

Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

ESD05V14T-LC

Description

The ESD05V14T-LC 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.

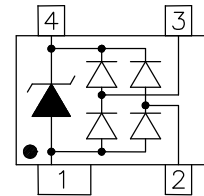
SOT-143



Feature

- u 300 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects two 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) 5A (8/20µs)

Functional Diagram



Applications

- u USB Power & Data Line Protection
- u Ethernet 10BaseT
- u I2C Bus Protection
- u Video Line Protection
- u T1/E1 secondary IC Side Protection
- u Microcontroller Input Protection
- u ISDN S/T Interface
- u WAN/LAN Equipment

Mechanical Characteristics

- u JEDEC SOT-143 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 10.0 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 _{PP}	Peak Pulse Power (tp=8/20µs waveform)	300	W
T _L	Lead Soldering Temperature	260 (10sec)	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _J	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-2 (ESD)	Air Discharge ±15 Contact Discharge ±8	KV
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 (Lightning)	5	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)		
ESD05V14T-LC	SL3	5	6	1	9.8	17	5	5	1.2

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

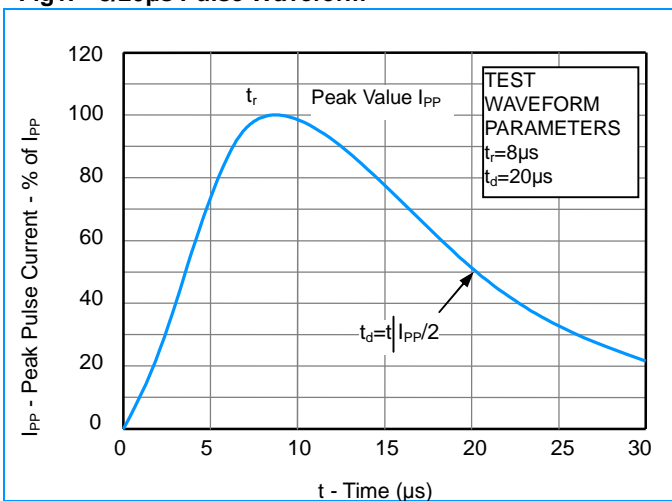


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

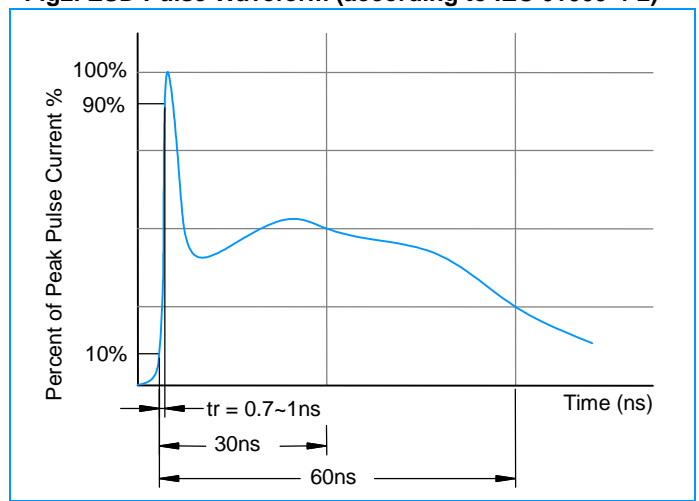
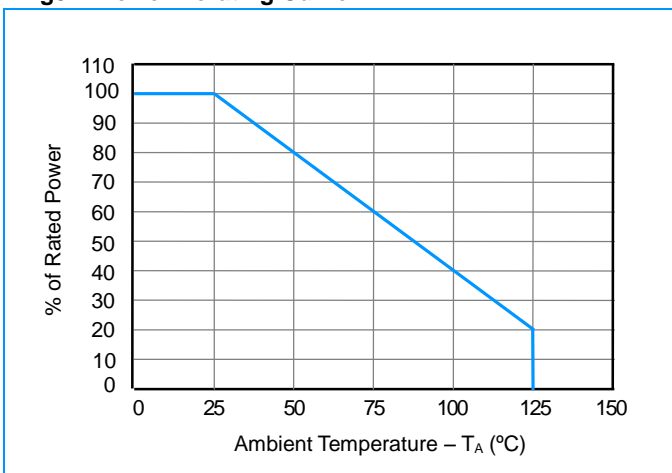


Fig3. Power Derating Curve

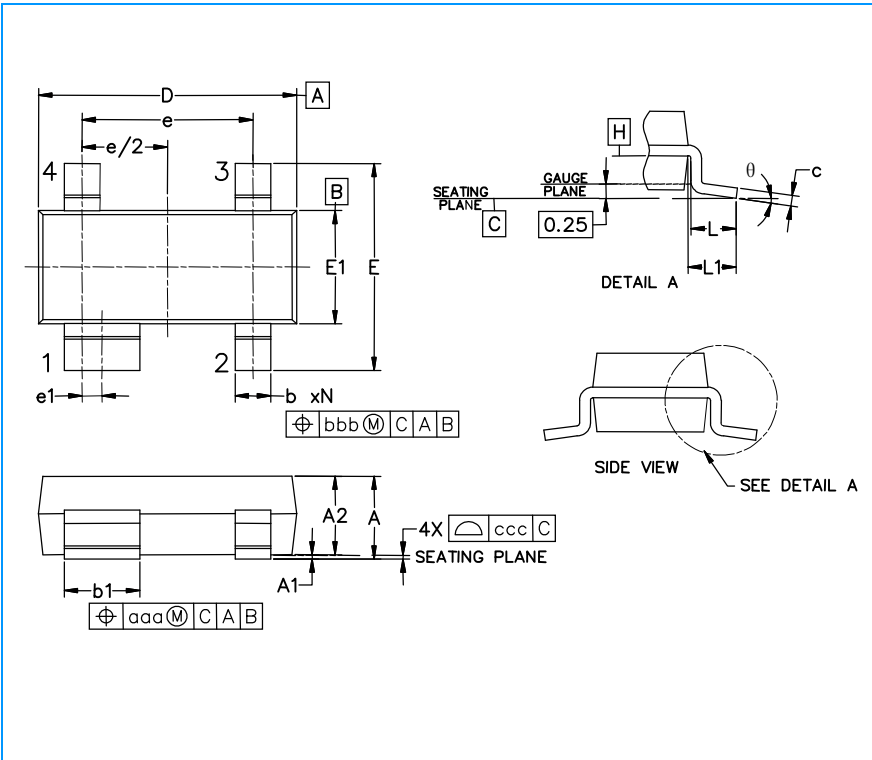


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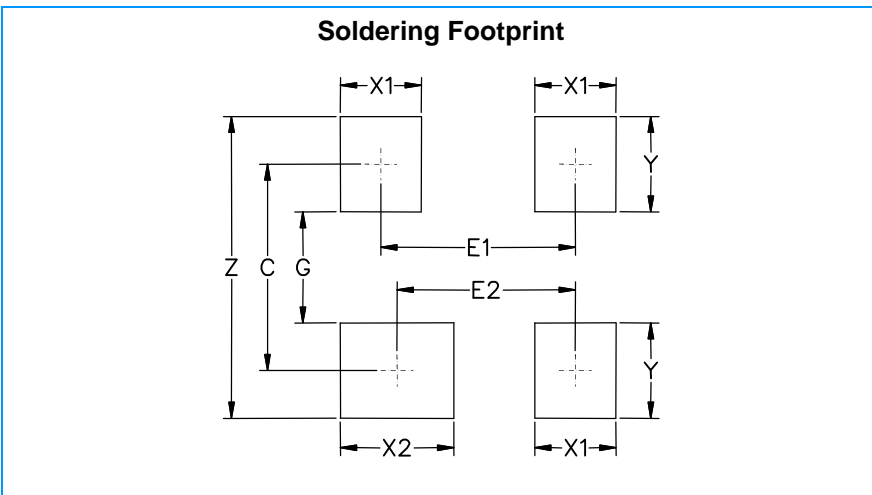
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SOT-143 Package Outline & Dimensions



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			



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