

Transient Voltage Suppressors Array for ESD Protection

SE12T2V12GC

Feature

- ◆ Protects one bidirectional line or two unidirectional lines
- ◆ Low clamping voltage
- ◆ RoHS Compliant

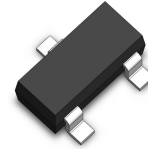
Applications

- ◆ Cellular Handsets and Accessories
- ◆ Portable Electronics
- ◆ Industrial Controls
- ◆ Set-Top Box

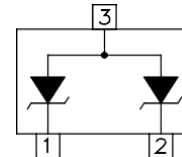
Mechanical Characteristics

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

SOT-23



Functional Diagram

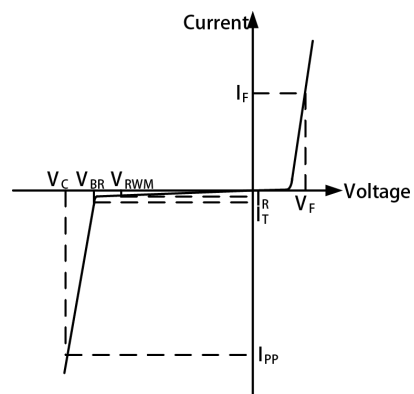


Mechanical Characteristics

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

I-V Curve Characteristics

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
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



Uni-Directional TVS

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Electrical Characteristics (T = 25°C)

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}	—	—	—	12	V
V_{BR}	$I_T=1mA$	13.3	—	—	V
I_R	$V_{RWM}=12V, T=25^\circ C$	—	—	1	μA
I_{PP}	$t_p=8/20\mu s$	—	—	12	A
V_C	$I_{PP}=1A, t_p=8/20\mu s$	—	—	19	V
V_C	$I_{PP}=12A, t_p=8/20\mu s$	—	—	35	V
C_J	Pin 1 to 2 $V_R=0V, f=1MHz$	—	30	—	pF
C_J	Pin 1 to 3 and Pin 2 to 3 $V_R=0V, f=1MHz$	—	50	—	pF

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

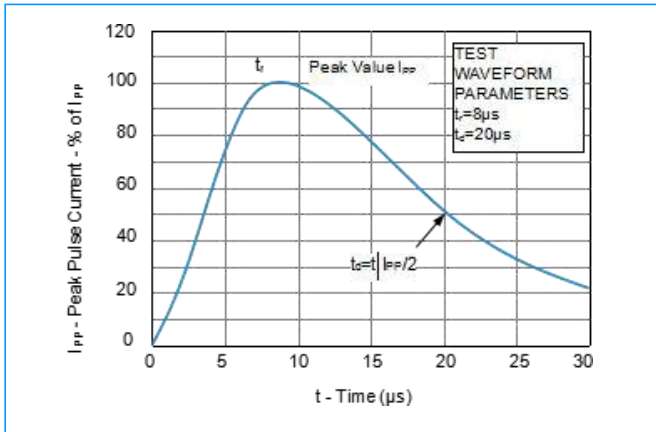


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

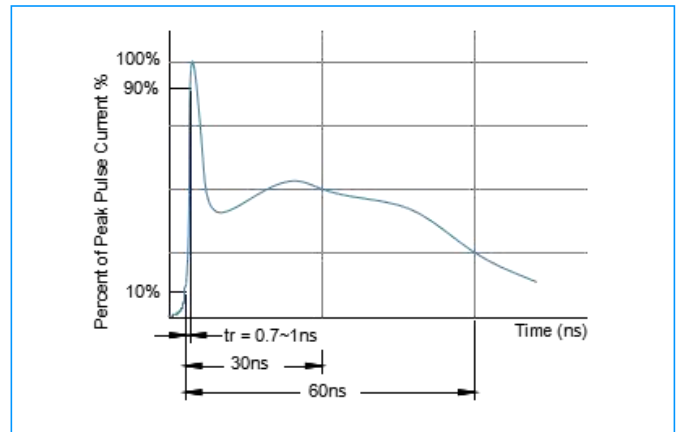
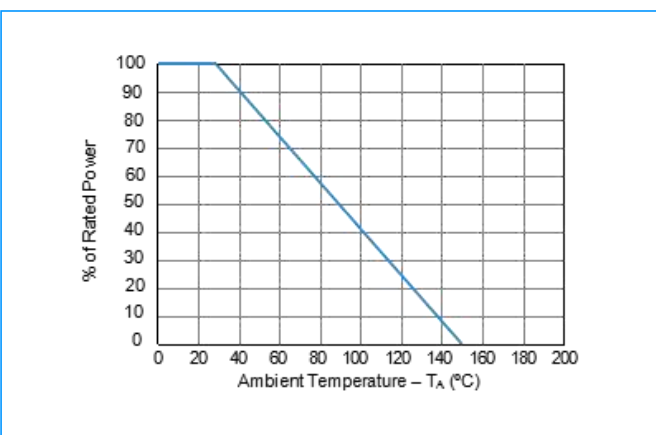


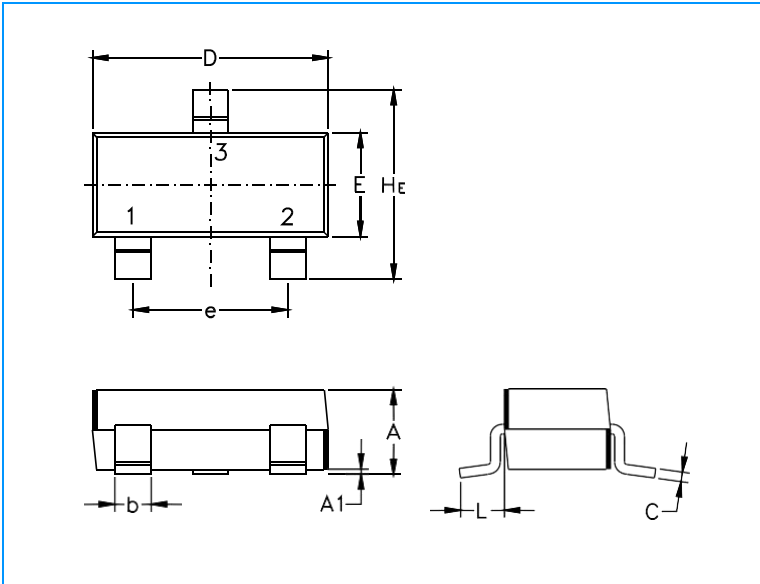
Fig3. Power Derating Curve



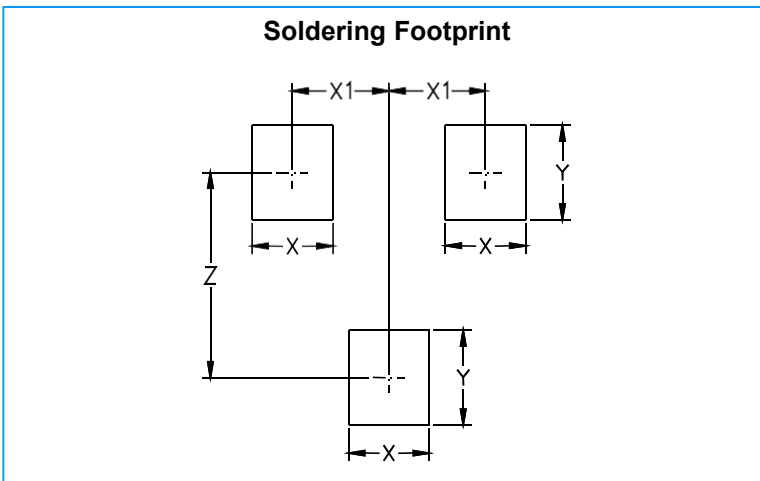
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SOT-23 Package Outline & Dimensions



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