

LESD9D3.3T5G ESD PROTECTION DIODE

Discription

The LESD9D3.3T5G is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

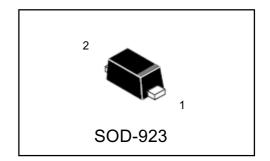
Applications

- I Cellular phones audio
- I MP3 players
- I Digital cameras
- I Portable applicationss
- I mobile telephone

Features

- Small Body Outline Dimensions: 0.039" x 0.024"(1.0 mm x 0.60 mm)
- Low Body Height: 0.017" (0.43 mm) Max
- Stand-off Voltage: 3.3 V 12 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- These are Pb-Free Devices
- We declare that the material of product compliance with RoHS requirements.

LESD9D3.3T5G





Ordering information

Device	Package	Shipping
LESD9D3.3T5G	SOD-923	8000/Tape&Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air Contact Contact discharge		±15 ±8	kV kV
ESD Voltage Per Human Body Model		16	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T_A =25 $^{\circ}$ C	PD	150	Mw
Junction and Storage Temperature Range	TJ,TSTG	-55 to 150	$^{\circ}$
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	$^{\circ}$

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.

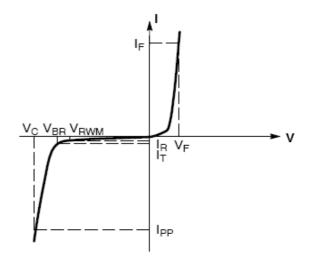


LESD9D3.3T5G

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted)

Symbol	Parameter				
I _{PP}	Maximum Reverse Peak Pulse Current				
Vc	Clamping Voltage @ Ipp				
V _{RWM} Working Peak Reverse Voltage					
I _R	Maximum Reverse Leakage Current @ V _{RWM}				
V _{BR}	Breakdown Voltage @ I _T				
I _T	Test Current				
I _F	Forward Current				
V _F	Forward Voltage @ I _F				
P_{pk}	Peak Power Dissipation				
С	Max. Capacitance @V _R = 0 and f = 1 MHz				



Uni-Directional TVS

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

	,						Ji /	
-	V_{RWM}	I _R	V_{BR}	Ι _Τ	I _{PP}	Vc	P _{PK}	С
	(V)	(µ A)	(V)	(mA)	(A)	(V)	(W)	(pF)
Device		@	@ I _T			@ Max I _{PP}	(8*20 µs)	
		V_{RWM}	(Note 2)		(Note 3)	(Note 3)		
	Max	Max	Min		Max	Max	Тур	Тур
LESD9D3.3T5G	3.3	2.5	5.0	1.0	9.8	10.4	102	80
LESD9D5.0T5G	5.0	1.0	6.2	1.0	8.7	12.3	107	65
LESD9D12T5G	12	1.0	13.5	1.0	5.9	23.7	140	30

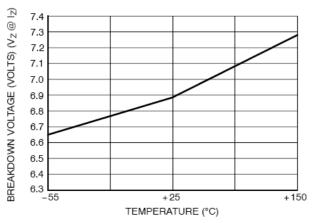
Other voltage available upon request.

- 3. Surge current waveform per Figure 3.



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TYPICAL CHARACTERISTICS



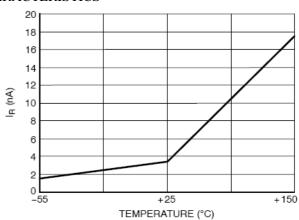


Figure 1. Typical Breakdown Voltage versus Temperature

Fig 2. Typical Leakage Current versus
Temperature

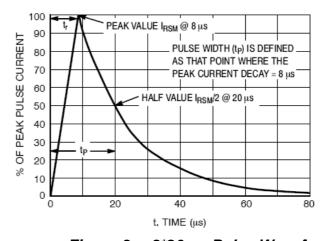
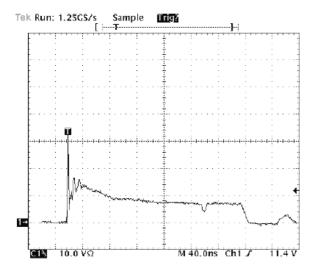
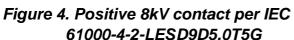


Figure 3. 8*20 µs Pulse Waveform





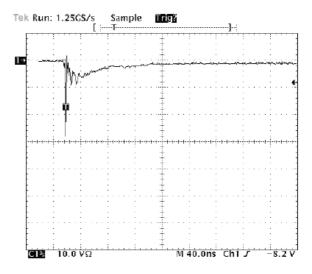
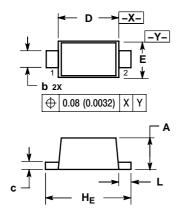


Fig 5. Negative 8kV contact per IEC 61000-4-2-LESD9D5.0T5G



LESD9D3.3T5G

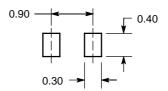
SOD-923



- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETERS.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

	MIL	LIMETE	RS	INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
С	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

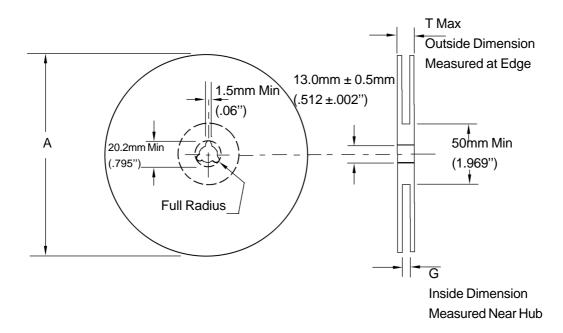
SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS



EMBOSSED TAPE AND REEL DATA FOR DISCRETES



Siz	ze	A Max	G	T Max
8 m	nm	330mm (12.992")	8.4mm+1.5mm, -0.0 (.33"+.059", -0.00)	14.4mm (.56")

Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)

Humidity: 30 to 80 RH (40 to 60 is preferred)

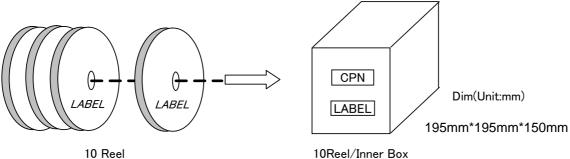
Recommended Period: One year after manufacturing

(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to

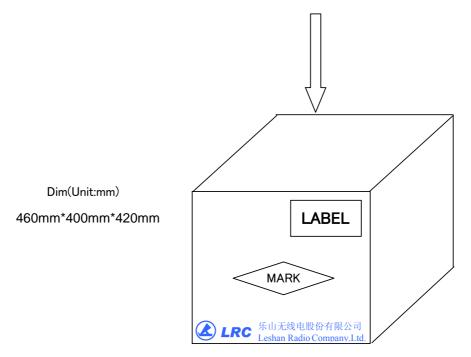
this limitation)



Shipment Specification



3000PCS/Reel 8000PCS/Reel (SOT-723,SOD-723,SOD-923) 10Reel/Inner Box 30KPCS/Inner Box 80KPCS/Inner Box (SOT-723,SOD-723,SOD-923)



12 Inner Box/Carton

360KPCS/Carton 960KPCS/Carton (SOT-723,SOD-723,SOD-923)