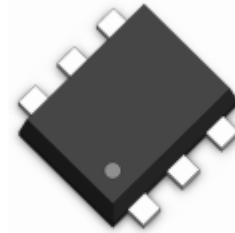


## Transient Voltage Suppressors for ESD Protection

### ESD3.3V56T-4L

#### Description

The ESD3.3V56T-5L is a small Surface-Mounted Device (SMD) special packages. It is designed to protect sensitive electronics from damage or latch up due to Electrostatic Discharge (ESD), lightning, and other voltage induced transient events. TVS diode designed to protect one power/control line or one signal line from over voltage hazard of Electrostatic Discharge (ESD).



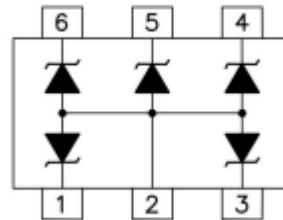
#### Feature

- ◆ 100 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects Four I/O Lines
- ◆ Low clamping voltage
- ◆ Working Voltages : 3.3V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (LIGHTNING) 7A (8/20μs)

#### Applications

- ◆ USB OTG
- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Industrial Controls
- ◆ Peripherals

#### Functional Diagram



#### Mechanical Data

- ◆ JEDEC SOT-563 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 3.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

#### Mechanical Characteristics

Symbol	Parameter	Value	Units
Ppp	Peak Pulse Power (tp=8/20μs waveform)	100	Watts
TL	Lead Soldering Temperature	260 (10 sec.)	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to +150	°C

**Transient Voltage Suppressors for ESD Protection**

**ESD3.3V56T-5L**

**Electrical Characteristics(@25°C Unless Otherwise Specified)**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	$V_{RWM}$	--	--	--	3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA;$	4.5	--	--	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 3.3V, T=25^{\circ}C;$	--	--	2.5	$\mu A$
Positive Clamping Voltage	$V_C$	$I_{PP} = 1A, T_P = 8/20\mu s ;$	--	--	8.5	V
Junction capacitance	$C_J$	$V_R = 0V, f = 1MHz;$	--	45	--	pF

**Characteristics Curves**

Fig1: 8/20 $\mu s$  Pulse Waveform

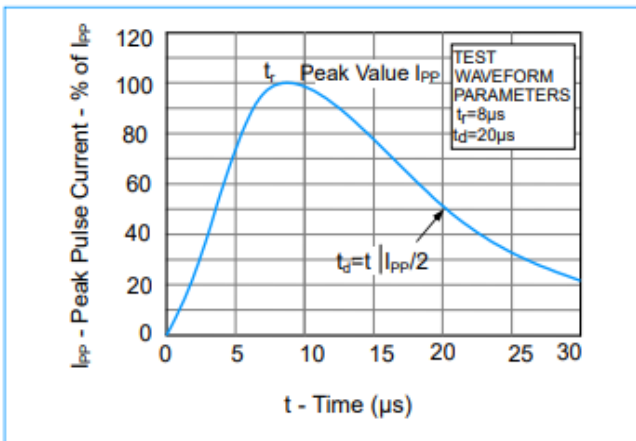


Fig2. Power Rating Derating Curve

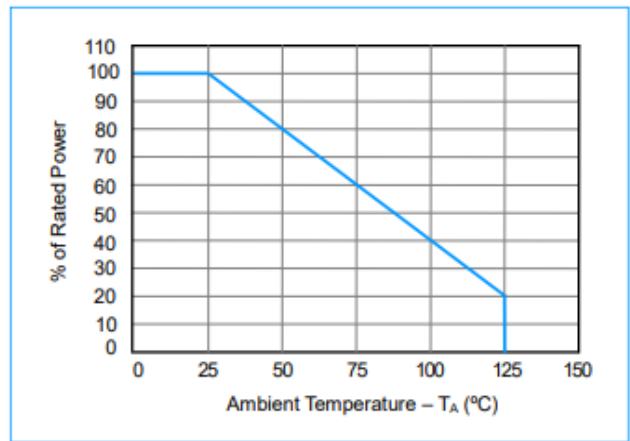
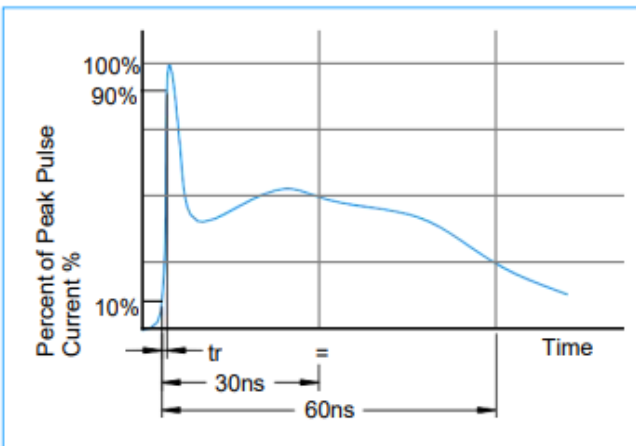


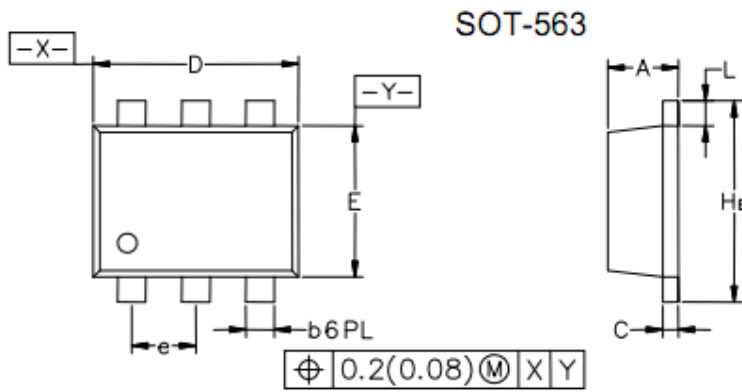
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



## Transient Voltage Suppressors for ESD Protection

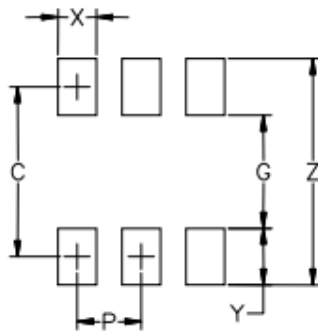
### ESD3.3V56T-5L

### 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 <sub>E</sub>	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

### Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD3.3V56T-5L	U6A	SOT-563	3,000pcs/Reel	7 inch