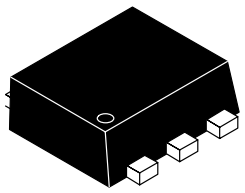
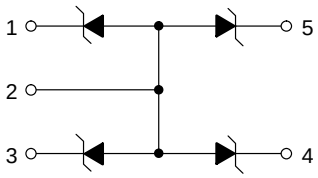
Quad Array for ESD Protection

LESDA6V8V5T1G

This quad monolithic silicon voltage suppressor is designed for applications requiring transient overvoltage protection capability. It is intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment, and other applications. Its quad junction common anode design protects four separate lines using only one package. These devices are ideal for situations where board space is at a premium.



SOT-553



Specification Features

- SOT-553 Package Allows Four Separate Unidirectional Configurations
- Low Leakage < 1 μA @ 3 Volt
- Breakdown Voltage: 5.6 Volt - 6.8 Volt @ 1 mA
- ESD Protection Meeting IEC61000-4-2 - Level 4
- We declare that the material of product compliance with RoHS requirements.

Mechanical Characteristics

- Void Free, Transfer-Molded, Thermosetting Plastic Case
- Corrosion Resistant Finish, Easily Solderable
- Package Designed for Optimal Automated Board Assembly
- Small Package Size for High Density Applications
- 100% Lead Free, MSL1 @ 260°C Reflow Temperature

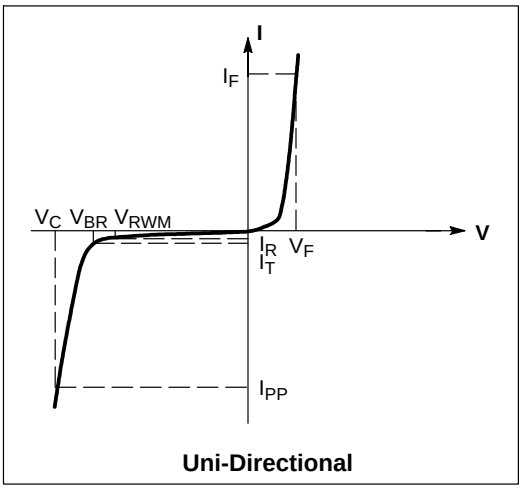
ORDERING INFORMATION

Device	Package	Shipping
LESDA5V6V5T1G	SOT-553	3000/Tape & Reel
LESDA6V2V5T1G	SOT-553	3000/Tape & Reel
LESDA6V8V5T1G	SOT-553	3000/Tape & Reel

LESDA6V8V5T1G

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
ΘV_{BR}	Maximum Temperature Coefficient of V_{BR}
I_F	Forward Current
V_F	Forward Voltage @ I_F
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}



Uni-Directional

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Value	Unit
Peak Power Dissipation (8 X 20 μs @ T_A = 25°C) (Note 1)	P_{PK}	100	W
Steady State Power - 1 Diode (Note 2)	P_D	300	mW
Thermal Resistance Junction to Ambient Above 25°C, Derate	$R_{\theta JA}$	370 2.7	°C/W mW/°C
Maximum Junction Temperature	T_{Jmax}	150	°C
Operating Junction and Storage Temperature Range	T_J T_{stg}	-55 to +150	°C
ESD Discharge MIL STD 883C - Method 3015-6 IEC1000-4-2, Air Discharge IEC1000-4-2, Contact Discharge	V_{PP}	16 16 9	kV
Lead Solder Temperature (10 seconds duration)	T_L	260	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Device	Breakdown Voltage V_{BR} @ 1 mA (Volts)			Leakage Current I_{RM} @ V_{RM}		V_C Max @ I_{PP}		Typ Capacitance @ 0 V Bias (Note 3)	Max V_F @ I_F = 200 mA
	Min	Nom	Max	V_{RWM}	I_{RWM} (μA)	V_C (V)	I_{PP} (A)	(pF)	(V)
LESDA5V6V5T1G	5.32	5.6	5.88	3.0	1.0	10.5	10	90	1.3
LESDA6V2V5T1G	5.89	6.2	6.51	4.0	0.5	11.5	9.0	80	1.3
LESDA6V8V5T1G	6.46	6.8	7.14	4.3	0.1	12.5	8.0	70	1.3

1. Non-repetitive current per Figure 1.
2. Only 1 diode under power. For all 4 diodes under power, P_D will be 25%. Mounted on FR-4 board with min pad.
3. Capacitance of one diode at f = 1 MHz, V_R = 0 V, T_A = 25°C

LESDA6V8V5T1G

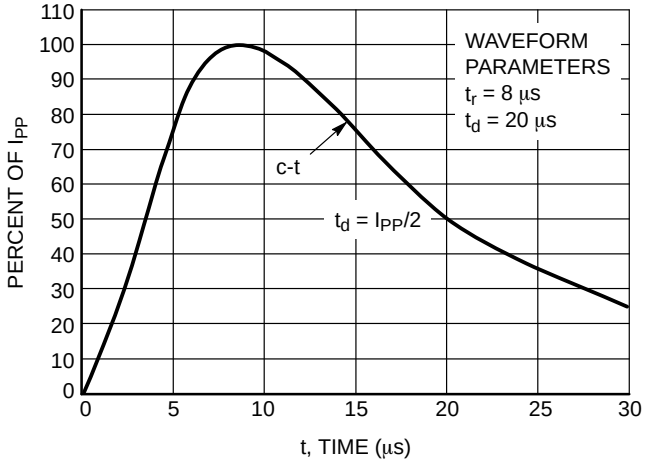


Figure 1. Pulse Waveform

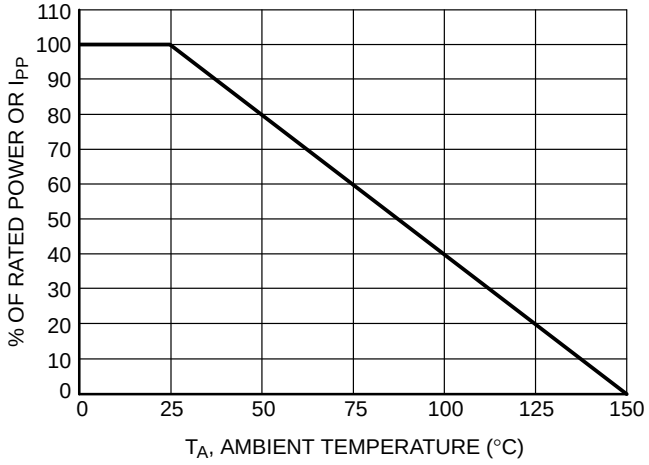


Figure 2. Power Derating Curve

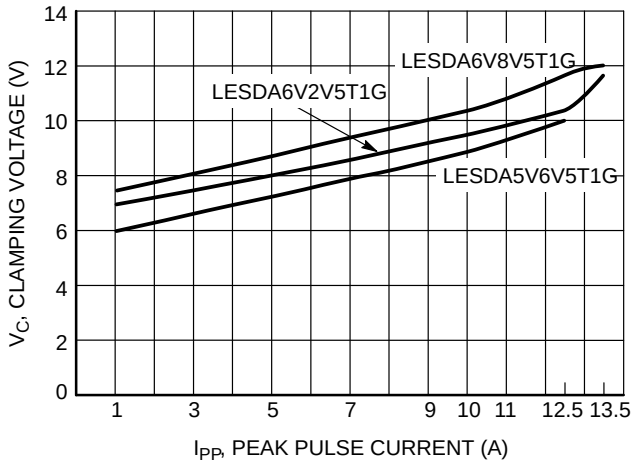


Figure 3. Clamping Voltage versus Peak Pulse Current

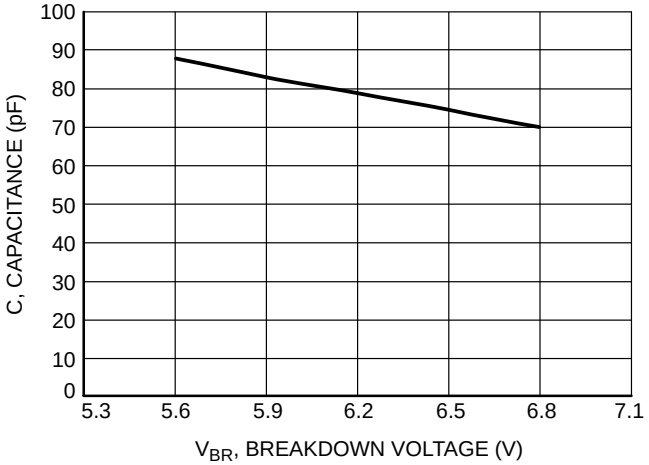
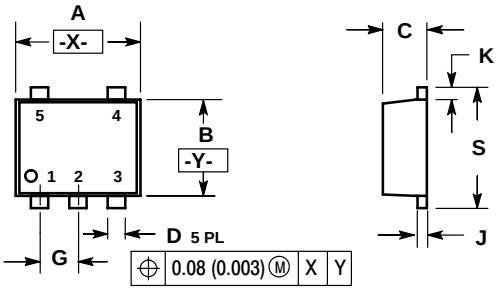


Figure 4. Typical Capacitance

LESDA6V8V5T1G

PACKAGE DIMENSIONS

SOT-553, 5-LEAD



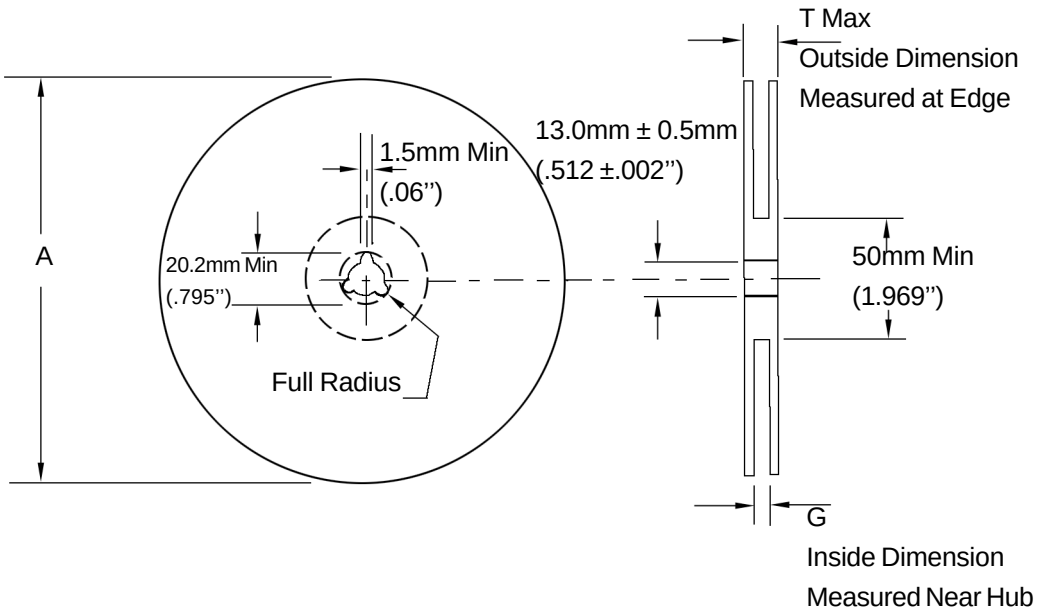
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

STYLE 1:
PIN 1. BASE 1
2. EMITTER 1/2
3. BASE 2
4. COLLECTOR 2
5. COLLECTOR 1

STYLE 2:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE

EMBOSSED TAPE AND REEL DATA
FOR DISCRETES



Size	A Max	G	T Max
8 mm	178.0mm (7.0")	8.4mm+1.5mm, -0.0 (.33"+.039", -0.00)	10.9mm (.43")

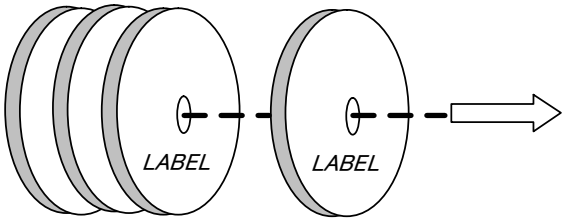
Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

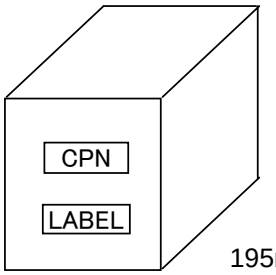
Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)
Humidity: 30 to 80 RH (40 to 60 is preferred)
Recommended Period: One year after manufacturing
(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)

Shipment Specification



10 Reel

3000PCS/Reel
8000PCS/Reel (SOT-723,SOD-723,SOD-923)



Dim(Unit:mm)

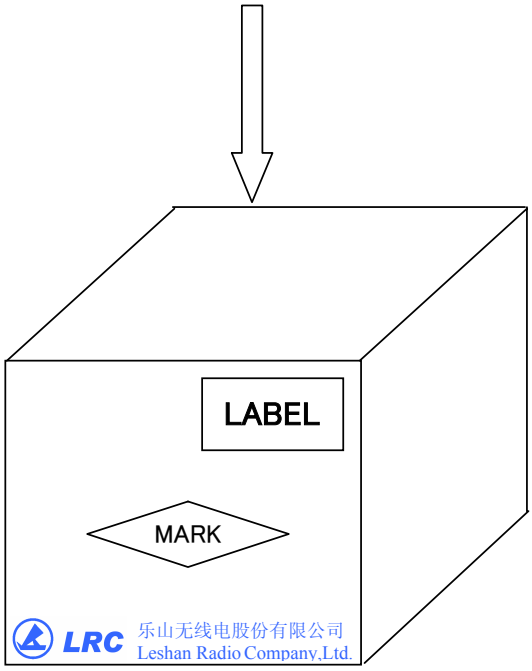
195mm*195mm*150mm

10Reel/Inner Box

30KPCS/Inner Box
80KPCS/Inner Box (SOT-723,SOD-723,SOD-923)

Dim(Unit:mm)

460mm*400mm*420mm



12 Inner Box/Carton

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