

Transient Voltage Suppressors ESD Protection Diodes with Ultra-Low Capacitance

The ESD5L 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.

●FEATURES

- 1) Ultra Low Capacitance 0.5 pF
- 2) Low Clamping Voltage
- 3) Small Body Outline Dimensions
- 4) Stand-off Voltage: 5 V
- 5) Low Leakage
- 6) Response Time is Typically < 1.0 ns
- 7) IEC61000-4-2 Level 4 ESD Protection
- 8) We declare that the material of product compliant with RoHS requirements and Halogen Free.

●MECHANICAL CHARACTERISTICS:

CASE: Void-free, transfer-molded, thermosetting plastic Epoxy Meets UL 94 V-0
LEAD FINISH: 100% Matte Sn (Tin)

●DEVICE MARKING AND RESISTOR VALUES

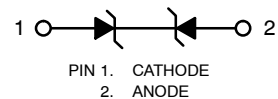
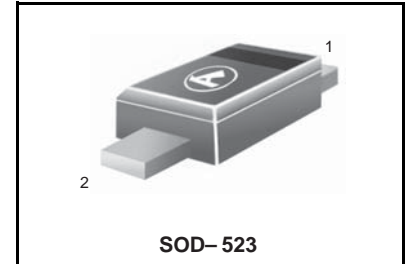
Device	Marking	Shipping
LESD5L5.0CT1G	L5	3000/Tape&Reel
LESD5L5.0CT5G	L5	8000/Tape&Reel

●MAXIMUM RATINGS(T_a = 25°C)

Parameter	Symbol	Limits	Unit
IEC 61000-4-2 (ESD) Contact Air		±8	kV
Total Device Dissipation, FR-5 Board (Note 1) @ T _A = 25°C	P _D	200	mW
Junction Temperature Range	T _J	-55 ~ +125	°C
Storage temperature Range	T _{stg}	-55 ~ +150	°C
Lead Solder Temperature - Maximum (10 Second Duration)	T _L	260	°C

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

LESD5L5.0CT1G

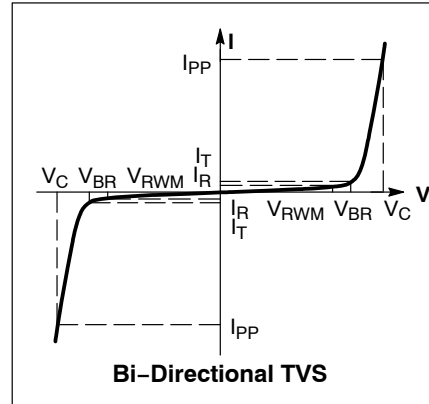


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ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ 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 ($T_a = 25^\circ\text{C}$)

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	VC
		Max	Max	Min		Typ	Max	Max	
LESD5L5.0CT1G	L5	5	1	5.4	1	0.5	0.9	12.9	Per IEC61000-4-2 See Below

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .

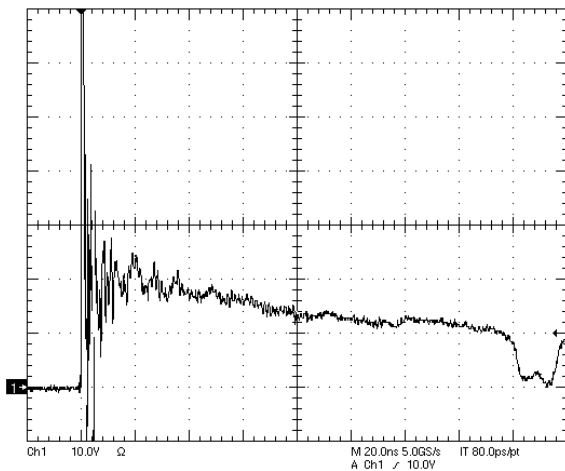


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

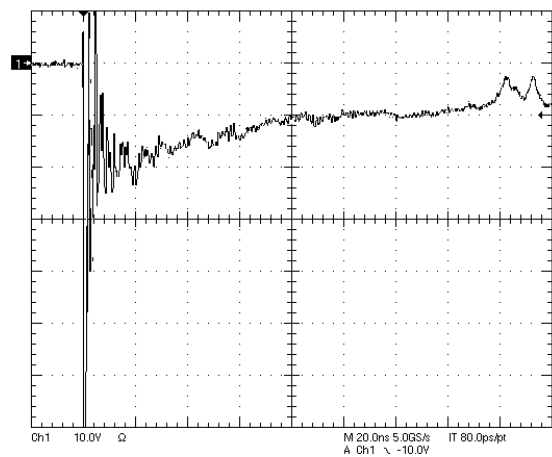
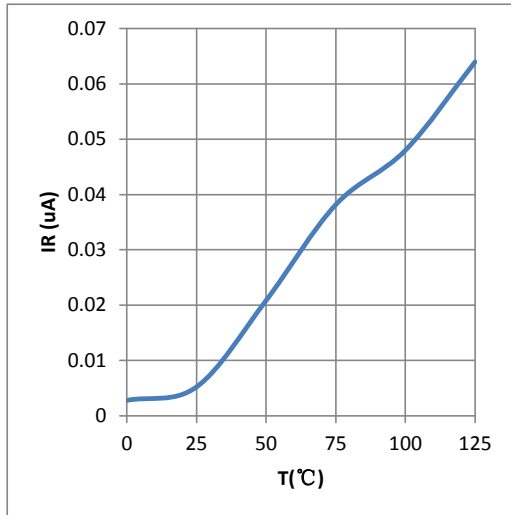
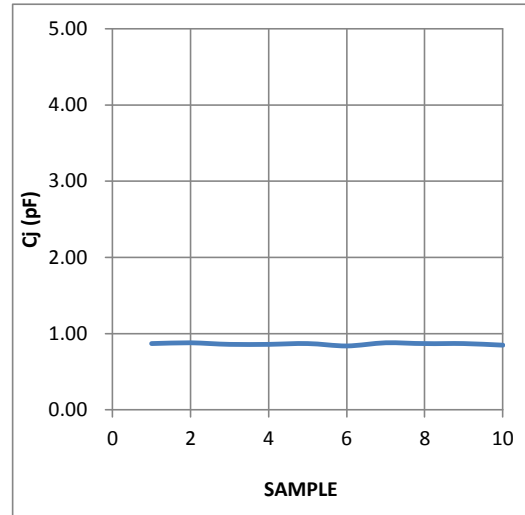
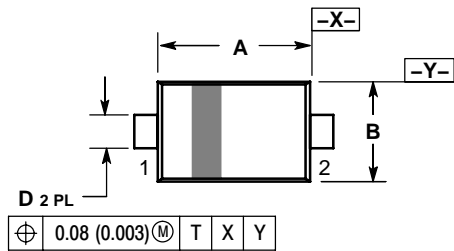


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

LESD5L5.0CT1G**ELRCTRICAL CHARACTERISTICS CURVES****Fig 3. Reverse character****Fig 4. Capacitance character**

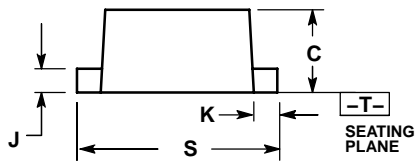
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- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067



SOLDERING FOOTPRINT*

