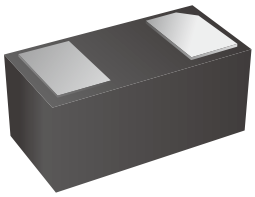
LTE10N05C01LV

1-Line Ultra Low Capacitance Bi-directional TVS Diode

Features



- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±25kV
  - – IEC61000-4-5 (Lightning) 5A (8/20μs)
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: DFN1006
- Case Material: “Green” Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

Ordering Information

Part Number	Marking	Shipping	Reel
LTE10N05C01LV-TR10	2V	10000PCS Tape&Reel	7 inchs

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±25	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V
Clamping Voltage	V_C			10	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			16	V	I_{PP} = 5A (8 x 20μs pulse)
Junction Capacitance	C_J		0.3		pF	VR = 0V, f = 1MHz

Characteristic Curves

Fig.1 Junction Capacitance vs Reverse Volatage

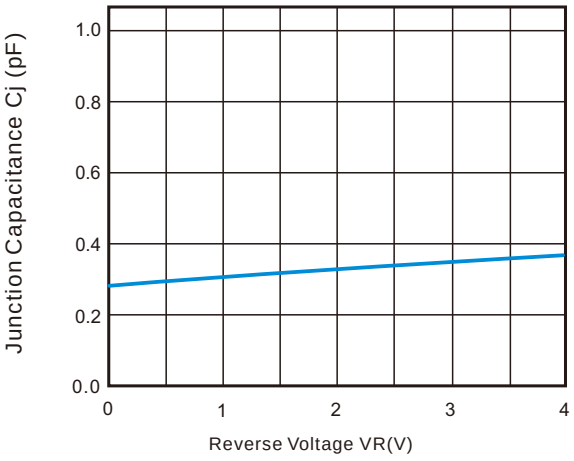


Fig.2 Peak Pulse Power vs Pulse Time

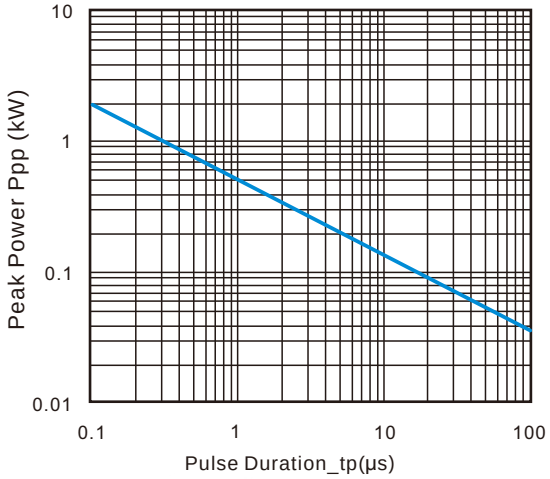


Fig.3 Clamping Voltage vs Peak Pulse Current(tp=8/20μs)

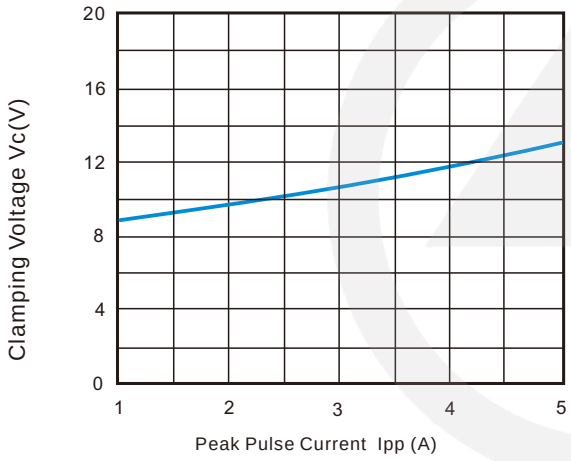


Fig.4 Power Derating Curve

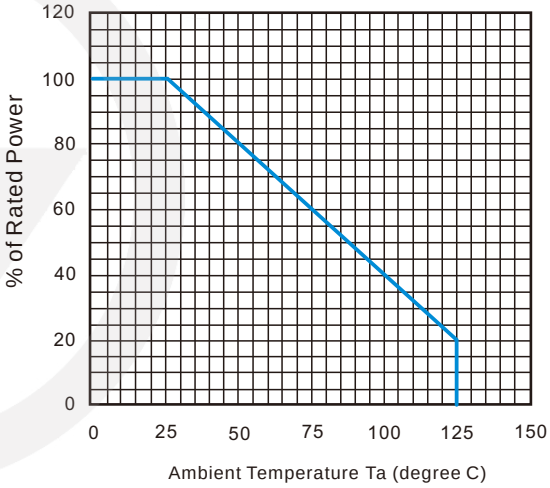


Fig.5 TLP Curve

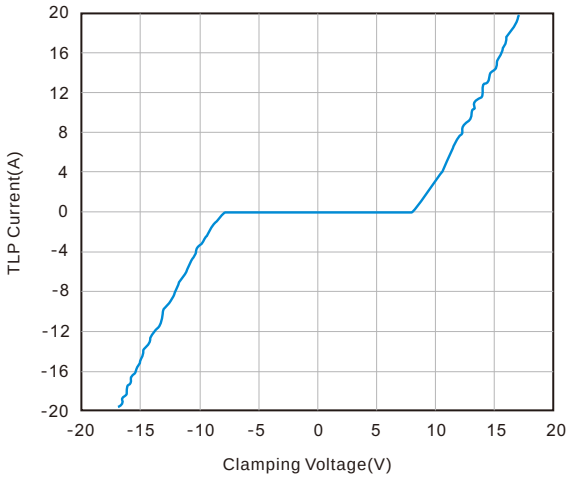
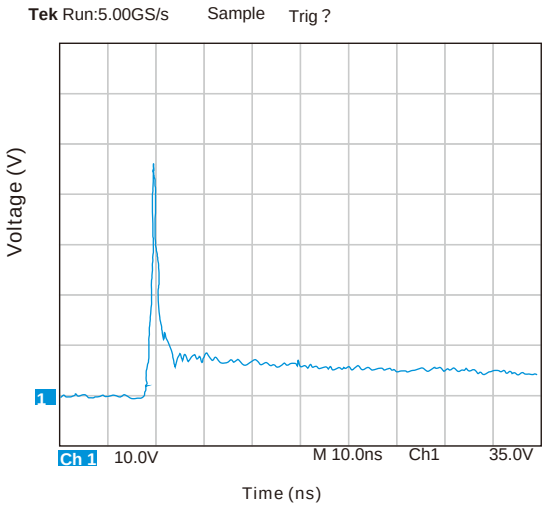
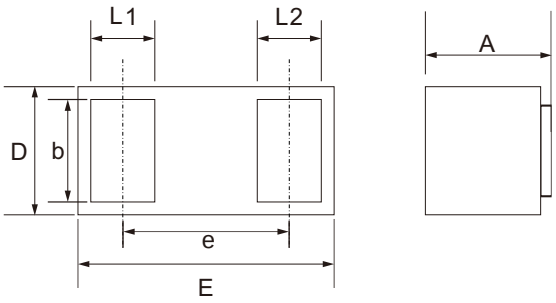


Fig.6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2



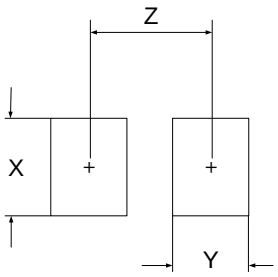
DFN1006 Package Outline



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

DFN1006 Suggested Pad Layout

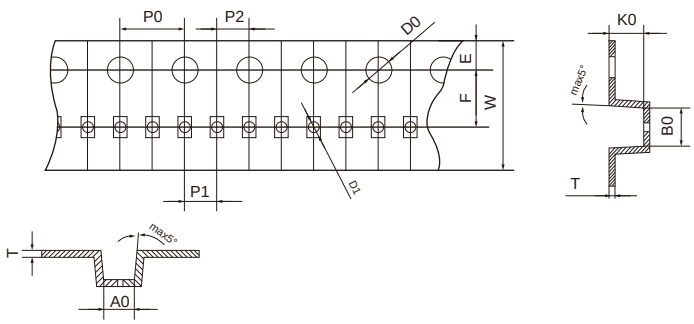


SYM	DIMENSIONS
	MILLIMETERS
X	0.50
Y	0.50
Z	0.90

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

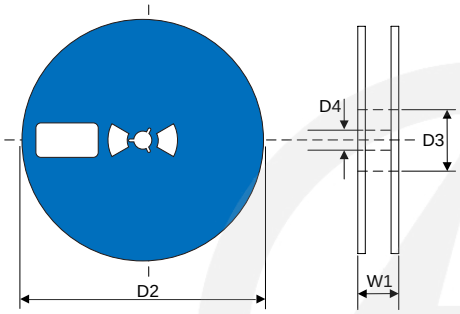


Symbol	Spec	Symbol	Spec
A0	0.68±0.04	T	0.20±0.03
B0	1.12±0.04	E	1.75±0.10
K0	0.60±0.03	F	3.50±0.05
P0	4.00±0.10	D0	1.55±0.05
P1	2.00±0.05	D1	$0.50^{+0.1}_{0}$
P2	2.00±0.05	W	$8.00^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

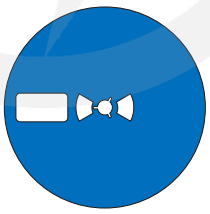


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 10000PCS	

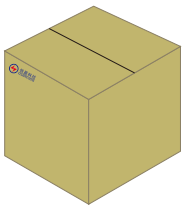
Packaging

DFN1006

10000PCS/Reel

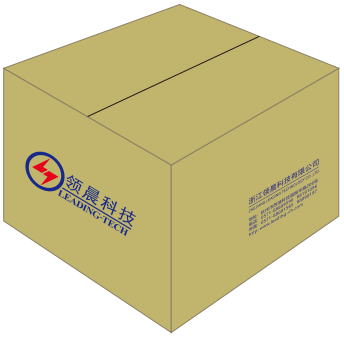


15Reel/Inner Box
150KPCS/Inner Box



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

4 Boxs per carton
600 KPCS per carton

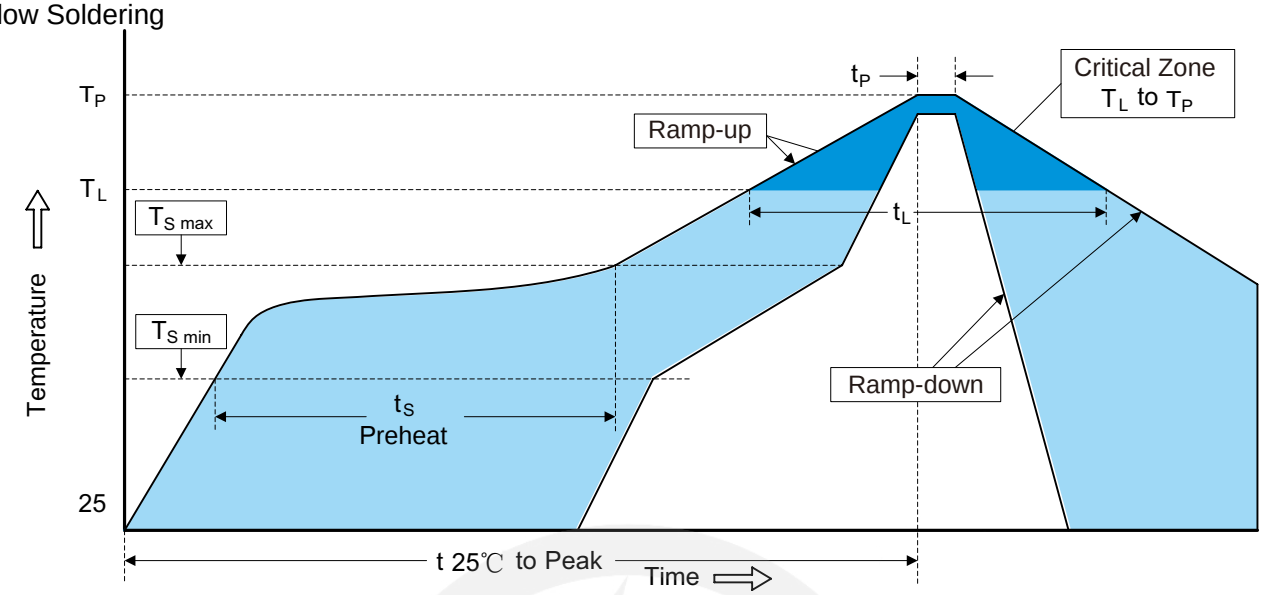


Dim(Unit:mm)
440mm*440mm*230mm

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	2024.09.10	2024.09.10	3.0	New File	/	Ding	