

Transient Voltage Suppressors Array for ESD Protection

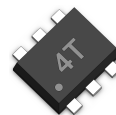
Low Capacitance

ESD05V56T-4LC

Description

The ESD05V56T-4LC 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.

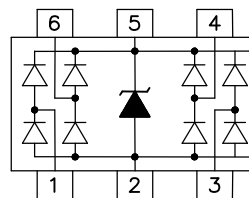
SOT-563



Feature

- 100 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- Protects up to two I/O lines & power line
- Low capacitance ($<1.5pF$) for high-speed interfaces
- Working voltages : 5V
- Ultra-small package requires less than $2.9mm^2$ of PCB area
- IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Functional Diagram



Applications

- USB 2.0 High Speed
- 10/100/1000 Ethernet Ports
- High-Definition Multimedia Interface (HDMI)
- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- Video Graphics Cards
- IEEE 1394 Fire wire Ports High Speed

Mechanical Data

- JEDEC SOT-563 Package
- Molding Compound Flammability Rating : UL 94V-0
- Weight 3.0 Milligrams (Approximate)
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	100	W
T_L	Lead Soldering Temperature	260 (10sec)	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$
T_J	Operating Temperature Range	-55 to +150	$^{\circ}C$
	IEC61000-4-2 (ESD)		
	Air Discharge	± 15	KV
	Contact Discharge	± 8	
	IEC61000-4-4 (EFT)	40	A

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V _{RWM} (V) (Max.)	V _B (V) (Min.)	I _T (mA)	V _C @1A (Max.)	V _C		I _R (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD05V56T-4LC	4T	5	6	1	9.8	23	5	1	1.5

Fig1. 8/20μs Pulse Waveform

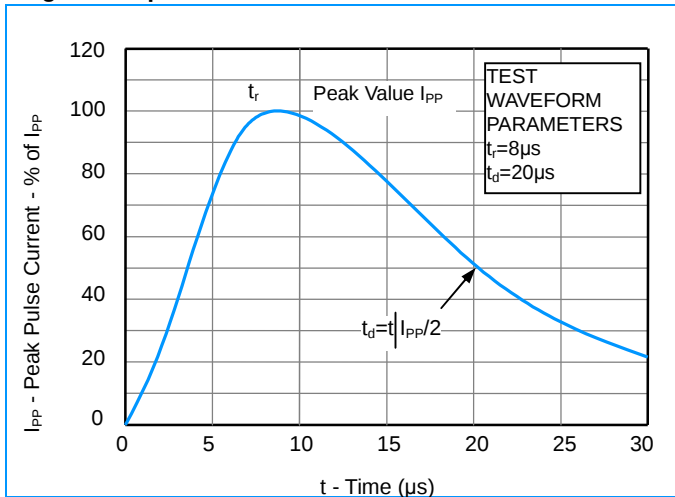


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

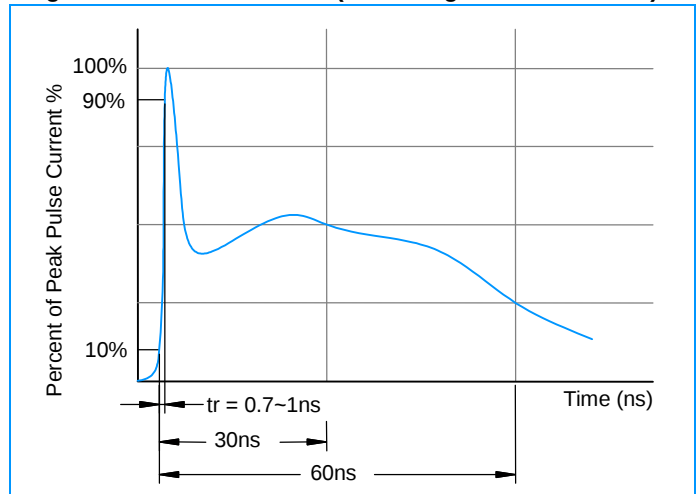


Fig4. ESD Clamping (+8KV Contac per IEC61000-4-2)

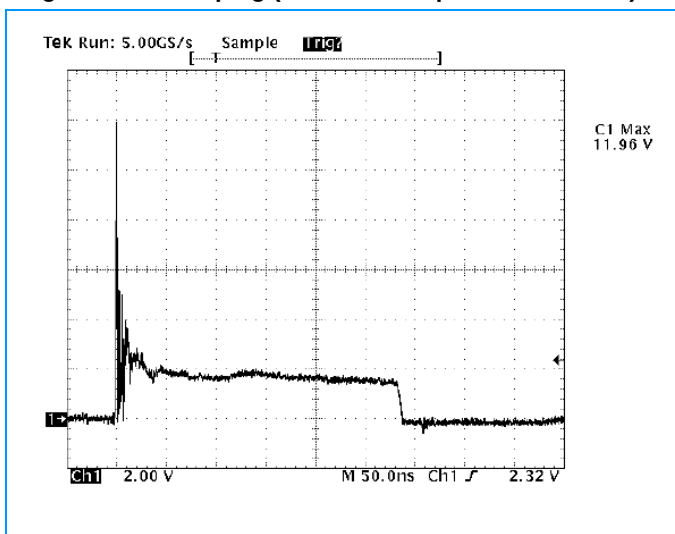
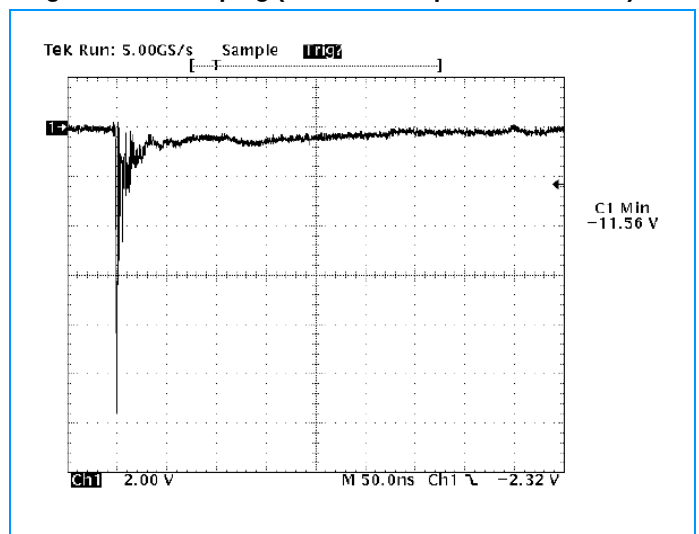


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)

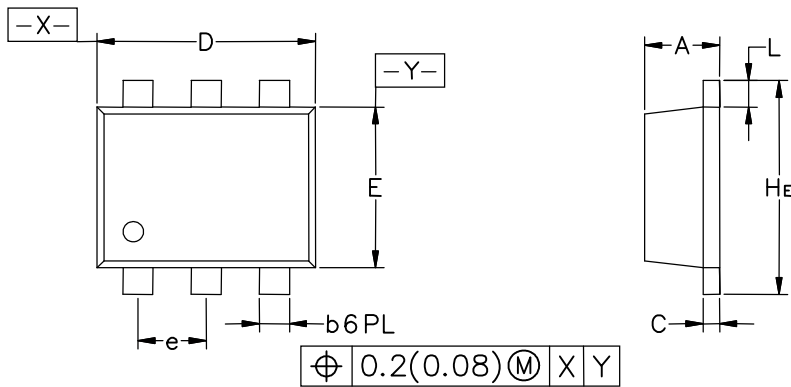


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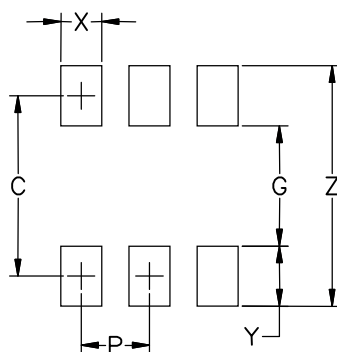
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SOT-563 Package Outline & Dimensions



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.020	0.021	0.023	0.50	0.55	0.60
b	0.007	0.009	0.011	0.17	0.22	0.27
C	0.003	0.005	0.007	0.08	0.12	0.18
D	0.059	0.062	0.066	1.50	1.60	1.70
E	0.043	0.047	0.051	1.10	1.20	1.30
e	0.02 BSC			0.5 BSC		
L	0.004	0.008	0.012	0.10	0.20	0.30
H _E	0.059	0.062	0.067	1.50	1.60	1.70

Soldering Footprint



Symbol	Inches	Millimeters
C	0.0531	1.35
G	0.0354	0.90
P	0.0197	0.50
X	0.0118	0.30
Y	0.0177	0.45
Z	0.0709	1.80