

## Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

### ESD05V23T-2L

#### Description

The ESD05V23T-2L 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.

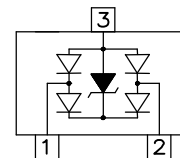
#### SOT-23



#### Feature

- ◆ 350 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects two I/O lines
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 12A (8/20μs)

#### Functional Diagram



#### Applications

- ◆ USB Power & Data Line Protection
- ◆ Ethernet 10BaseT
- ◆ I<sup>2</sup>C Bus Protection
- ◆ Video Line Protection
- ◆ T1/E1 secondary IC Side Protection
- ◆ Microcontroller Input Protection
- ◆ ISDN S/T Interface
- ◆ WAN/LAN Equipment

#### Mechanical Characteristics

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 8.0 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ 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)	350	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 ±15 Contact Discharge ±8	KV
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 ( Lightning )	12	A

# Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

## ESD05V23T-2L

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)		
ESD05V23T-2L	Y D05	5	6	1	9.8	12	5	1	1

### Characteristic Curves

Fig1. 8/20μs Pulse Waveform

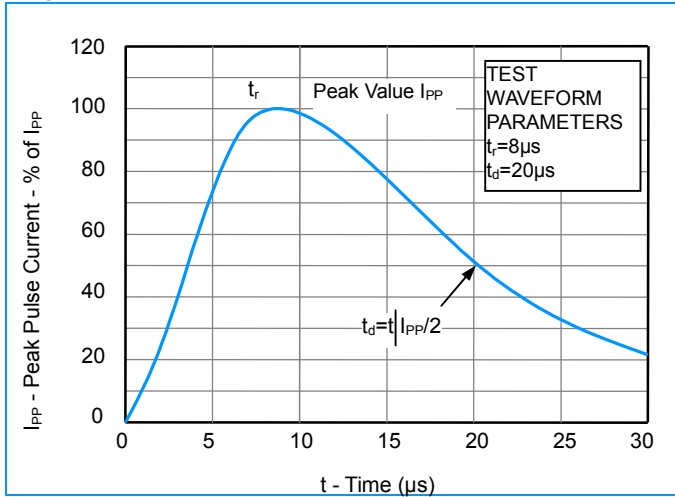


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

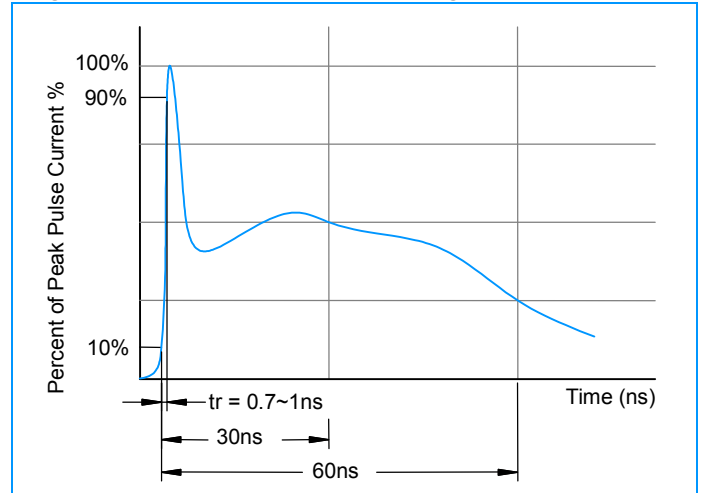


Fig3.

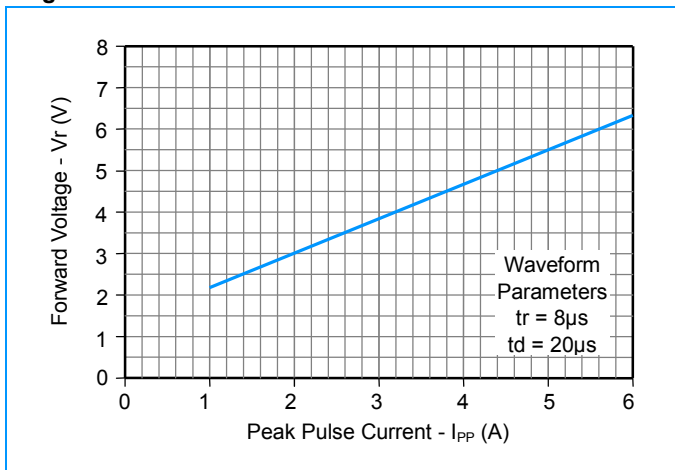
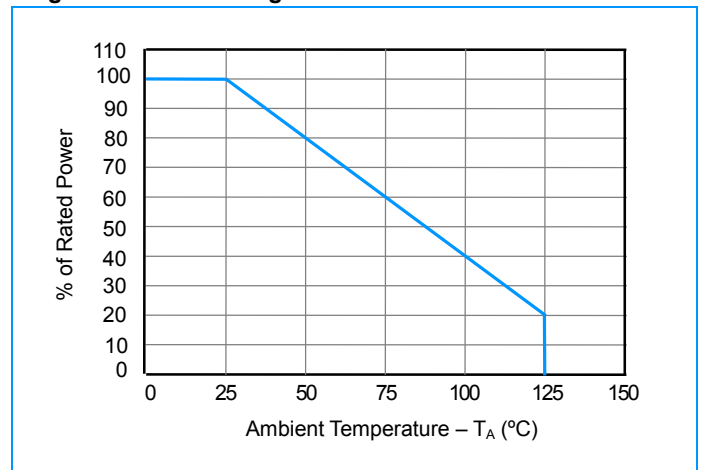


Fig4. Power Derating Curve



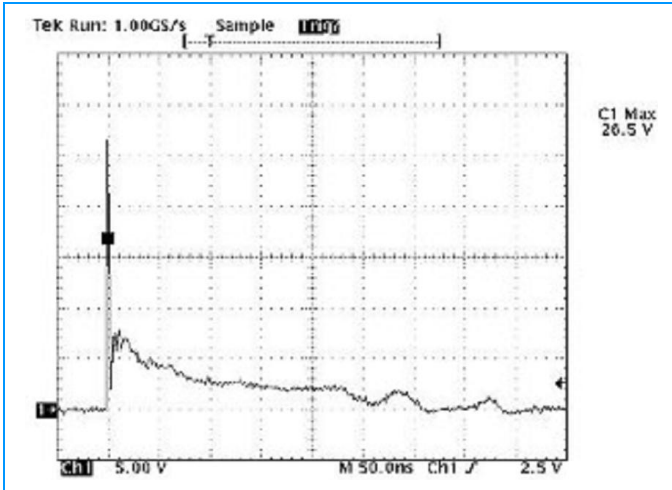
# Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

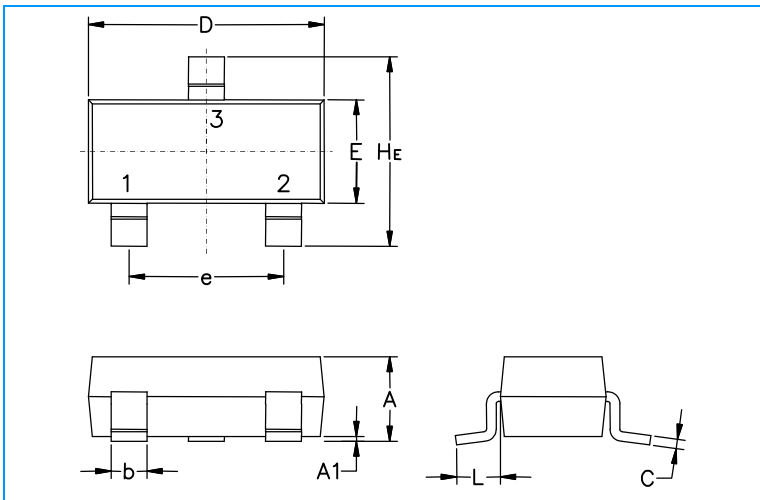
## ESD05V23T-2L

### Characteristic Curves

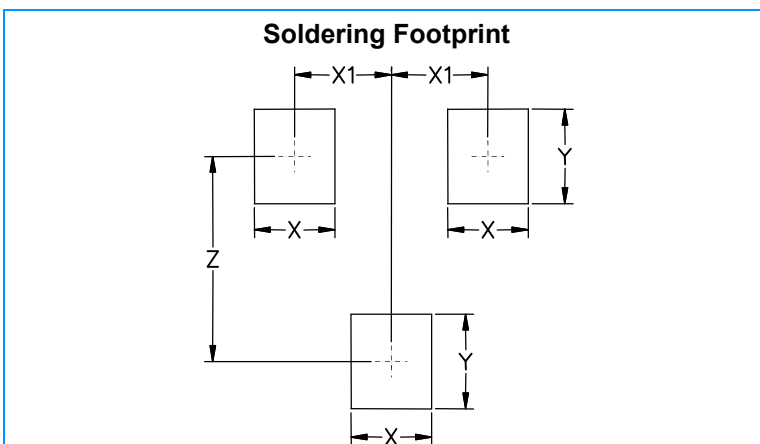
Fig5. ESD Clamping (8KV Contac per IEC61000-4-2)



### 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
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