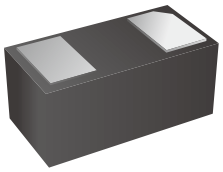
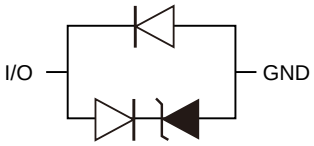
LTE10N05A01LG

Ultra Low Capacitance ESD Protection Diode

Features





- Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±20kV (Air)
  ±20kV (Contact)
  IEC 61000-4-4 (EFT) 40A (5/50 ns)
  Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Ultra-small package (1.0mm×0.6mm×0.5mm)
- Protects one data, control line
- Low capacitance: 0.4pF (Typical)
- Low leakage current
- Low clamping voltage
- Lead free in comply with EU RoHS 011/65/EU directives

Mechanical Data

- Case:DFN1006
- Flammability Rating: UL 94V-0

Applications

- Serial ATA
- Desktops, Servers and Notebooks
- Cellular Phones
- MDDI Ports
- USB Data Line Protection
- Display Ports
- Digital Visual Interfaces (DVI)

Ordering Information

Part Number	Marking	Shipping	Reel
LTE10N05A01LG-TR10	5L	10000PCS Tape&Reel	7 inchs

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	±20 ±20	kV
P_{PP}	Peak Pulse Power (8/20μs)	60	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

Electrical Characteristics (Ta=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	6.0			V
I_R	Reverse Leakage Current	V_{RWM} = 5V			100	nA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs			10	V
		I_{PP} = 4A, t_p = 8/20μs			15	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		0.4	0.5	pF

Characteristics Curve

Fig.1 Power Derating Curve

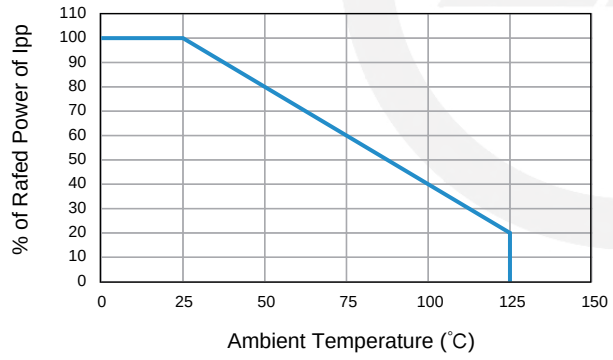


Fig.2 Clamping Voltage vs Peak Pulse Current

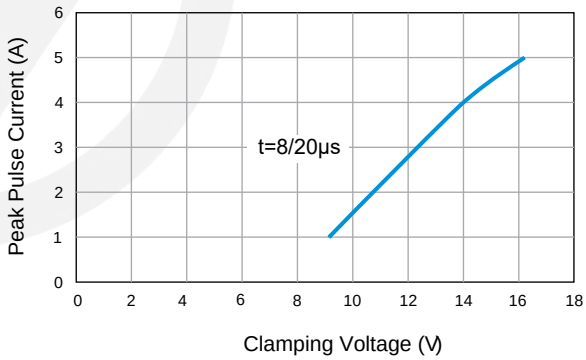


Fig.3 Voltage Sweeping

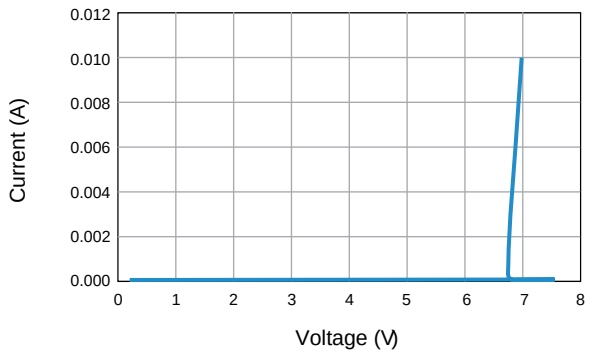


Fig.4 Voltage vs Capacitance

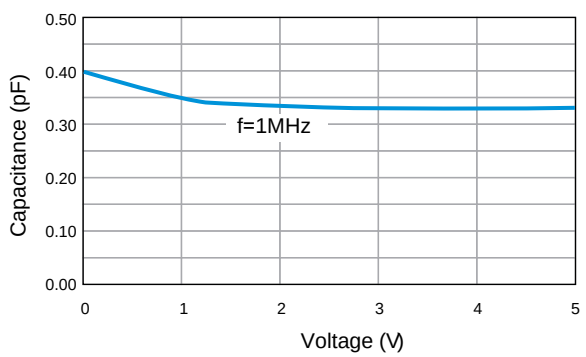


Fig.5 ESD Clamping
(+8kv Contact per IEC 61000-4-2)

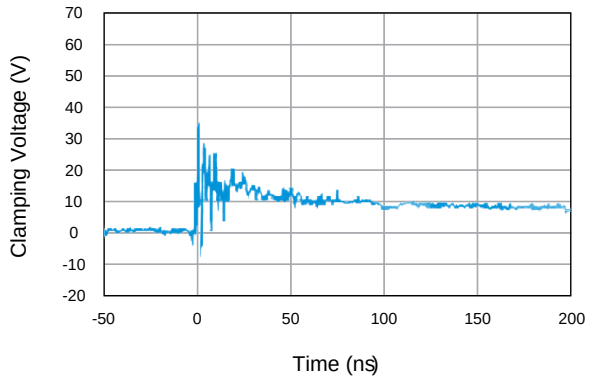
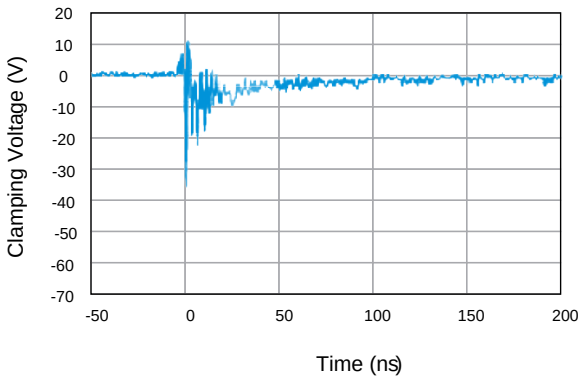
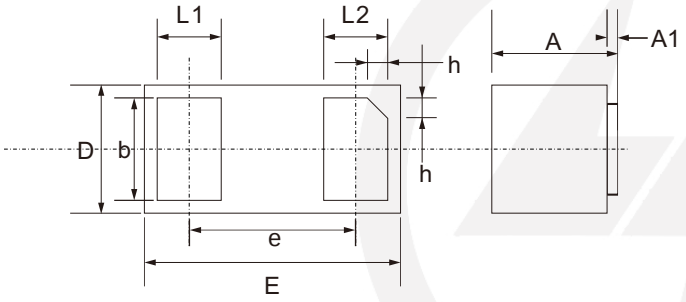


Fig.6 ESD Clamping
(-8kv Contact per IEC 61000-4-2)



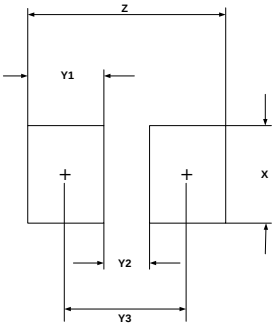
DFN-1006 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
D	0.550	0.650
E	0.950	1.050
L1	0.200	0.300
L2	0.200	0.300
b	0.450	0.550
e	0.650 TYP.	
A	0.450	0.550
A1	0.000	0.050
h	0.070	0.170

DFN-1006 Suggested Pad Layout

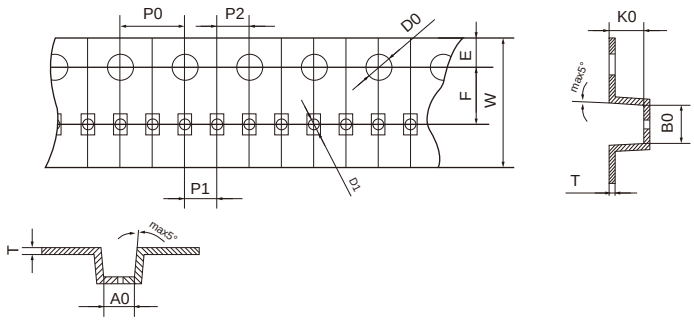


SYM	DIMENSIONS
	MILLIMETERS
X	0.60
Y1	0.50
Y2	0.30
Y3	0.80
Z	1.30

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm
3.The pad layout is for reference purpose only.

Carrier Tape Dimensions

Unit：mm

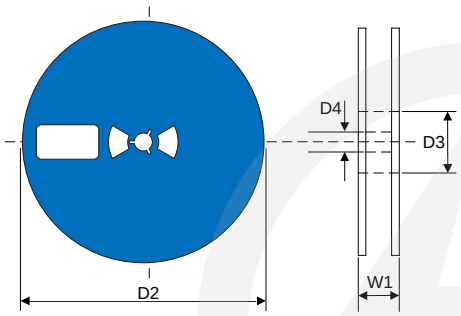


Symbol	Spec	Symbol	Spec
A0	0.68±0.04	T	0.20±0.03
B0	1.12±0.04	E	1.75±0.10
K0	0.60±0.03	F	3.50±0.05
P0	4.00±0.10	D0	1.55±0.05
P1	2.00±0.05	D1	$0.50^{+0.1}_{-0}$
P2	2.00±0.05	W	$8.00^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

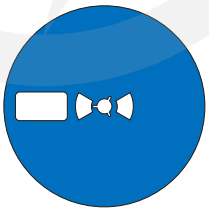


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 10000PCS	

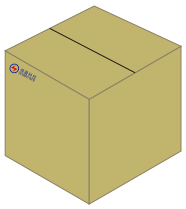
Packaging

DFN1006

10000PCS/Reel

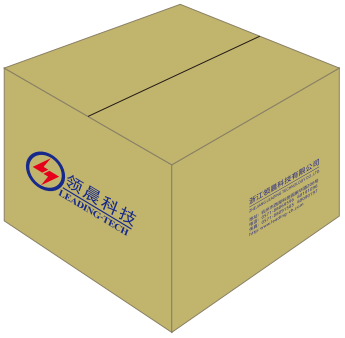


15Reel/Inner Box
150KPCS/Inner Box



Dim(Unit:mm)
210mm*208mm*203mm

4 Boxs per carton
600 KPCS per carton

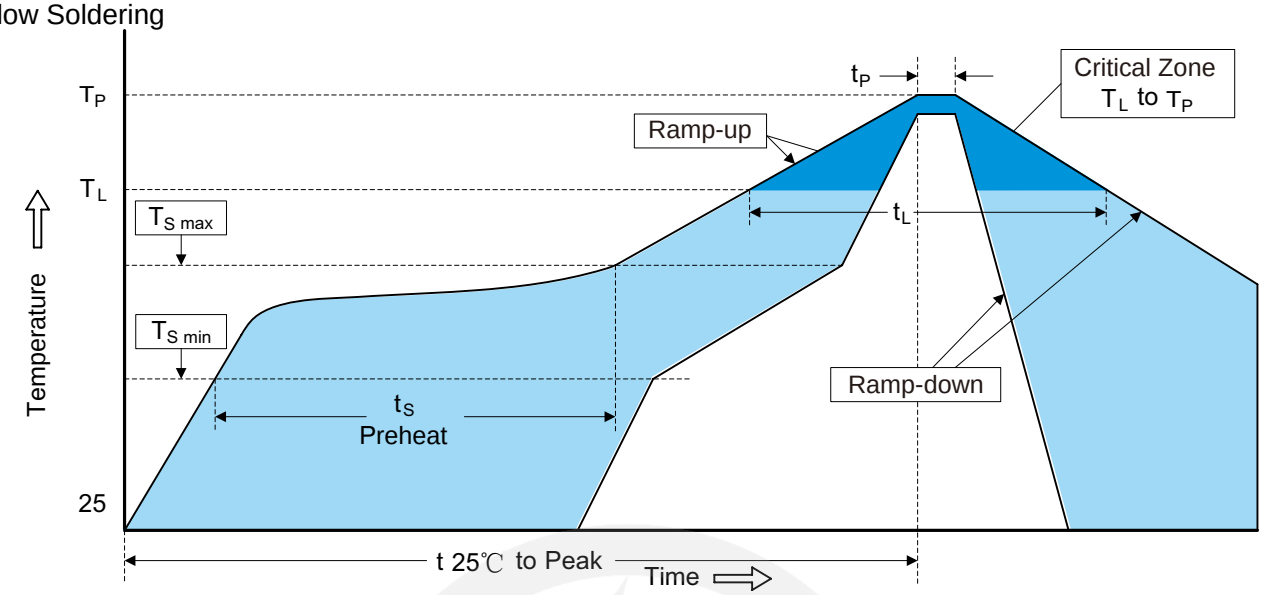


Dim(Unit:mm)
440mm*440mm*230mm

7 inchs Reel

Recommended Soldering Conditons

Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision content	Revision Reason	Revision Person	Note
01	2024.03.16	2024.03.16	3.0	New File	/	Ding	