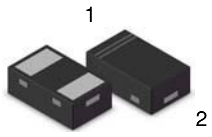
LESD8D12CT5G ESD PROTECTION DIODE

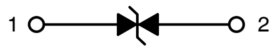
Discription

The LESD8D12CT5G is designed to protect voltage sensitive components from ESD. 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. Because of its small size, it is suited for use in cellular phones, digital cameras and many other portable applications where board space is at a premium.

LESD8D12CT5G



SOD882



Applications

- Cellular phones audio
- Digital cameras
- Portable applications
- Mobile telephone

Features

- Small Body Outline Dimensions: 1.00 mm x 0.60 mm
- Low Body Height: 0.50 mm
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 per Human Body Model
- IEC61000−4−2 Level 4 ESD Protection
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

Ordering information

Device	Marking	Shipping
LESD8D12CT5G	H1	10000/Tape&Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air Contact Contact discharge		±20 ±20	kV kV
Total Power Dissipation on FR-5 Board (Note 1) @ T_A=25℃	PD	200	mW
Junction and Storage Temperature Range	TJ,TSTG	-55 to 150	℃
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	℃

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

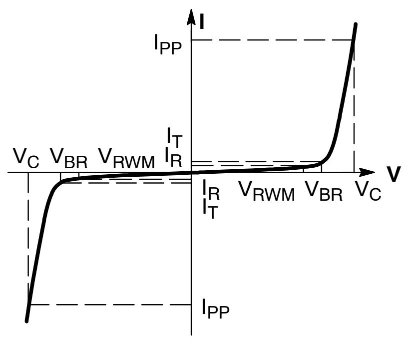
1. FR-5 = 1.0*0.75*0.62 in.

LESD8D12CT5G

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted)

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}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
P_{pk}	Peak Power Dissipation
C	Capacitance @ V_R = 0 and f = 1.0 MHz



Bi–Directional TVS

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted, VF=0.9V Max. @ IF=10Ma for all types)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	13.3	14.5	16	V	I_R = 1mA
Peak Pulse Power(8/20 μs)	P_{PK}			88	W	
Peak Pulse Current (8/20μs)	I_{PP}			4	A	
Reverse Leakage Current	I_R			1	μA	V_{RM}= 12V
Clamping Voltage	V_C			22	V	I_{PP} = 4A(8 x 20μs pulse)
Junction Capacitance	C_J	3.5	6.5	9.5	pF	V_R = 0V, f = 1MHz

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Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

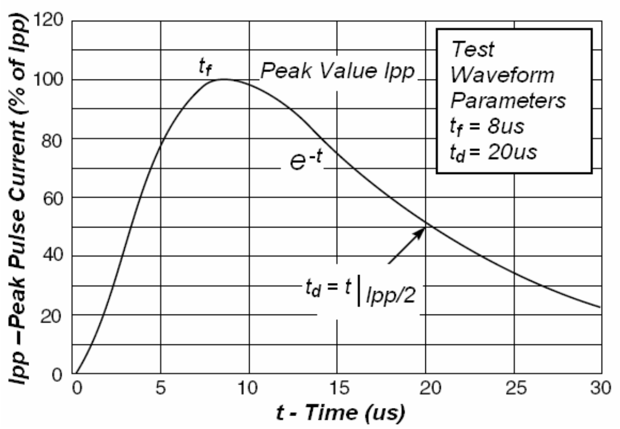

Fig1. Pulse Waveform

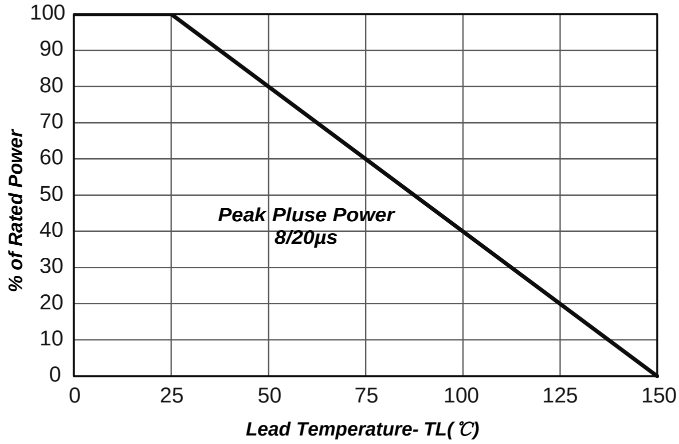

Fig2.Power Derating Curve

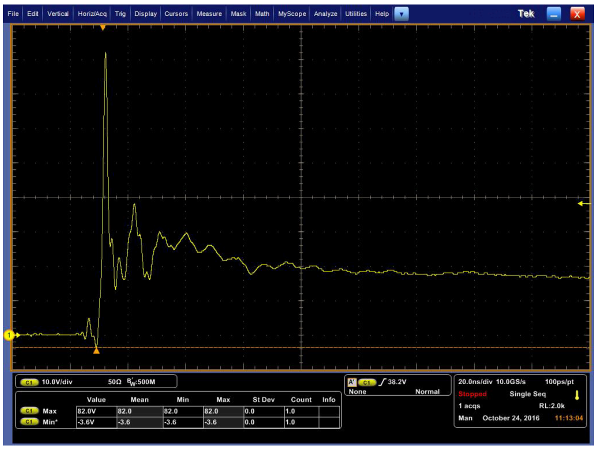

Fig 3 .Positive 8kV contact per IEC61000-4-2

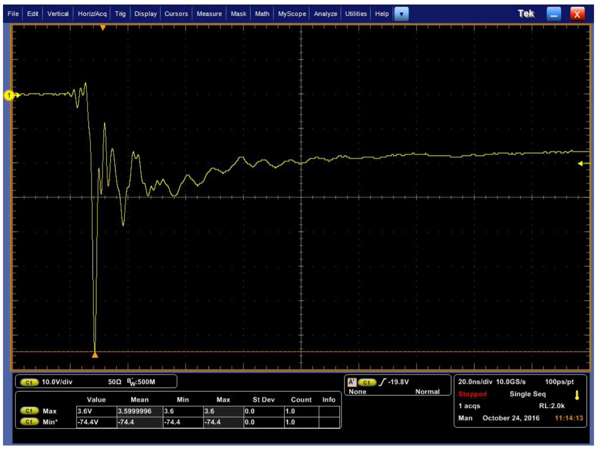

Fig 4 .Negative 8kV contact per IEC61000-4-2

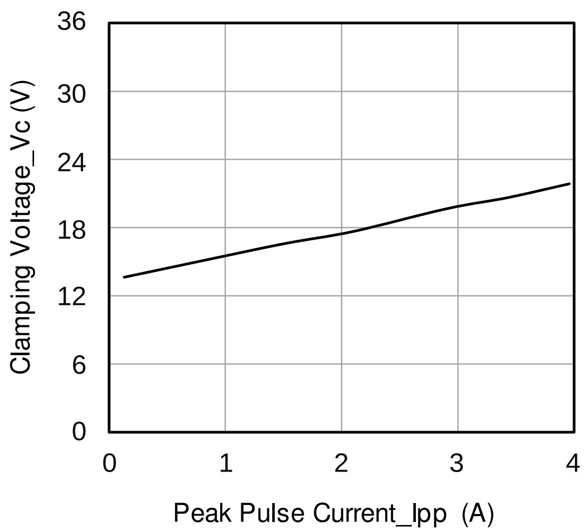

Fig 5 .Clamping Voltage vs. Peak Pulse Current

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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 offer the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal line 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 LESD8D12CT5G is the ideal board evel protection of ESD sensitive semiconductor components.

The tiny SOD882 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 againt ESD.

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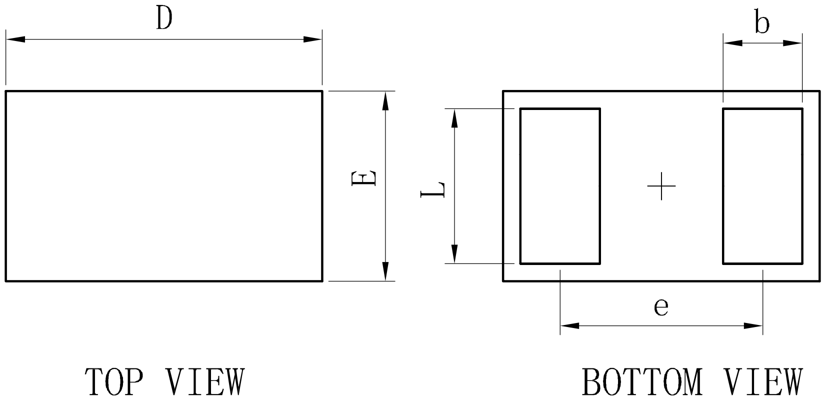
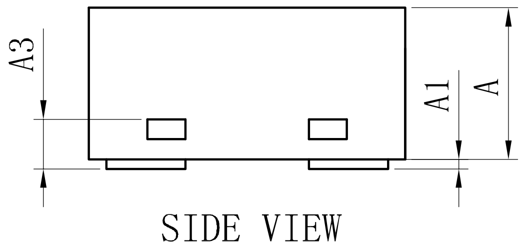
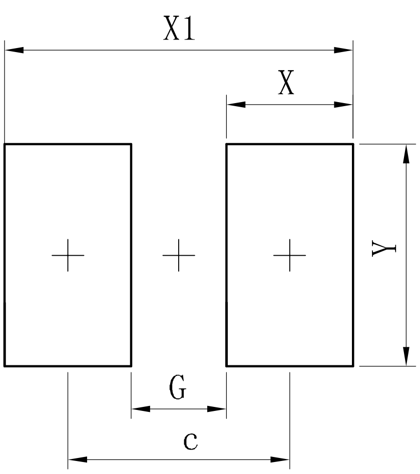
Package Outline Dimension



SOD882			
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			



Suggested Pad layout



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

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