

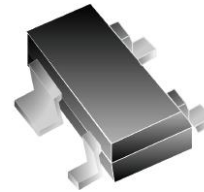
Transient Voltage Suppressors for ESD Protection

SE05T1D32GZ

Features

- ◆ Working voltage: 5V
- ◆ Low capacitance: 0.7pF (Typical)
- ◆ Low leakage current: 1μA @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

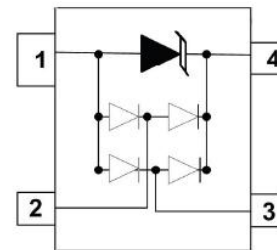
SOT-143



Applications

- ◆ Fire Wire & USB
- ◆ Sensitive Analog Inputs
- ◆ Notebook Computers
- ◆ Portable Electronics

Pin Configuration



Mechanical Characteristics

- ◆ SOT-143 Package
- ◆ Molding Compound Flammability Rating: UL 94V-0
- ◆ Quantity Per Reel: 3,000pcs
- ◆ Reel Size: 7 inch

Absolute Maximum Rating

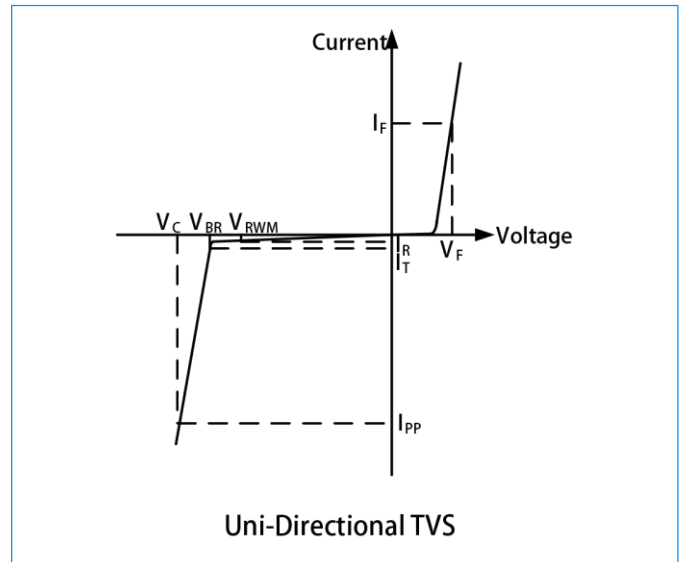
Symbol	Parameter	Value	Units
T_{LST}	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OPT}	Operating Temperature Range	-55 to +150	°C
V_{ESD}	ESD per IEC 61000-4-2(Air)	±20	KV
	ESD per IEC 61000-4-2 (Contact)	±20	

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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



Electrical Characteristics (@ $T_A=25^\circ\text{C}$ unless Otherwise Specified)

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}	Any I/O pin to GND	--	--	5	V
I_R	$V_{RWM}=5\text{V}, T=25^\circ\text{C}$ Any I/O pin to GND	--	--	1	μA
V_{BR}	$I_T=1\text{mA}$ Any I/O pin to GND	6	--	9	V
V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	10	--	V
V_C	$I_{PP}=5\text{A}, t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	13	--	V
C_J	$V_R=0\text{V}, f=1\text{MHz}$ Any I/O pin to GND	--	0.7	--	pF

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Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig1. Pulse Waveform

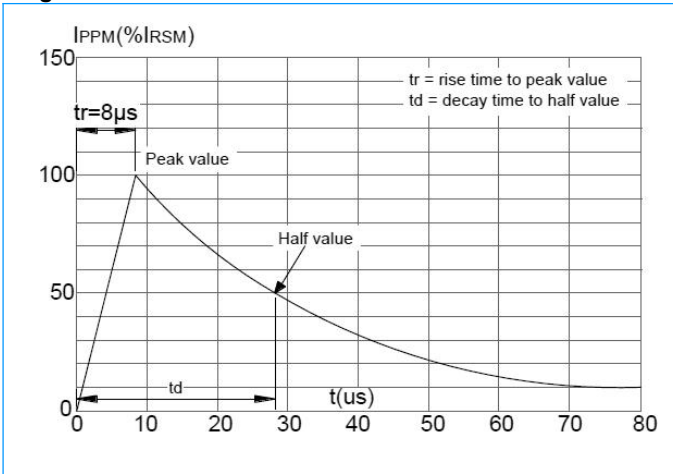


Fig2. Pulse Derating Curve

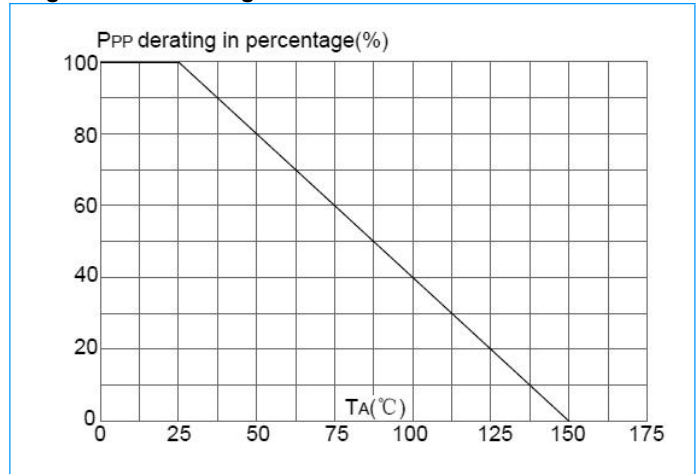
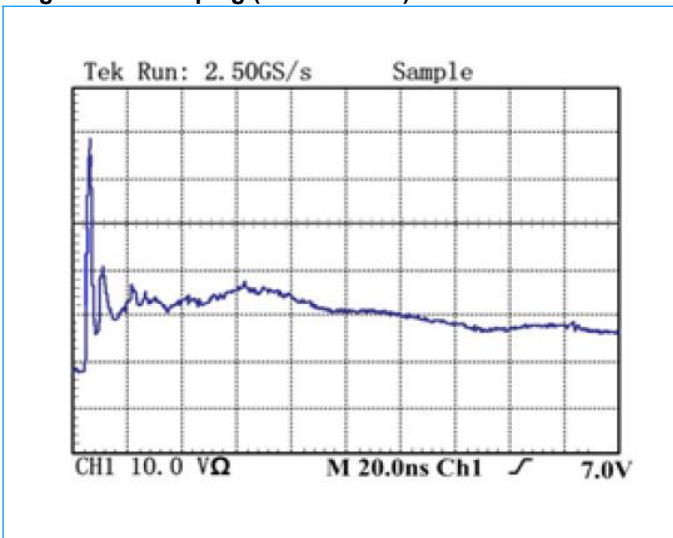


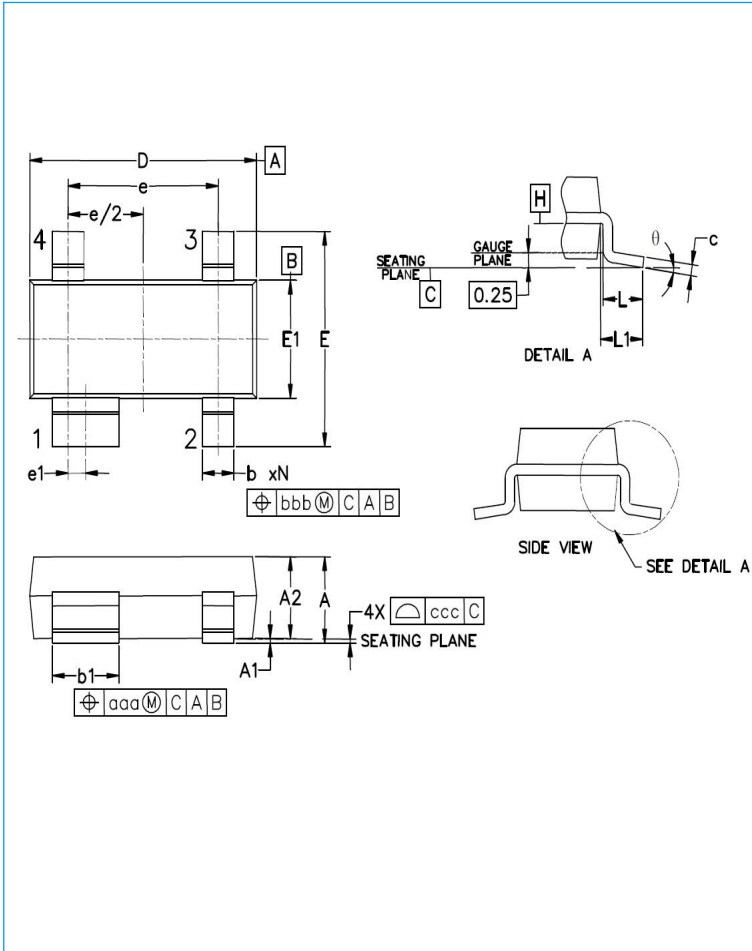
Fig3. ESD Clamping (8KV Contact)



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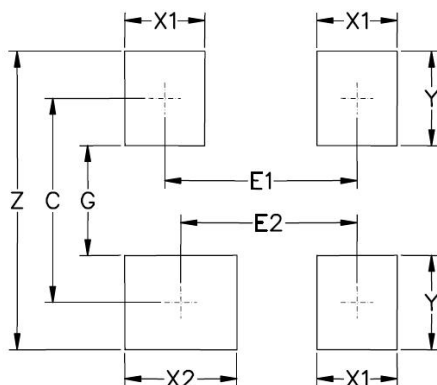
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SOT-143 Package Outline & Dimensions



Symbol	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.031	--	0.048	0.80	--	1.22
A1	0.000	--	0.008	0.013	--	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	--	0.020	0.30	--	0.51
b1	0.029	--	0.037	0.76	--	0.94
c	0.003	--	0.008	0.08	--	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	--	8°	0°	--	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		

Soldering Footprint



Symbol	Inches	Millimeters
C	(0.087)	(2.20)
E1	0.076	1.92
E2	0.068	1.72
G	0.031	0.80
X1	0.039	1.00
X2	0.047	1.20
Y	0.055	1.40
Z	0.141	3.60

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