

# Transient Voltage Suppressors Array for ESD Protection

## ESD0502V23T-2C

### Description

The ESD0502V23T-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.

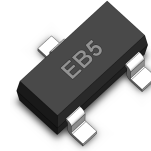
### Feature

- u 100 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects two high-Speed lines
- u Low clamping voltage
- u RoHS Compliant
- 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)

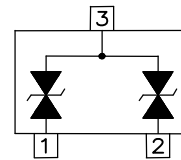
### Applications

- u Microprocessor based equipment
- u Notebooks, Desktops, and Servers
- u Industrial Controls
- u Instrumentation
- u Peripherals
- u Serial and Parallel Ports

### 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 <sub>PP</sub>	Peak Pulse Power (tp=8/20µs waveform)	100	W	
T <sub>L</sub>	Lead Soldering Temperature	260 (10sec)	°C	
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C	
T <sub>J</sub>	Operating Temperature Range	-55 to +150	°C	
	IEC61000-4-2 (ESD)	Air Discharge Contact Discharge	±15 ±8	KV
	IEC61000-4-4 (EFT)		40	A
	IEC61000-4-5 ( Lightning )		5	A

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## ESD0502V23T-2C

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)		
ESD0502V23T-2C	EB5	5	6	1	9.8	20	4	5	30

Fig1. 8/20μs Pulse Waveform

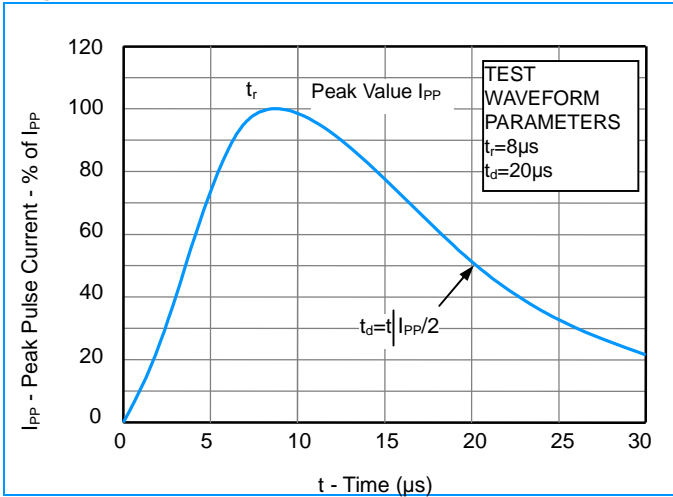


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

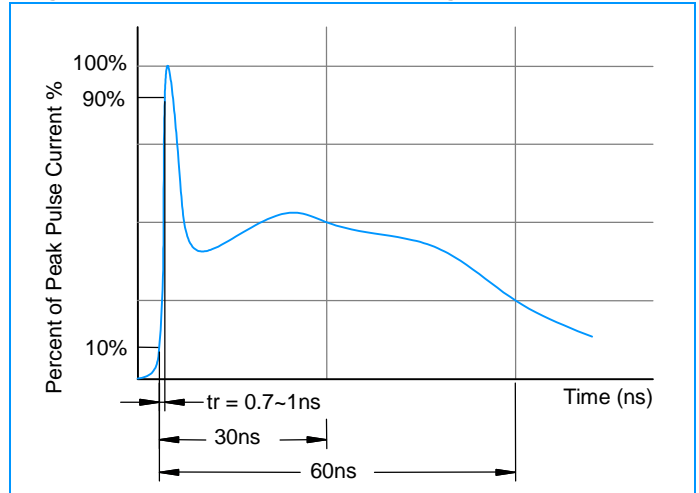
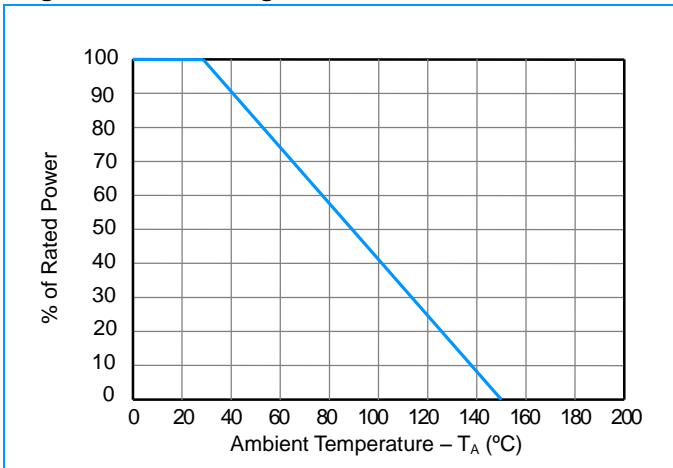


Fig3. Power Derating Curve



# Transient Voltage Suppressors Array for ESD Protection

## ESD0502V23T-2C

### Characteristic Curves

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

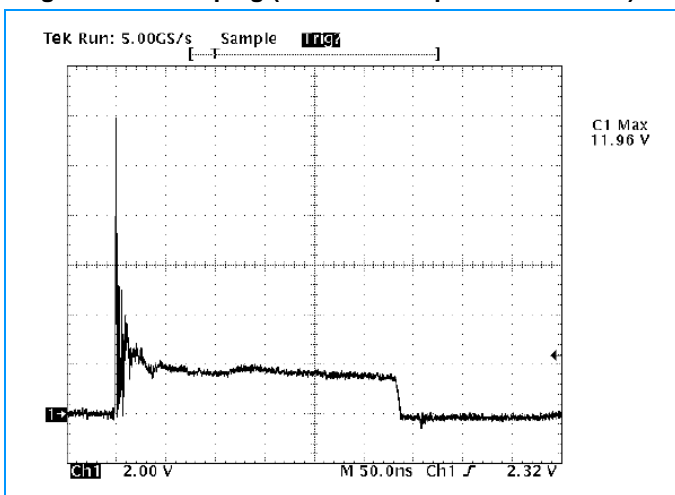
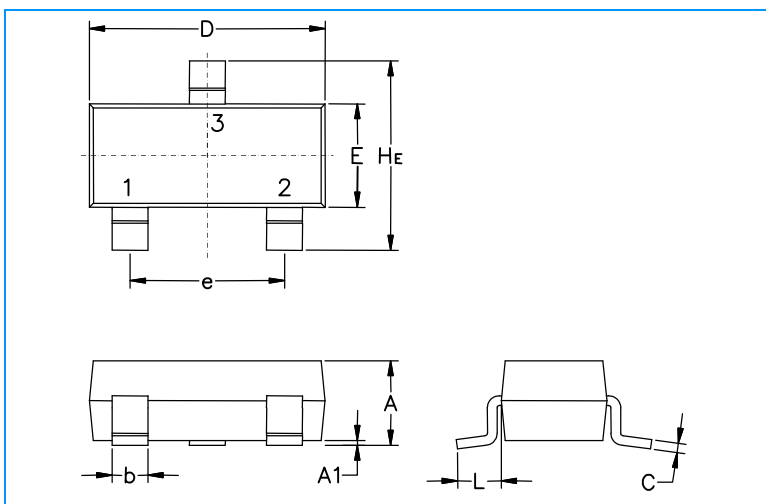
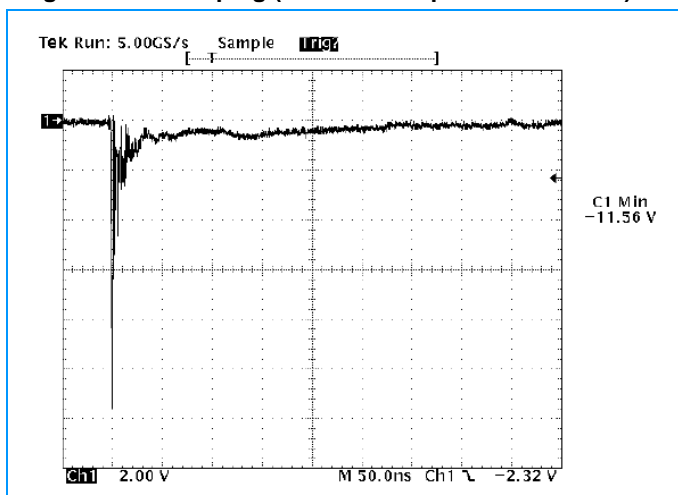
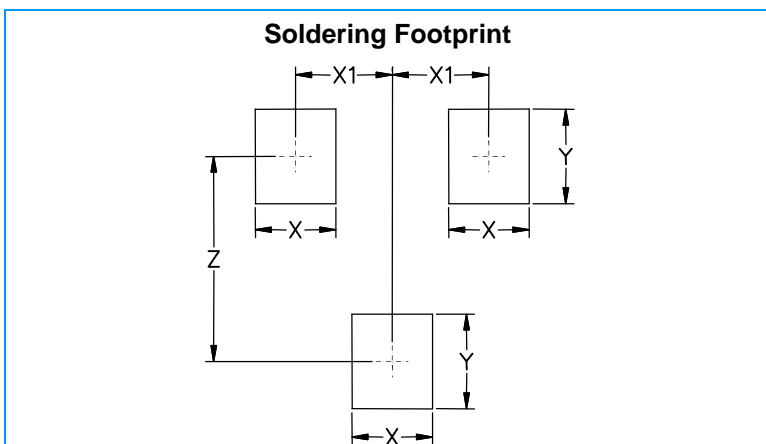


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)



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
He	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