

Transient Voltage Suppressors for ESD Protection

ESD3.3V88D-LA

Description

The ESD3.3V88D-LA is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, 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 low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications.

Feature

- ◆ Ultra Low Capacitance 0.5 pF
- ◆ Low Clamping Voltage
- ◆ Small Body Outline Dimensions:
0.039" x 0.024" (1.00 mm x 0.60 mm)
- ◆ Low Body Height: 0.020" (0.5 mm)
- ◆ Stand-off Voltage: 3.3 V
- ◆ Low leakage current
- ◆ Response Time is Typically < 1.0 ns
- ◆ IEC61000-4-2 Level 4 ESD Protection
- ◆ This is a Pb-Free Device

Applications

- ◆ Cellular Handsets and Accessories
- ◆ High Speed I/O Lines
- ◆ USB Ports
- ◆ Serial ATA
- ◆ PCI Express
- ◆ Servers, Notebook, and Desktop PC
- ◆ Display Ports

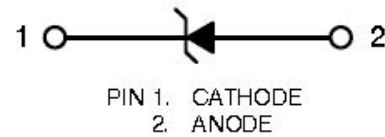
Mechanical Characteristics

Symbol	Parameter	Value	Units
T _J	Operating Junction Temperature Range	-55 to +125	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature, T max = 10s	260	°C

SOD-882



Functional Diagram



Mechanical Data

- ◆ JEDEC SOD-882 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Quantity Per Reel : 1,0000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free
- ◆ Device Marking: P

Transient Voltage Suppressors for ESD Protection

ESD3.3V88D-LA

Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	4.8	--	--	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3V ; T=25^{\circ}C$	--	--	1.0	μA
Junction capacitance	C_J	$V_R=0V , f=1MHz ;$	--	0.5	0.9	pF
Positive Clamping Voltage	V_{C1}	$I_{PP}=1A , T_P=8/20\mu S ;$	--	--	12	V

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

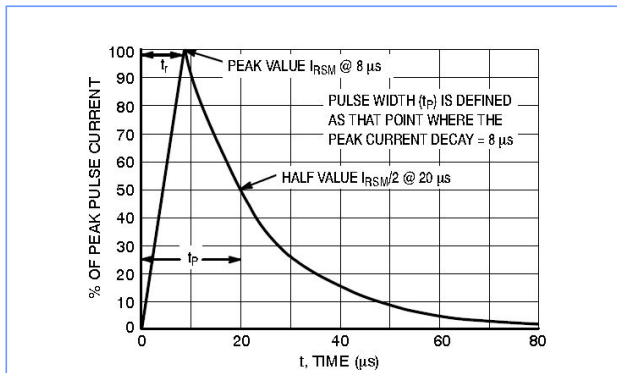


Fig2.ESD Pulse Waveform (according to IEC 61000-4-2)

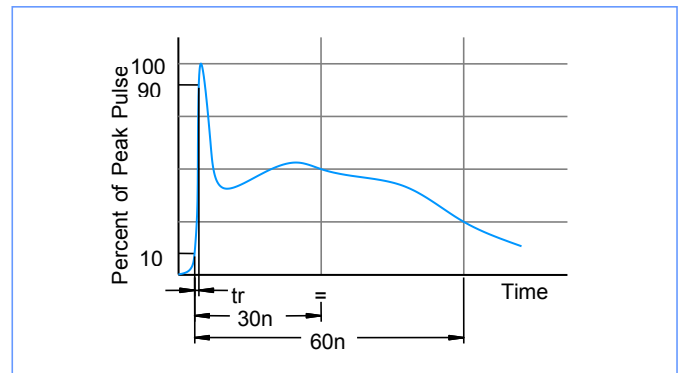


Fig3. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

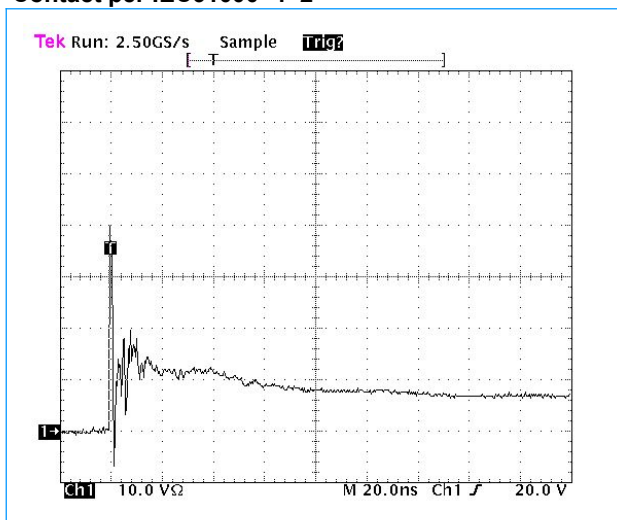
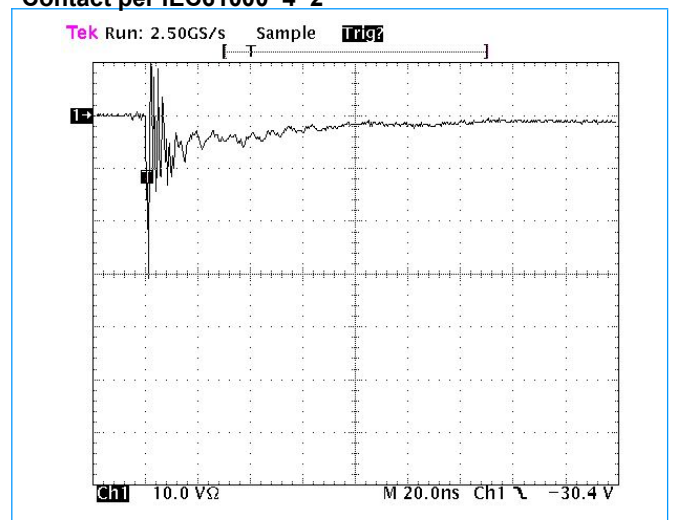


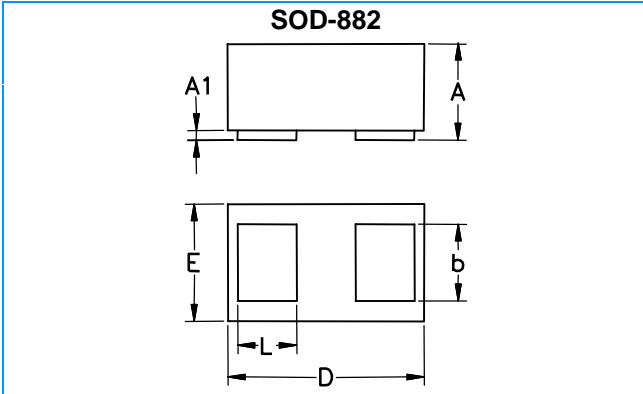
Fig4. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2



Transient Voltage Suppressors for ESD Protection

ESD3.3V88D-LA

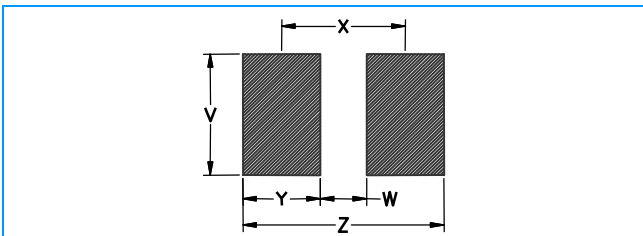
Dimension



Dimension	Min.	Max.
A	0.47	0.53
A1	0.00	0.05
B	0.25	0.55
D	0.95	1.075
E	0.55	0.675
L	0.20	0.45

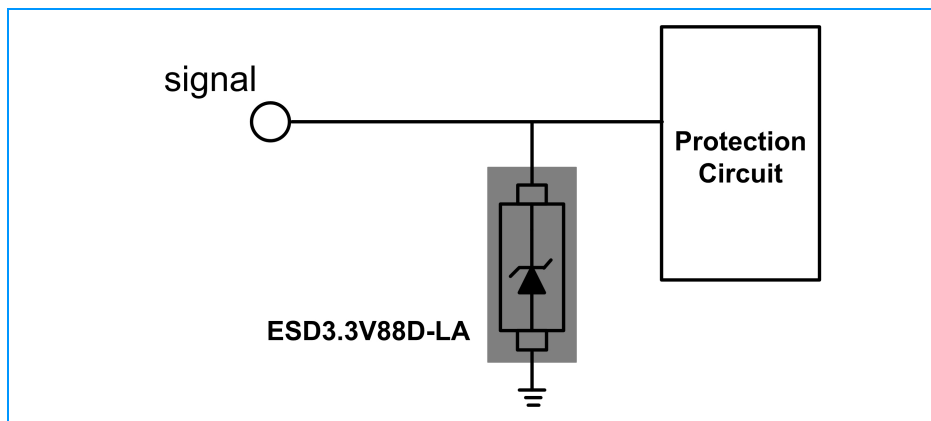
All Dimensions in millimeter

Soldering Pad Layout



Dimension	Millimeters	Inches
Z	1.30	0.051
X	0.75	0.029
W	0.20	0.007
Y	0.55	0.021
V	0.80	0.031

Application Information



signal port ESD Protection