

Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

SE05T2D12HC

Feature

- ◆ Protects two I/O lines
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current

Applications

- ◆ USB Power & Data Line Protection
- ◆ Ethernet 10BaseT
- ◆ I²C Bus Protection
- ◆ Video Line Protection
- ◆ T1/E1 secondary IC Side Protection

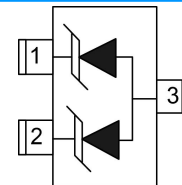
Mechanical Characteristics

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch

SOT-23



Functional Diagram



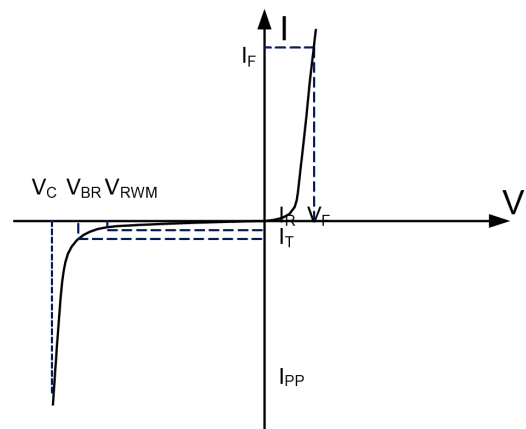
SOT-23 (Top View)

I-V Curve Characteristics

Symbol	Parameter	Value	Units
T_L	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OP}	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-2 (ESD)	Air Discharge Contact Discharge	±15 ±8 KV

Absolute Maximum Rating

Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}	—	—	—	5.0	V
I_R	$V_{RWM}=5V, T=25^{\circ}C$	—	—	1.0	μA
V_{BR}	$I_T=1mA$	6.0	—	—	V
C_J	$V_R=0V, f=1MHz$ pin 1 to pin 2	—	0.2	0.35	pF
C_J	$V_R=0V, f=1MHz$ Pin 1 or 2 to pin 3	—	0.4	0.75	pF
V_C	$I_{PP}=2A, t_p=8/20\mu s$	—	12	—	V

Characteristic Curves

Fig1. ESD Pulse Waveform (according to IEC 61000-4-2)

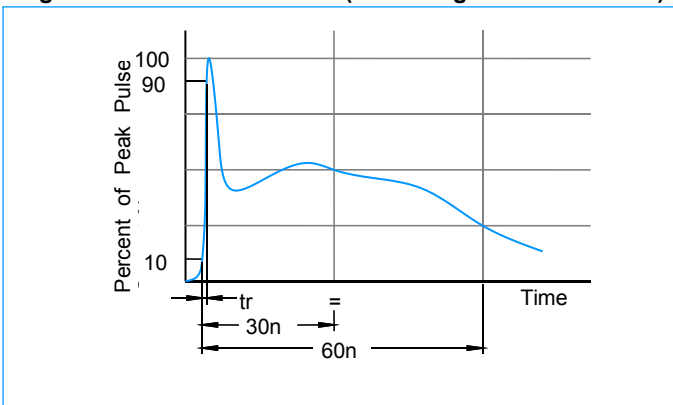


Fig2. pulse Derating Curvt

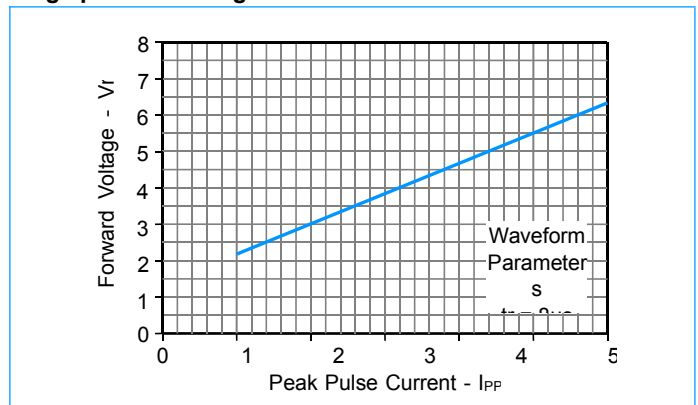


Fig3. pulse Derating Curvt

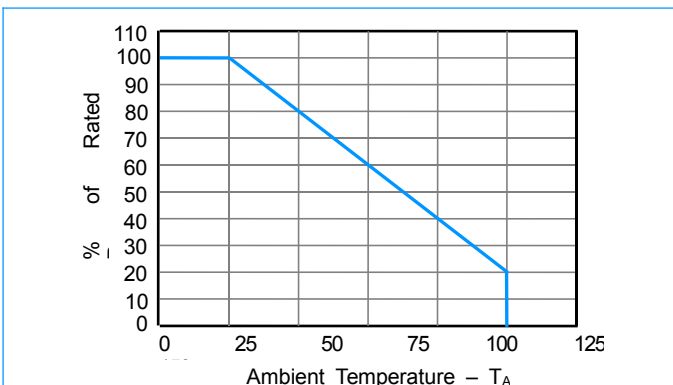
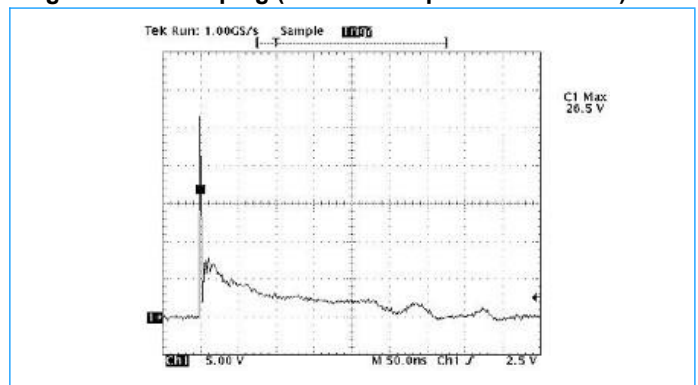
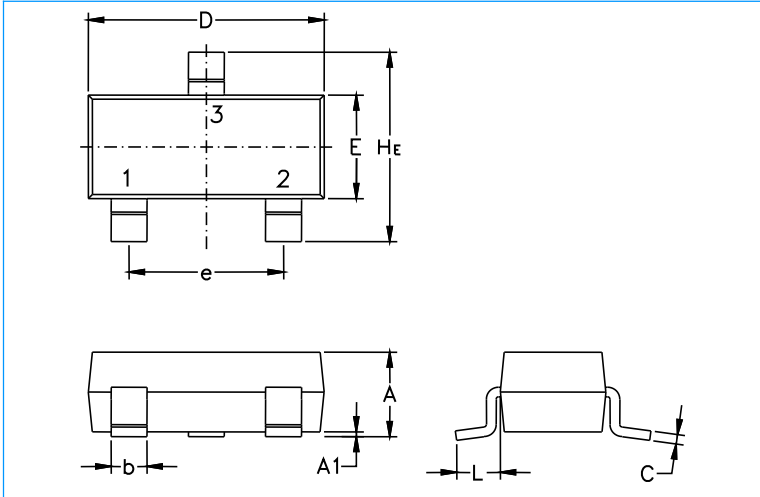
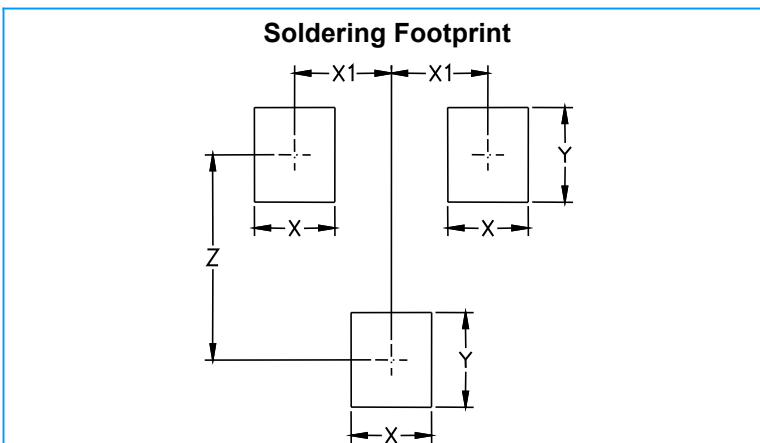


Fig4. ESD Clamping (8KV Contac per IEC61000-4-2)



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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
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