

# Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

## ESD05V36T-4L

### Description

The ESD05V36T-4L 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.

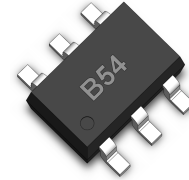
### Feature

- u 150 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects four I/O lines
- u Low clamping voltage
- u Working voltages : 5V
- u Low leakage current
- u IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 12A (8/20µs)

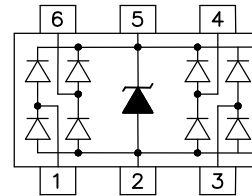
### Applications

- u USB OTG
- u Video Graphics Cards
- u Monitors and Flat Panel Displays
- u High-Definition Multimedia Interface (HDMI)
- u 10/100/1000 Ethernet
- u IEEE 1394 Fire wire Ports
- u SIM Ports
- u ATM Interfaces

SOT-363



### Functional Diagram



### Mechanical Data

- u JEDEC SOT-363 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 8.0 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

### Mechanical Characteristics

Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (tp=8/20µs waveform)	150	W	
T <sub>L</sub>	Lead Soldering Temperature	260 (10sec)	°C	
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C	
T <sub>J</sub>	Operating Temperature Range	-55 to +150	°C	
	IEC61000-4-2 (ESD)	Air Discharge Contact Discharge	±15 ±8	KV
	IEC61000-4-4 (EFT)	40	A	
	IEC61000-4-5 ( Lightning )	12	A	

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V <sub>RWM</sub> (V) (Max.)	V <sub>B</sub> (V) (Min.)	I <sub>T</sub> (mA)	V <sub>C</sub> @1A (Max.)	V <sub>C</sub>		I <sub>R</sub> (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD05V36T-4L	B54	5.0	6.0	1	15.0	25.0	6	1	2

Fig1. 8/20μs Pulse Waveform

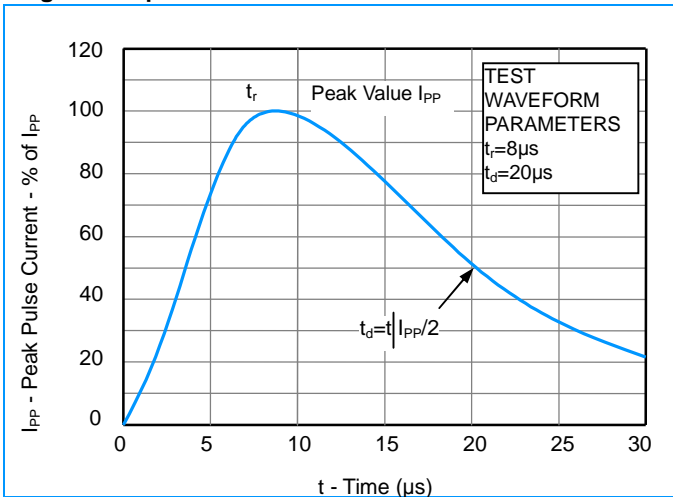


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

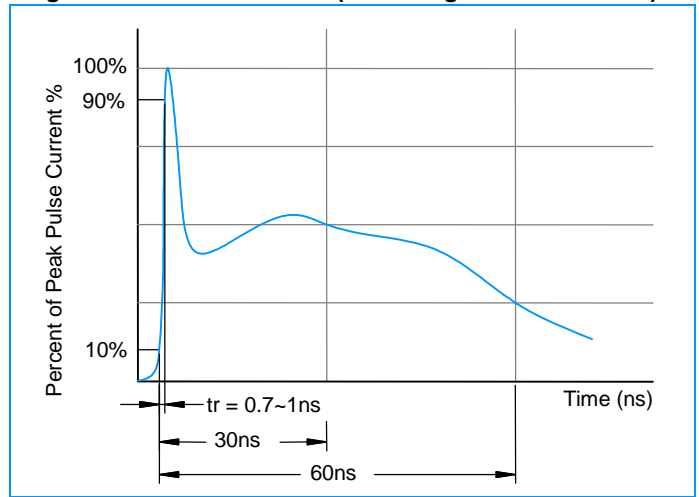
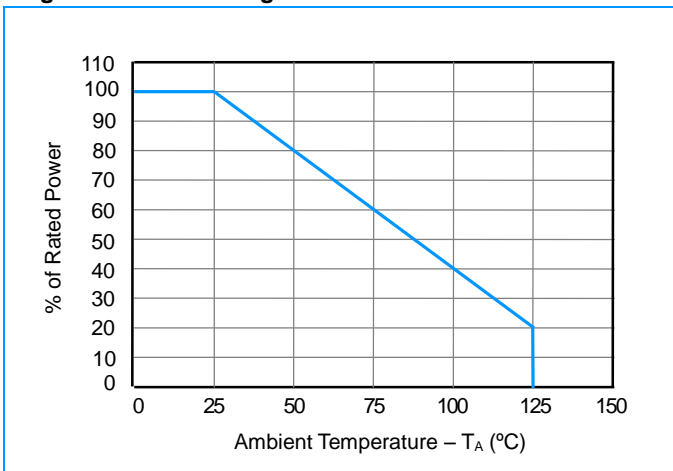


Fig3. Power Derating Curve



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ESD05V36T-4

Characteristic Curves

Fig4. Normalized Capacitance Vs. Reverse Voltage

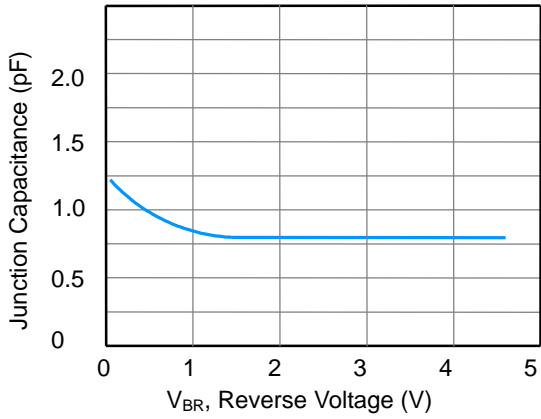
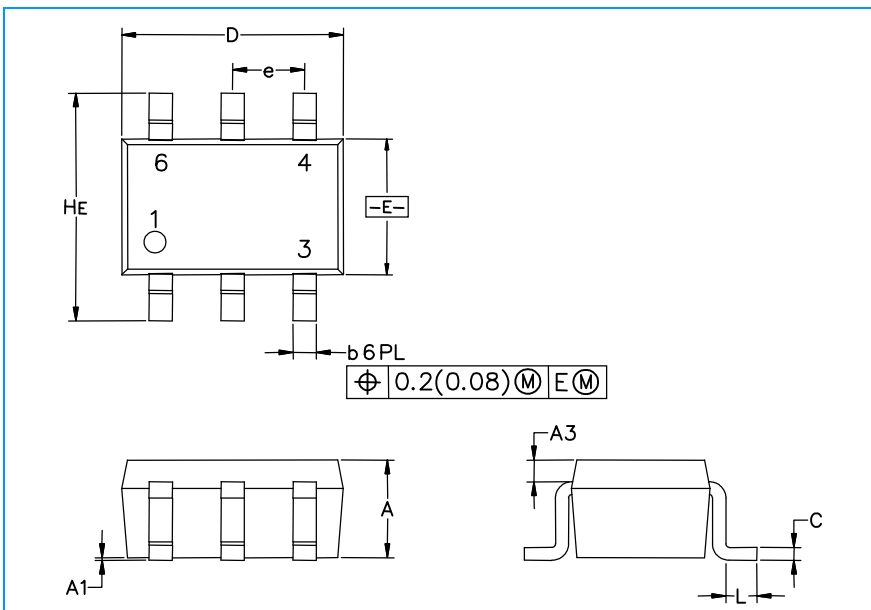
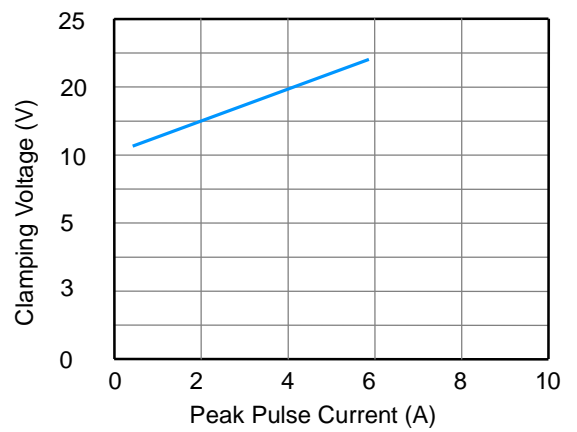
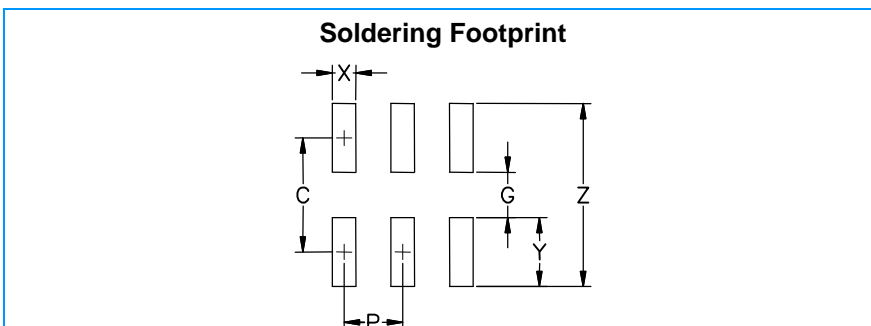


Fig5. Clamping Voltage Vs. Peak Pulse Current



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	0.037	0.043	0.80	0.95	1.10
A1	0.000	0.002	0.004	0.00	0.05	0.10
A3	0.08 REF			0.2 REF		
b	0.004	0.008	0.012	0.10	0.21	0.30
C	0.004	0.005	0.010	0.10	0.14	0.25
D	0.070	0.078	0.086	1.80	2.00	2.20
E	0.045	0.049	0.053	1.15	1.25	1.35
e	0.026 BSC			0.65 BSC		
L	0.004	0.008	0.012	0.10	0.20	0.30
H <sub>E</sub>	0.078	0.082	0.086	2.00	2.10	2.20



Symbol	Inches	Millimeters
C	0.0748	1.9
G	0.055	1.40
P	0.025	0.65
X	0.0157	0.40
Y	0.019	0.50
Z	0.0945	2.4