

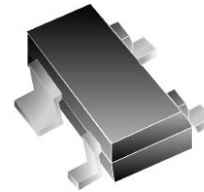
Transient Voltage Suppressors for ESD Protection

SE05T1D12GZ

Features

- ◆ Working voltage : 5V
- ◆ Low capacitance: 0.75pF (Typical)
- ◆ Low leakage current: 1μA @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

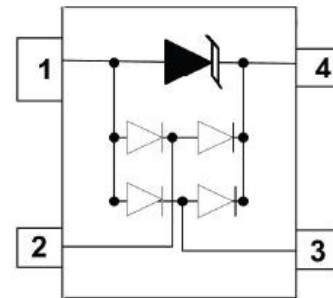
SOT-143



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

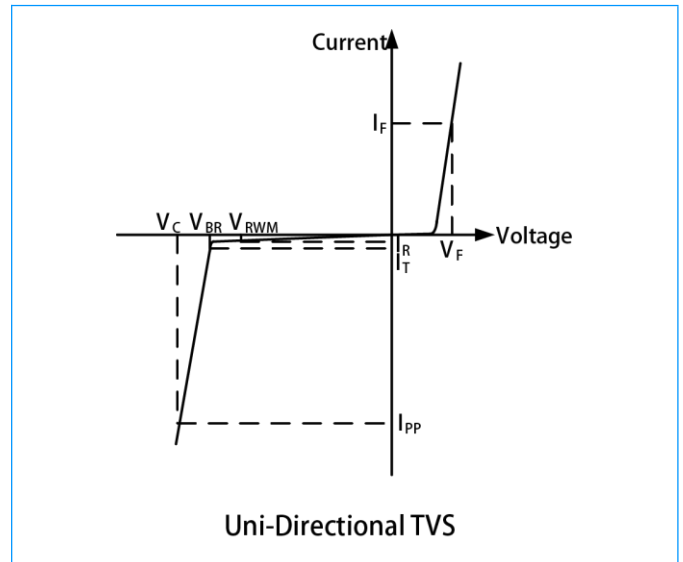
Symbol	Parameter	Value	Units
T_{LST}	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OPT}	Operating Temperature Range	-55 to +150	°C
V_{ESD}	ESD per IEC 61000-4-2(Air)	±15	KV
	ESD per IEC 61000-4-2 (Contact)	±8	

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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	6.5	7.5	9	V
V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	--	11	V
V_C	$I_{PP}=5\text{A}, t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	--	15	V
C_J	$V_R=0\text{V}, f=1\text{MHz}$ Any I/O pin to GND	--	0.75	0.9	pF

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

Fig1. Pulse Waveform

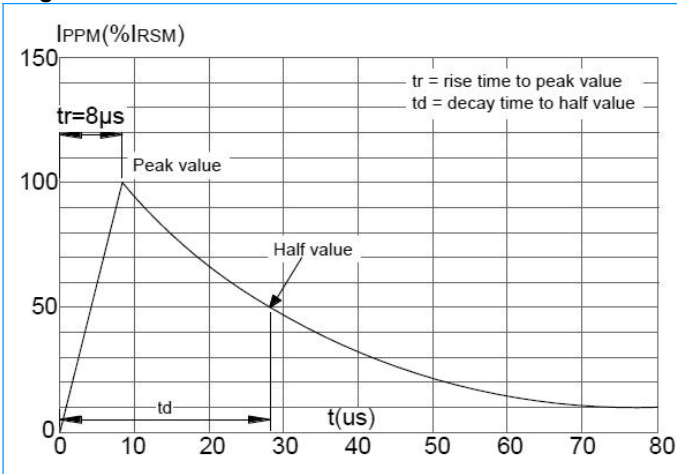


Fig2. Pulse Derating Curve

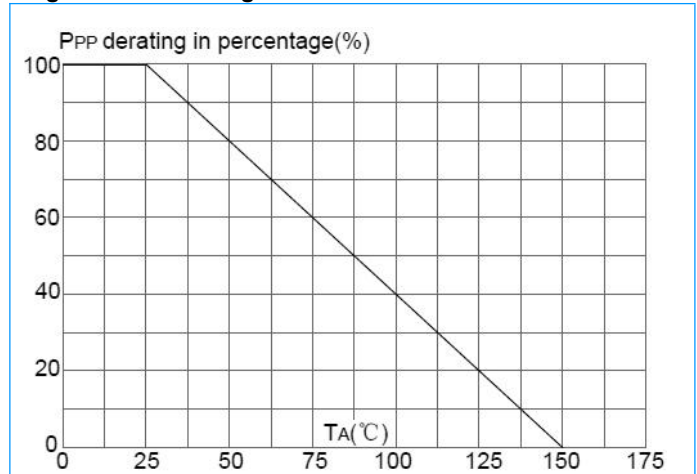
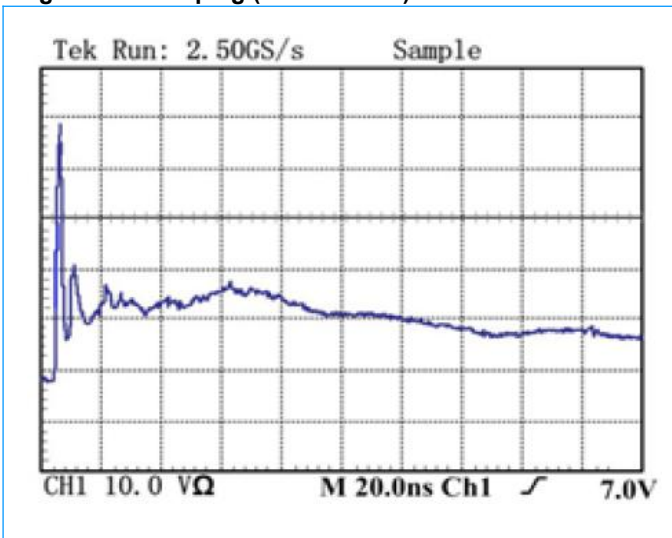


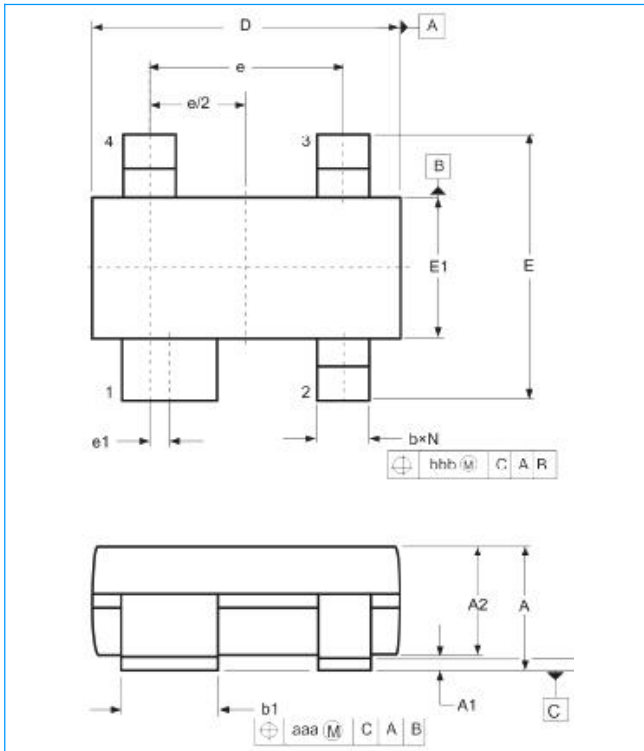
Fig3. ESD Clamping (8KV Contact)



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SOT-143 Package Mechanical Data



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
b1	0.75	0.90	0.030	0.035
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
e	1.80	2.00	0.071	0.079
e1	0.20TYP		0.008TYP	
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055