ESD05V14T-LC

ROHS

Transient Voltage Suppressors for ESD Protection

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.

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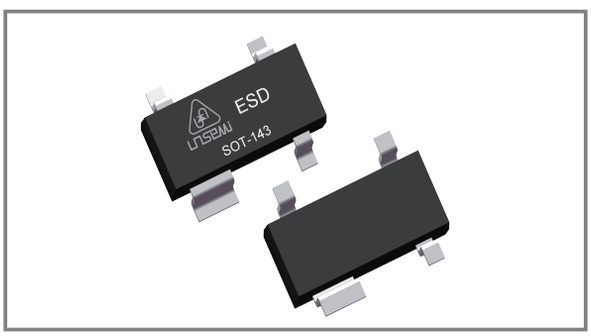
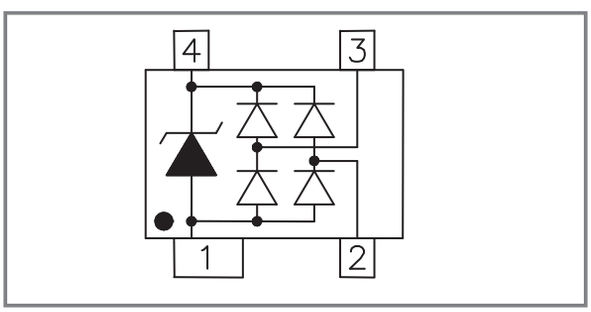


Feature

- 125 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects two I/O lines
- Low Clamping Voltage
- Stand−off Voltage: 5 V
- Low leakage current
- IEC61000-4-2 (ESD) ±20kV (air), ±15kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (Lightning) 5A (8/20μs)

Functional Diagram



Applications

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

Mechanical Data

- JEDEC SOT-143 Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 10.0 Milligrams (Approximate)
- Lead Finish : Lead Free

Mechanical Characteristics

Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20μs waveform)	P_{pp}	125	Watts
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-40 to +125	°C

Electrical Characteristics @ 25℃ Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA;	6.0	--	--	V
Reverse Leakage Current	I_R	V_{RWM}=5.0 V, T=25°C;	--	--	1.0	μA
Junction Capacitance	C_J	V_R= 0V, f = 1MHz;	--	1.2	--	pF
Clamping Voltage	V_C	I_{PP}=1.0A T_P = 8/20μs;	--	--	9.8	V
		I_{PP}=5.0A T_P = 8/20μs;	--	15.0	25.0	V

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

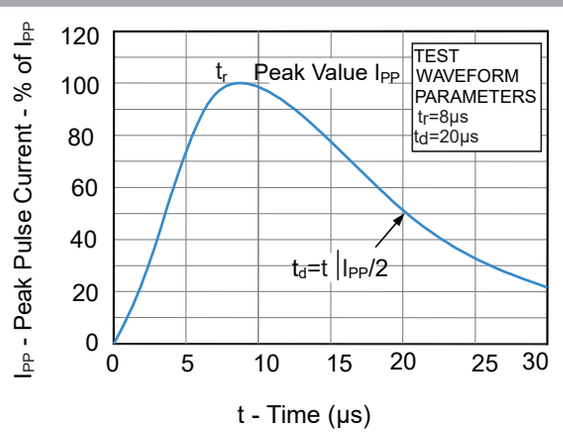


Fig2. Power Rating Derating Curve

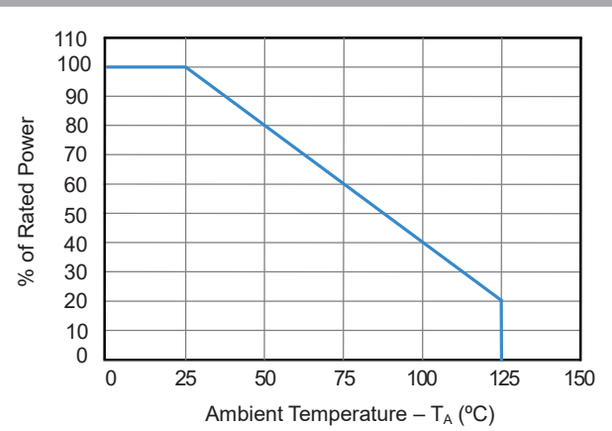
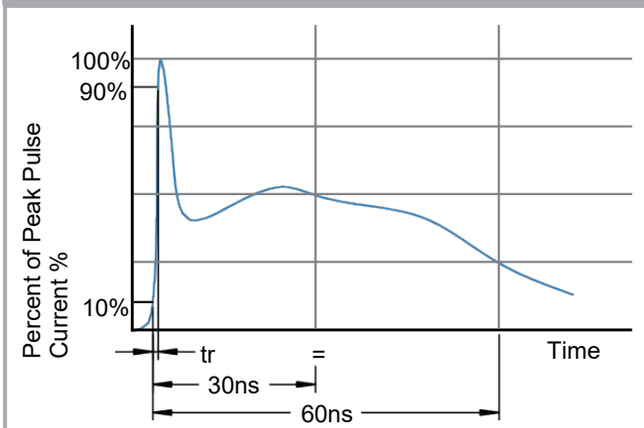
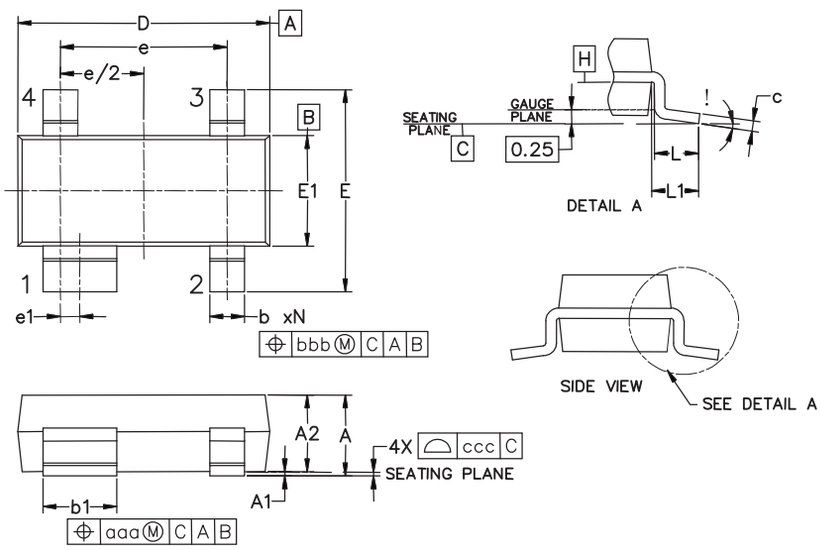


Fig3. ESD Pulse Waveform(according to IEC61000-4-2)

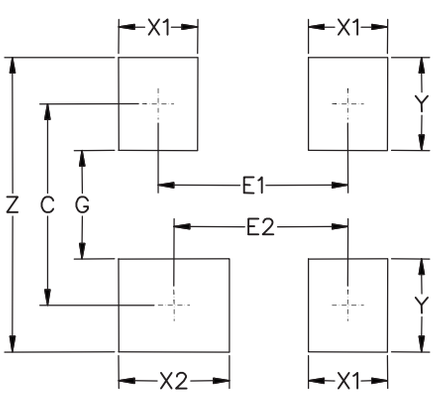


SOT-143 Package Outline & Dimensions



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			1.92BSC		
e1	0.008			0.20BSC		
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		

Soldering Footprint



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

Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD05V14T-LC	SL3	SOT-143	3,000pcs/Reel	7 inch

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