

Transient Voltage Suppressors Array for ESD Protection

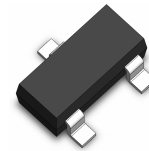
Low Capacitance

ESDXXV23T-LA Series

Description

The ESDXXV23T-LA 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.

SOT-23



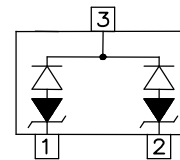
Feature

- u 300 Watts Peak Pulse Power per Line (tp=8/20μs)
- u Protects two I/O lines (Common Mode)
- u Protects one I/O line (Differential Mode)
- u Low clamping voltage
- u Working voltages : 3.3, 5, 8, 12, 15 and 24V
- u Low leakage current
- u IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 5A (8/20μs)

Applications

- u Digital Visual Interface (DVI)
- u Audio/Video Inputs
- u Wireless Network Systems
- u Monitors and Flat Panel Displays
- u Medical Sensors
- u Notebook Computers
- u Set Top Box
- u Projection TV

Functional Diagram



Mechanical Characteristics

- u JEDEC SOT-23 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 8.0 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (tp=8/20μs waveform)	300	W
T_L	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-2 (ESD)		
	Air Discharge	±15	KV
	Contact Discharge	±8	
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 (Lightning)	5	A

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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)		
ESD03V23T-LA	N03	3.3	4.0	1	7.5	13.0	5	40	0.6
ESD05V23T-LA	N05	5.0	6.0	1	9.8	17.0	5	5	0.6
ESD08V23T-LA	N08	8.0	8.5	1	13.5	19.0	5	1	0.6
ESD12V23T-LA	N12	12.0	13.3	1	19.0	28.0	5	1	0.6
ESD15V23T-LA	N15	15.0	16.7	1	24.0	35.0	5	1	0.6
ESD24V23T-LA	N24	24.0	26.7	1	43.0	60.0	5	1	0.6

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

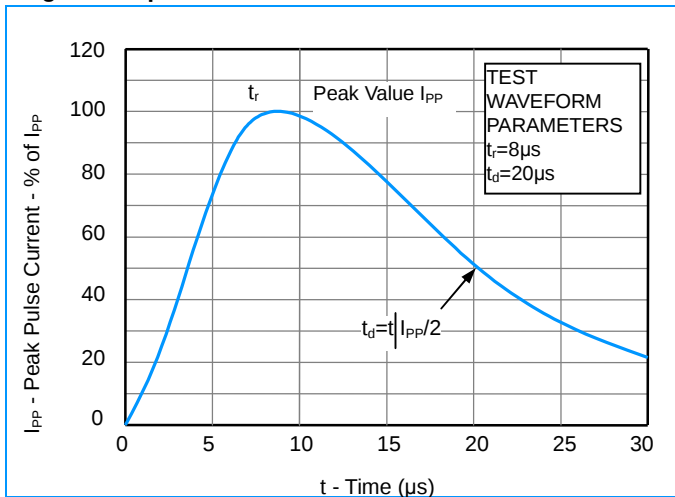


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

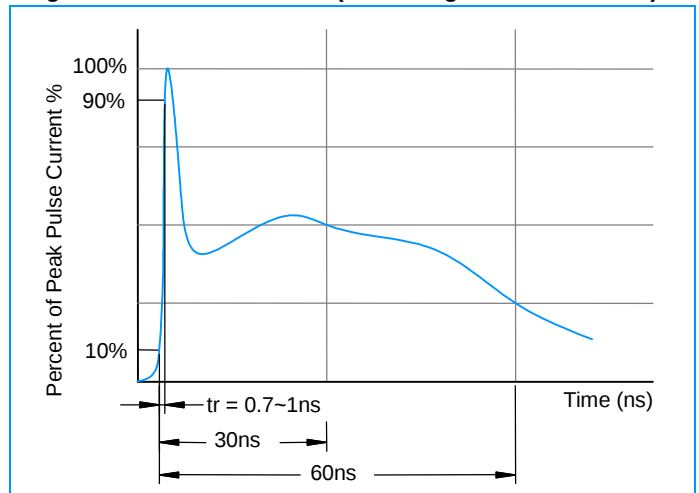


Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

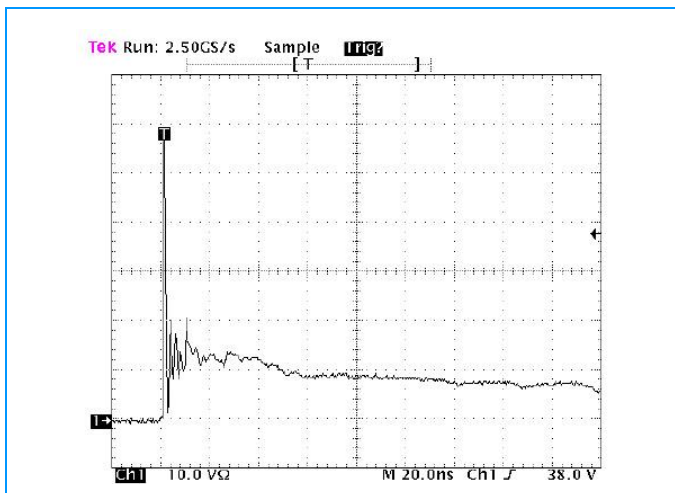
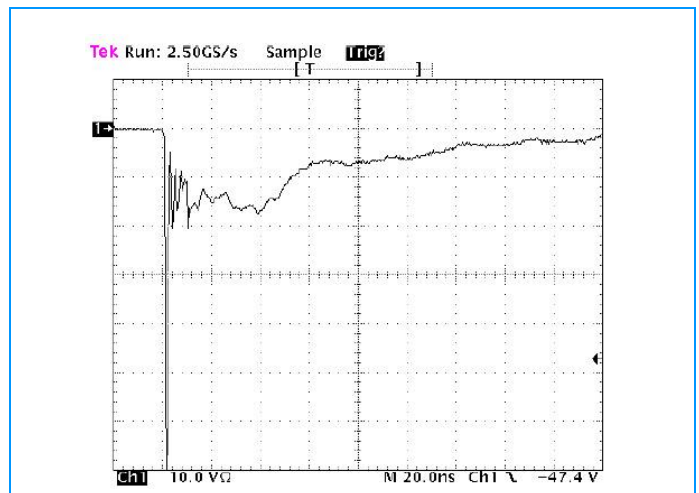


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

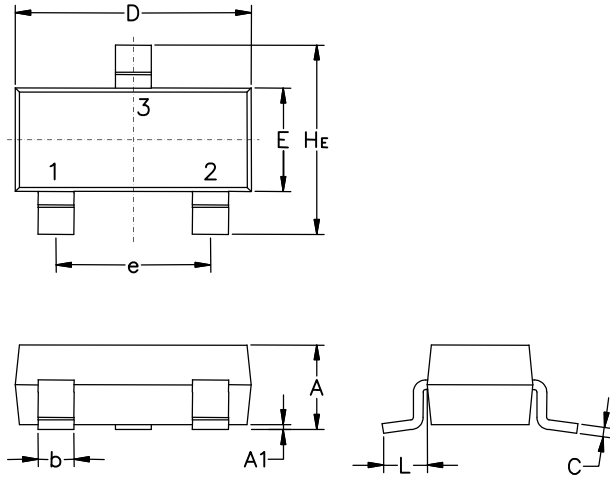


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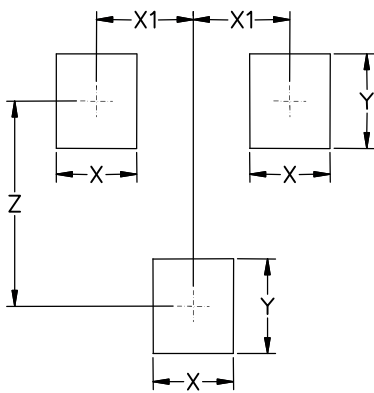
ESDXXV23T-LA Series

SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.15	0.18	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104

Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.95	0.037
Y	0.90	0.035
Z	2.00	0.079