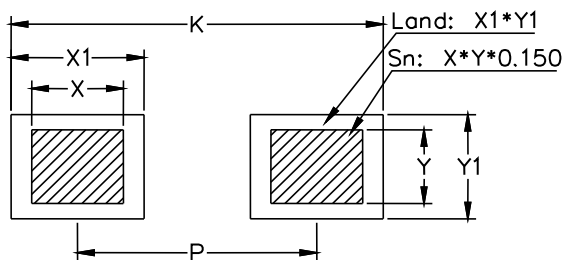


### DFN1006 Package Outline & Dimensions



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.070	0.000	0.003
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450 REF		0.018 REF	
E1	0.400 REF		0.016 REF	
b	0.275	0.325	0.011	0.013
e	0.675	0.725	0.027	0.029
L	0.275	0.325	0.011	0.013
L1	0.010 REF		0.000 REF	

### Soldering Footprint



Symbol	Inches	Millimeters
K	0.055±0.002	1.4±0.05
P	0.035±0.001	0.9±0.025
X	0.014±0.001	0.354±0.025
Y	0.011±0.001	0.283±0.025
X1	0.020±0.001	0.5±0.025
Y1	0.016±0.001	0.4±0.025