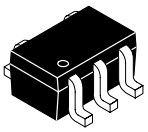
Low Capacitance Quad Array for ESD Protection

LESDA6V1W5T1G
S-LESDA6V1W5T1G

General Description

The LESDA6V1W5T1G is a monolithic suppressor designed to protect components connected to data and transmission lines against ESD. The device clamp the voltage just above the logic level supply for positive transients, and to a diode drop below ground for negative transients.



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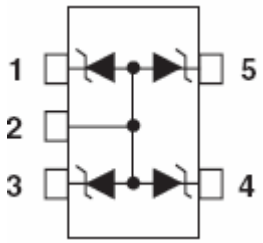

Features

- 4 Unidirectional Transil functions
- Breakdown voltage:
- V_{BR} = 6.1 V min. and 25 V min.
- Low leakage current: < 1 mA
- Very small PCB area < 4.2 mm^2 typically
- High ESD protection level: up to 25 kV
- High integration
- Pb-Free Package is Available
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

Complies with the following standards

IEC61000-4-2

Level 4 16 kV (air discharge)
9 kV(contact discharge)

MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

ORDERING INFORMATION

Device	Marking	Shipping
LESDA6V1W5T1G S-LESDA6V1W5T1G	WE	3000/Tape & Reel

Applications

- Computers
- Printers
- Communication systems
- Cellular phones handsets and accessories
- Wireline and wireless telephone sets
- Set top boxes

Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter		Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20μs)	LESDA6V1W5T1G	150	W
T_L	Maximum lead temperature for soldering during 10s		260	°C
T_{stg}	Storage Temperature Range		-40 to +125	°C
T_{op}	Operating Temperature Range		-40 to +125	°C

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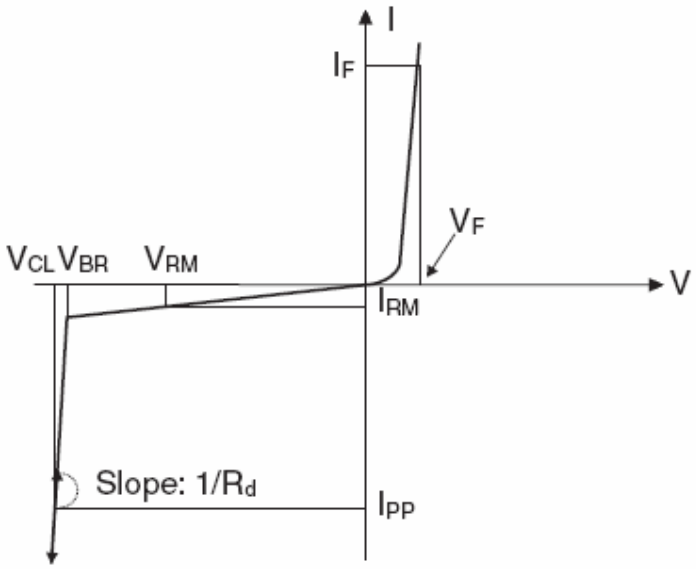
Electrical Parameter

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_{RM}	Leakage current
I_{PP}	Peak pulse current
I_R	Reverse current
I_F	Forward current
αT	Voltage temperature coefficient
V_F	Forward voltage drop
C	Capacitance
R_d	Dynamic



Electrical Characteristics

Part Numbers	V_{BR}		I_R	V_{RM}	I_{RM}	V_F	I_F	R_d	α T	C
	Min.	Max.				Max.		Typ.(1)	Max.(2)	Typ. 0v bias
	v	v	mA	v	μA	v	mA	Ω	10^{-4}/°C	pF
LESDA6V1W5T1G	6.1	7.2	1	5	1	1.25	200	0.61	6	90

1. Square pulse I_{PP}=15A,t_p=2.5μs 2. $V_{BR}=aT*(T_{amb}-25°C)*V_{BR}(25°C)$

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Typical Characteristics

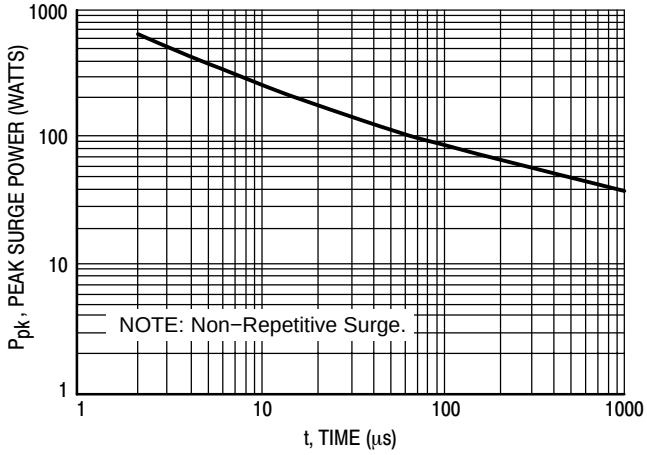

Figure 1. Pulse Width

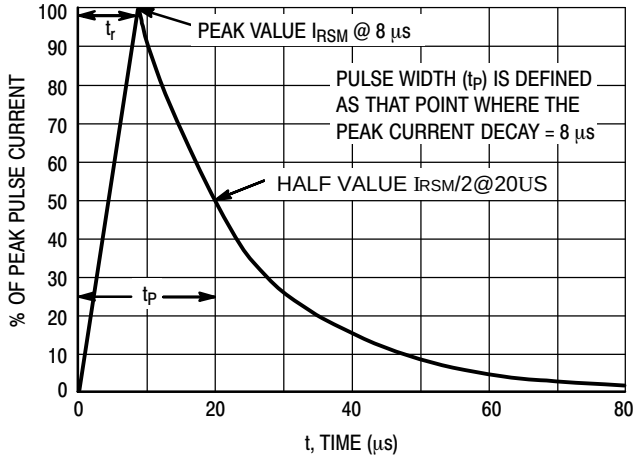

Figure 2. 8 x 20 μs Pulse Waveform

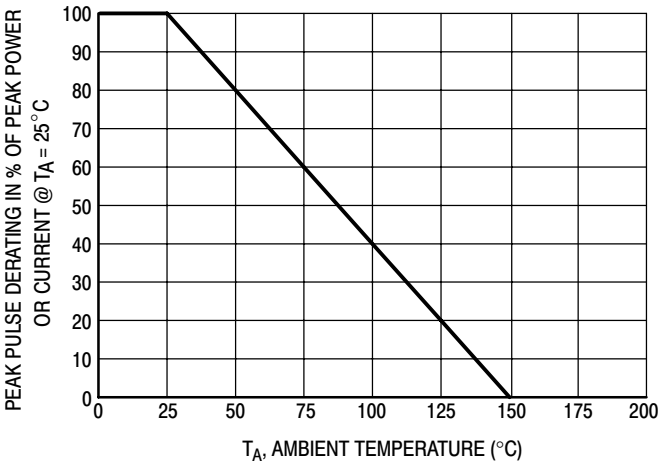

Figure 3. Pulse Derating Curve

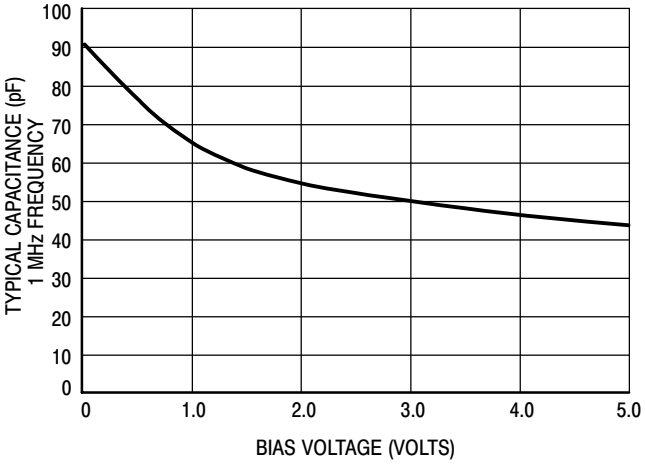

Figure 4. Capacitance

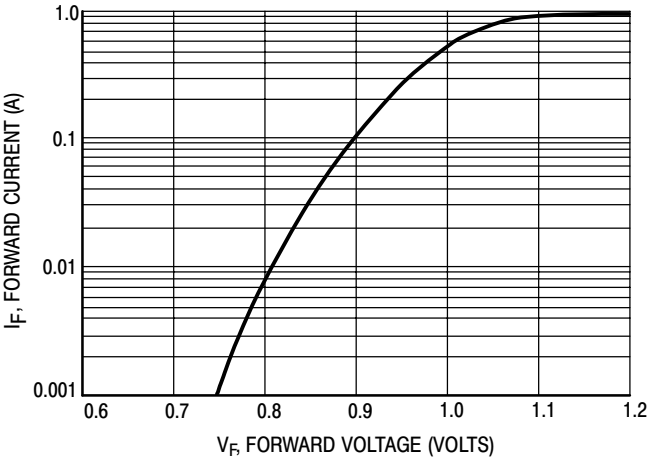

Figure 5. Forward Voltage

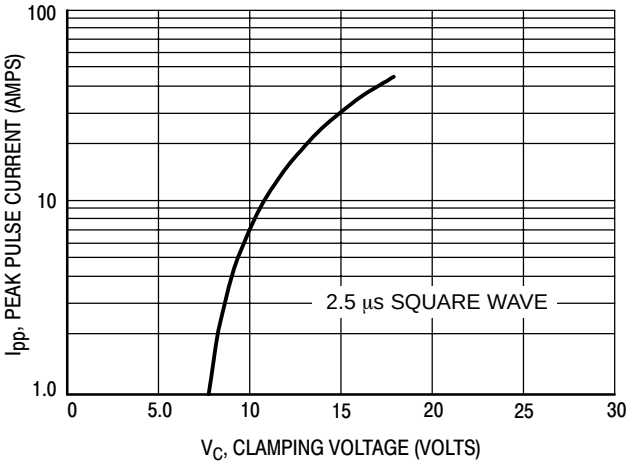

Figure 6. Clamping Voltage versus Peak Pulse Current (Reverse Direction)

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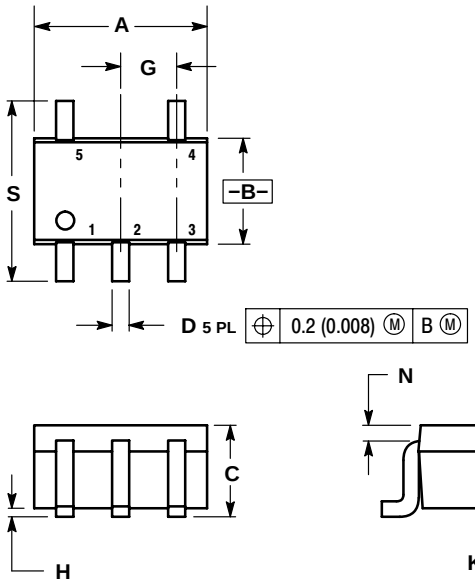

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419A−01 OBSOLETE. NEW STANDARD 419A−02.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

SOLDERING FOOTPRINT*