

LESD8L5.0N3T6G 2-Line ESD protection

ESD Protection Diodes with Ultra-Low Capacitance

The ESD8L is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, 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 low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications.

Specification Features:

- Ultra Low Capacitance 0.8 pF
- Low Clamping Voltage
- Small Body Outline Dimensions:
0.039" x 0.024" (1.00 mm x 0.60 mm)
- Low Body Height: 0.020" (0.5 mm)
- Stand-off Voltage: 5 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic

Epoxy Meets UL 94 V-0

LEAD FINISH: 100% Matte Sn (Tin)

QUALIFIED MAX REFLOW TEMPERATURE: 260°C

Device Meets MSL 1 Requirements

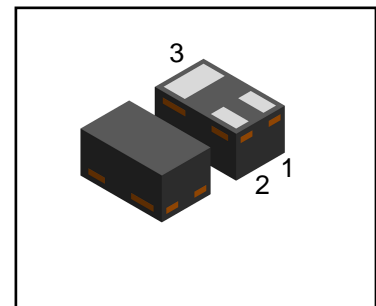
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact Air		±10 ±16	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T _A = 25°C	P _D	250	mW
Storage Temperature Range	T _{stg}	-55 to +150	°C
Junction Temperature Range	T _J	-55 to +125	°C
Lead Solder Temperature - Maximum (10 Second Duration)	T _L	260	°C

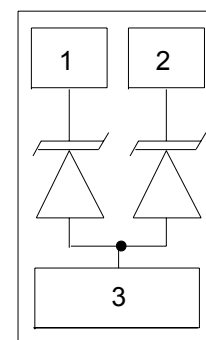
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

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Ordering information

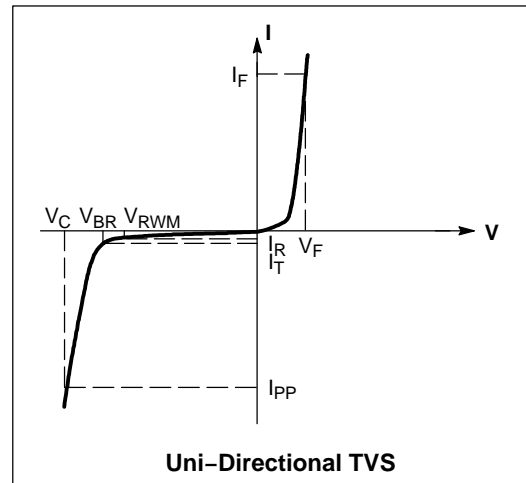
Device	Marking	Shipping
LESD8L5.0N3T6G	Q2	10000/Tape&Reel

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ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ 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
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ $V_R = 0$ and $f = 1.0$ MHz



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.0$ V Max. @ $I_F = 10$ mA for all types)

Device	Device Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T mA	C (pF)		V_C (V) @ $I_{PP} = 1$ A (Note 3)	V_C Per IEC61000-4-2 (Note 4)
		Max	Max	Min		Tpy	Max	Max	
LESD8L5.0N3T6G	Q2	5.0	1.0	6	1.0	0.7	1	9.8	Figures 1 and 2 See Below

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .
- For test procedure see Figures 3.
- Surge current waveform per Figure 4.

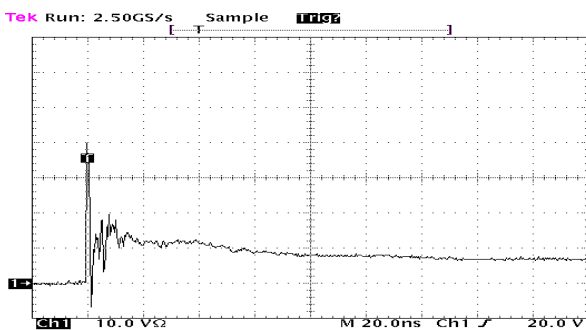


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

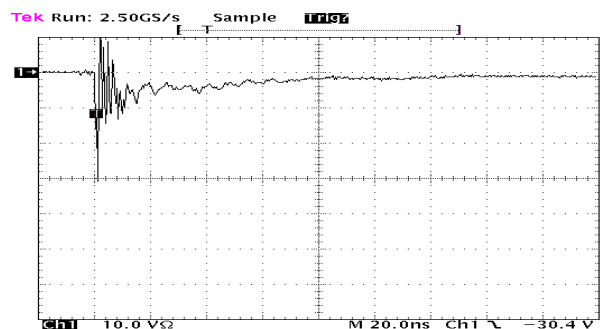
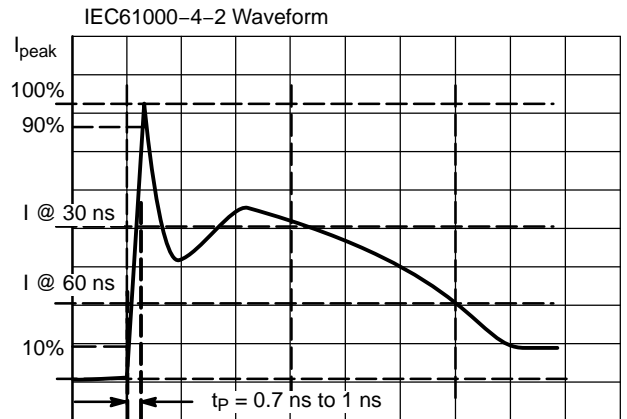
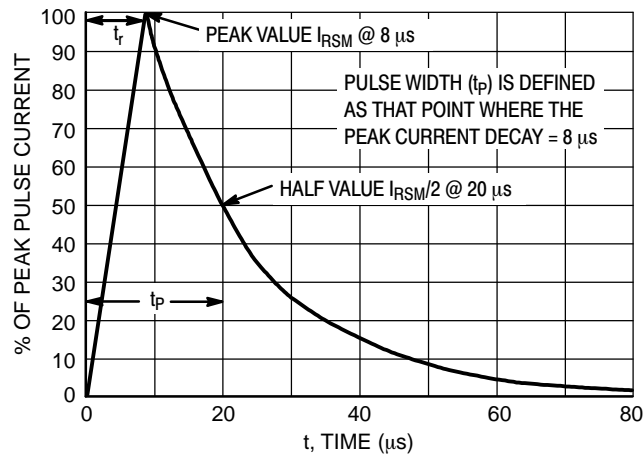


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

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IEC 61000-4-2 Spec.

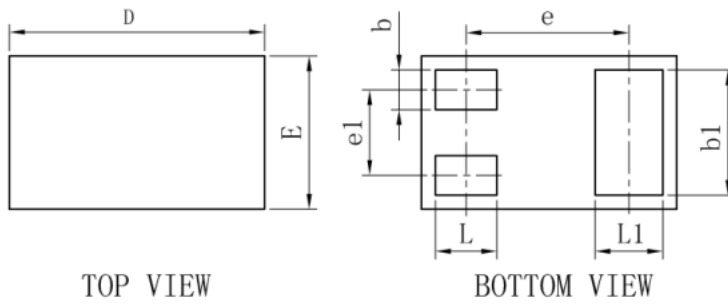
Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8


Figure 3. IEC61000-4-2 Spec

Figure 4. 8 X 20 μs Pulse Waveform

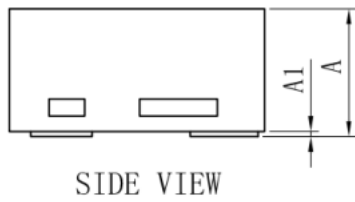
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OUTLINE AND DIMENSIONS

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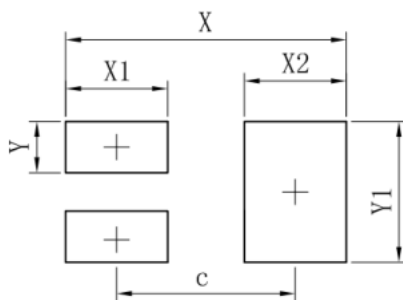


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Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	-	0.64	-
e1	-	0.34	-
L	0.19	0.24	0.29
L1	0.22	0.27	0.32
b	0.10	0.15	0.20
b1	0.44	0.49	0.54
A	0.43	0.48	0.53
A1	0	-	0.05
All Dimensions in mm			



SOLDERING FOOTPRINT

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Dimensions	(mm)
c	0.70
X	1.10
X1	0.40
X2	0.40
Y	0.20
Y1	0.55