

Transient Voltage Suppressors Array for ESD Protection

ESDXXV23T 2C Series

Description

The ESDXXV23T-2C 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.

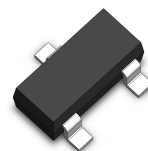
Feature

- u 350 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- u Protects two bi-directional I/O lines
- u Low clamping voltage
- u Working voltages : 3.3V to 36V
- u Low leakage current
- u IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
-3.3V~18V
- u IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
-24V~36V
- u IEC -4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 24A (8/20 μs)

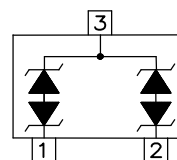
Applications

- u RS-232, RS-422 & RS-423 Data Lines
- u Audio/Video Inputs
- u Wireless Network Systems
- u Digit Video Interface (DVI)
- u Medical Sensors
- u Notebook Computers

SOT-23



Functional Diagram



Mechanical Data

- 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 ($t_p=8/20\mu s$ waveform)	350	W
T_L	Lead Soldering Temperature	260 (10sec)	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$
T_J	Operating Temperature Range	-55 to +150	$^{\circ}C$
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 (Lightning)	24	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)		
ESD3.3V23T-2C	C03	3.3	4.0	1	7	10.5	20	40	220
ESD05V23T-2C	C05	5	6.0	1	9.8	18	17	10	150
ESD08V23T-2C	C08	8	8.5	1	13.4	24	12	1	75
ESD12V23T-2C	C12	12	13.3	1	19	32	11	1	65
ESD15V23T-2C	C15	15	16.7	1	24	38	10	1	60
ESD18V23T-2C	C18	18	20.0	1	29	45	9	1	55
ESD24V23T-2C	C24	24	26.7	1	43	52	7	1	40
ESD36V23T-2C	C36	36	40.0	1	60	75	5	1	15

Fig1. 8/20μs Pulse Waveform

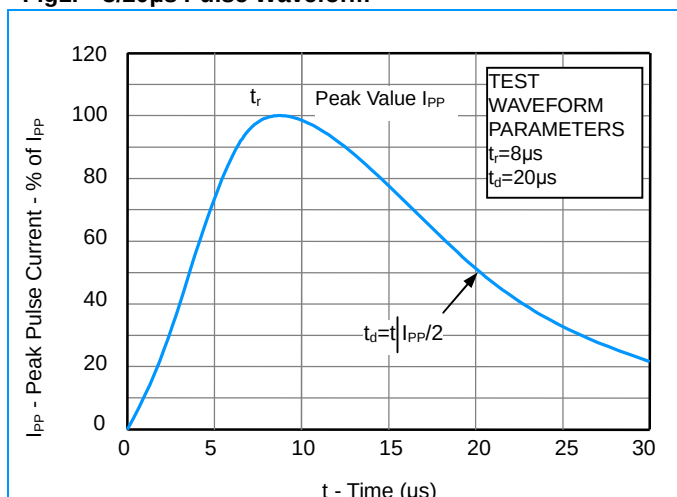


Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

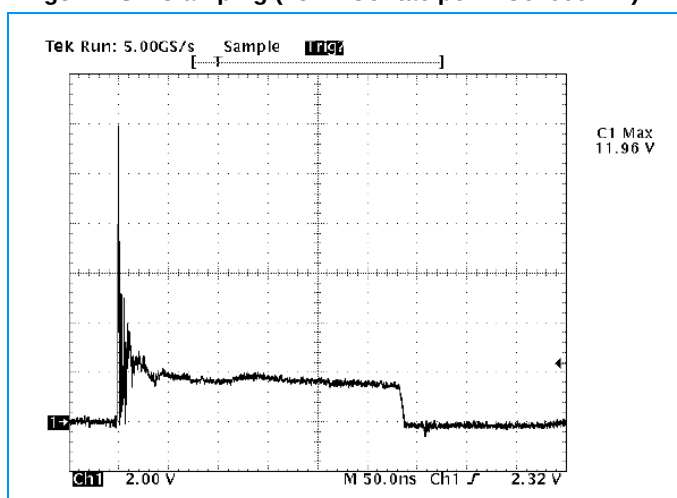


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

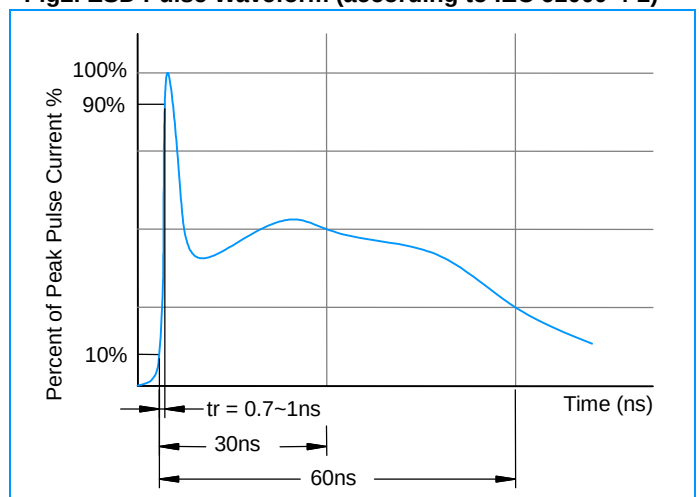
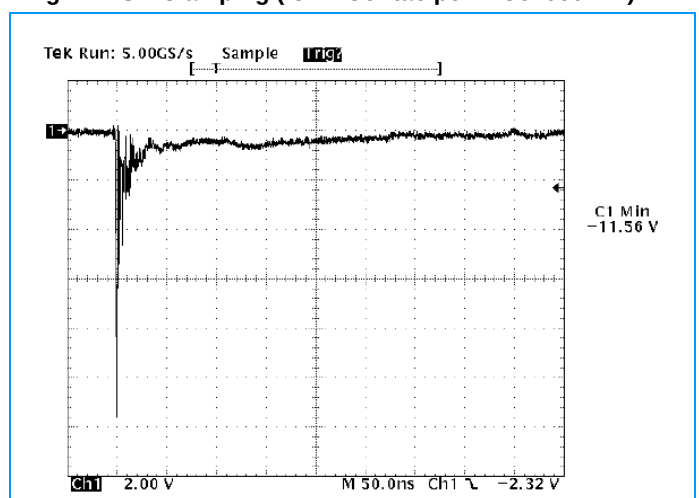


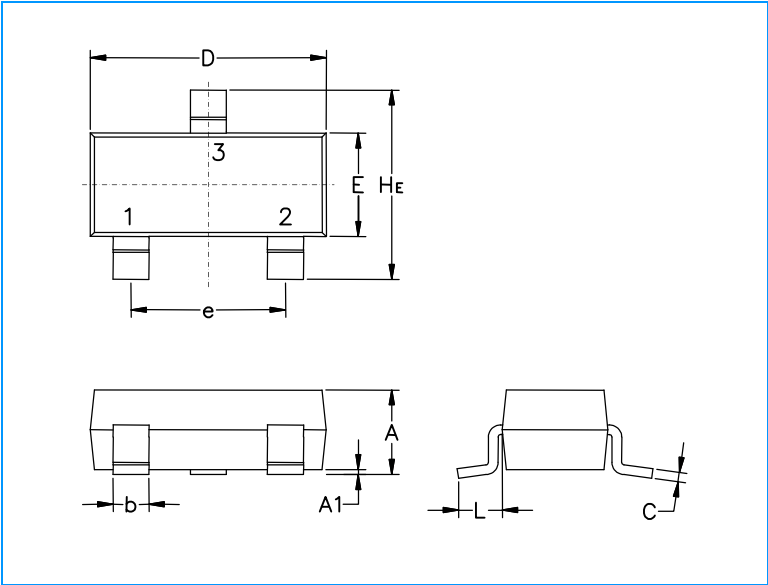
Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)



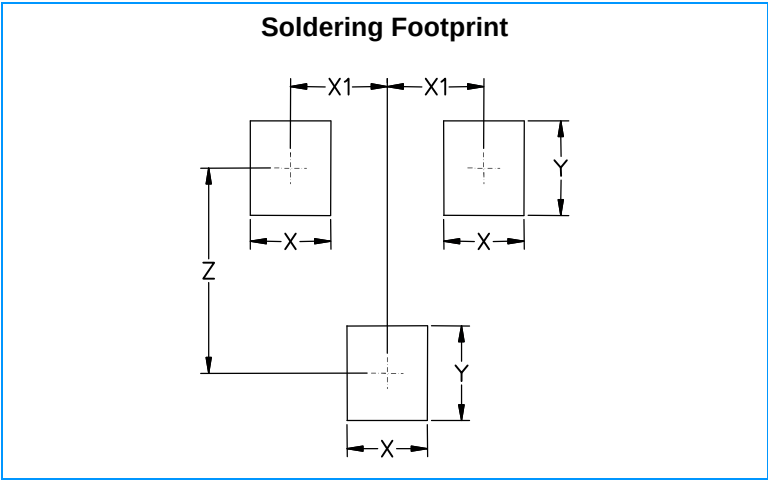
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SOT-23 Package Outline & Dimensions



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



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