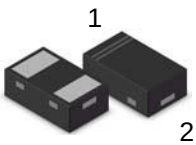
Transient Voltage Suppressors for ESD Protection

General Description

The LESD8Z5.0CT5G 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.

LESD8Z5.0CT5G



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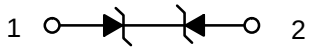


Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 200 Watts @ 8 x 20 _s Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000−4−2 Level 4 ESD Protection
- IEC61000−4−4 Level 4 EFT Protection
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

ORDERING INFORMATION

Device	Marking	Shipping
LESD8Z5.0CT5G	M9	10000/Tape & Reel

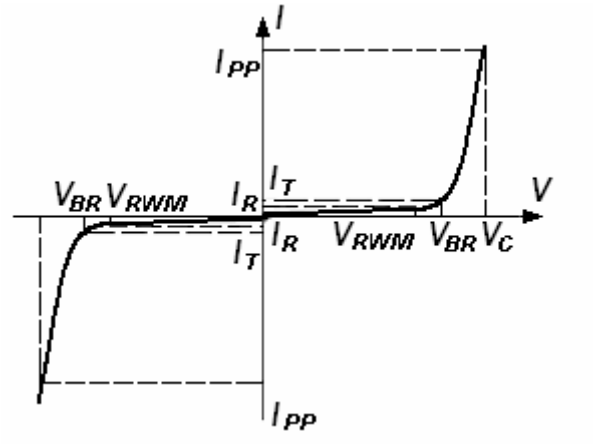
Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20 μ s)	200	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +155	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±15 ±8	KV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	16	KV

LESD8Z5.0CT5G

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Device	V_{RWM} (V)	I_R(uA) @ V_{RWM}	V_{BR} (V)@ I_T (Note 1)		I_T	V_C (V) @ I_{PP}=5 A*	V_C (V) @ Max I_{PP}*	I_{PP} (A)*	P_{PK} (W)*	C (pF)
	Max	Max	Min	Max	mA	Typ	Max	Max	Max	Typ
LESD8Z5.0CT5G	5.0	1	5.5	8	1.0	11.6	18.6	9.4	174	35

*Surge current waveform per Figure 1.

1. V_{BR} is measured with a pluse test current I_T at an ambient temperature of 25℃.

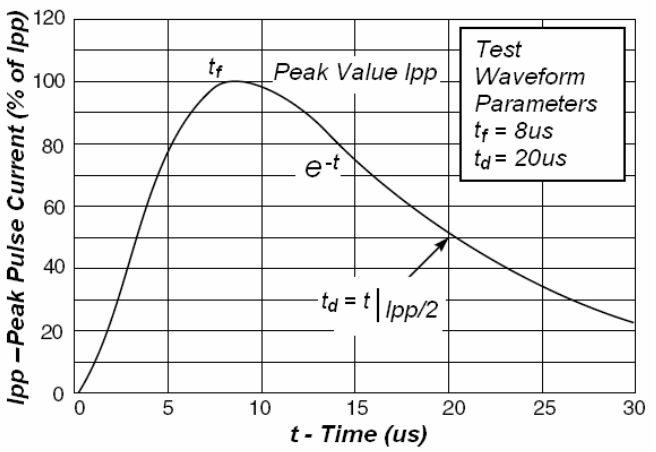


Fig1. Pulse Waveform

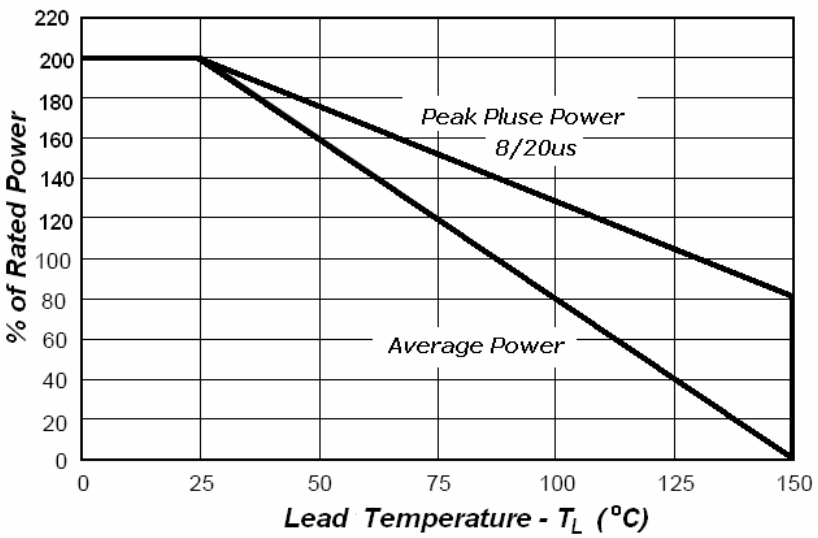


Fig2.Power Derating

Application Note

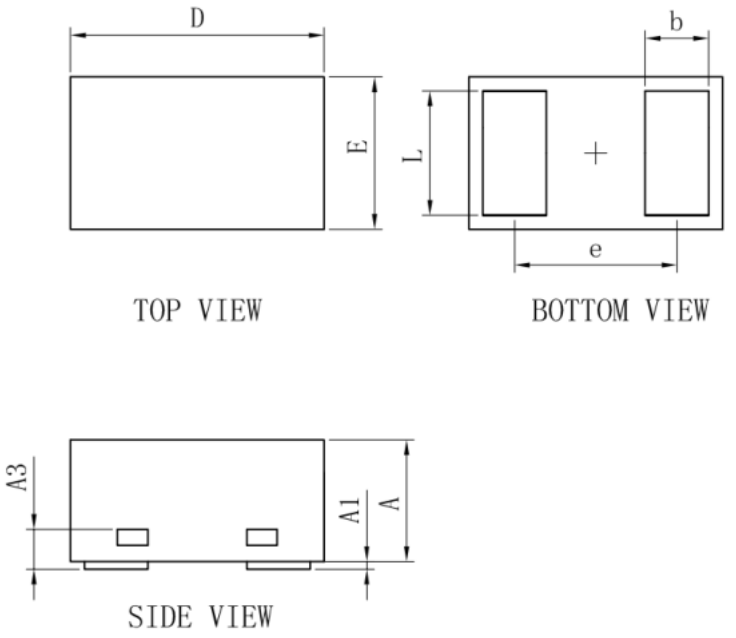
Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

Surface mount TVS offers the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal lines to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The LESD8Z5.0CT5G is the ideal board evel protection of ESD sensitive semiconductor components.

The tiny SOD-882 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.

OUTLINE AND DIMENSIONS

SOD882



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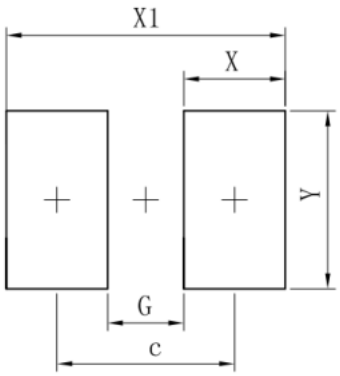
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	–	0.64	–
L	0.44	0.49	0.54
b	0.20	0.25	0.30
A	0.43	0.48	0.53
A1	0	–	0.05
A3	0.127REF.		
All Dimensions in mm			

SOLDERING FOOTPRINT

SOD882



Dimensions	(mm)
c	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70