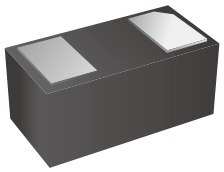
ESD Protection Diddes

Features



- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 72W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- Protecting one Bi-directional lines
- Capacitance: 0.35pF Typ
- Lead free in comply with EU RoHS 011/65/EU directives

Applications

- MP3 Players
- Battery Protection
- Vbat pin for Mobile Device
- Mobile Phones
- Power Line Protection
- Hand Held portable Applications

Ordering Information

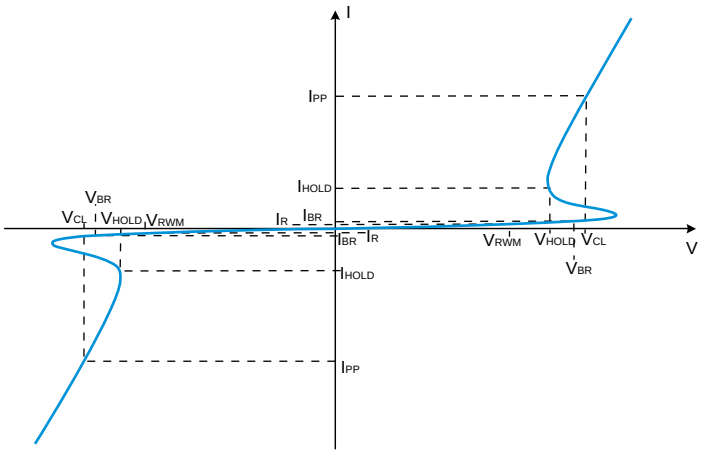
Part Number	Marking	Shipping	Reel
LTE10N05C01LB-TR10	JJ	10000PCS Tape&Reel	7 inchs

Absolute Maximum Rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min	Max	Unit
Peak pulse power (tp=8/20us)	P_{pk}		72	W
Peak pulse current (tp=8/20us)	I_{PP}		6	A
ESD (IEC61000-4-2 air discharge)	V_{ESD}		±30	kV
ESD (IEC61000-4-2 contact discharge)	V_{ESD}		±30	kV
Junction temperature	T_J		125	˚C
Operating temperature	T_{OP}	-40	85	˚C
Storage temperature	T_{STG}	-55	150	˚C
Lead temperature	T_L		260	˚C

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_{BR}	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_{CL}	Clamping Voltage @ I_{PP}
V_{HOLD}	Reverse holding voltage
I_{HOLD}	Reverse holding current



Eletrical Characteristics

At T_A = 25℃ unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	5.5			V
Reverse Leakage Current	I_R	V_{RWM}=5V			0.1	uA
Clamping Voltage	V_C	I_{PP}=6A; tp=8/20us		10	12	V
Junction Capacitance	C_J	V_R=0V; f=1MHz		0.35	0.5	pF

Characteristics Curve

Fig.1 8/20μs waveform per IEC61000-4-5

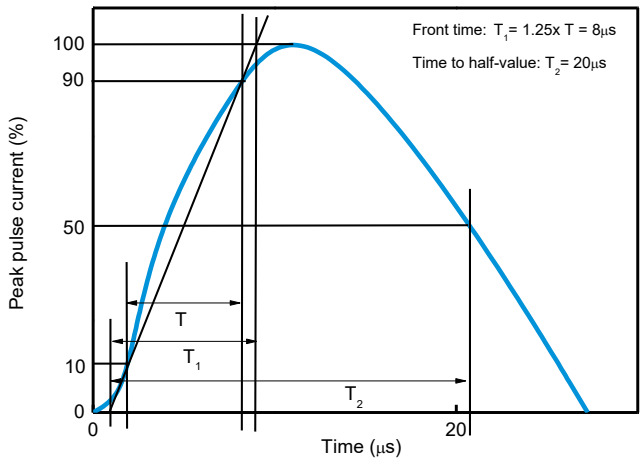


Fig.2 Contact discharge current waveform per IEC61000-4-2

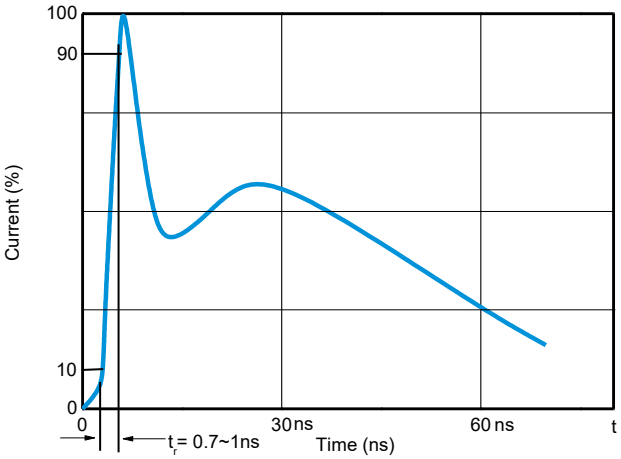


Fig.3 Clamping voltage vs Peak pulse current

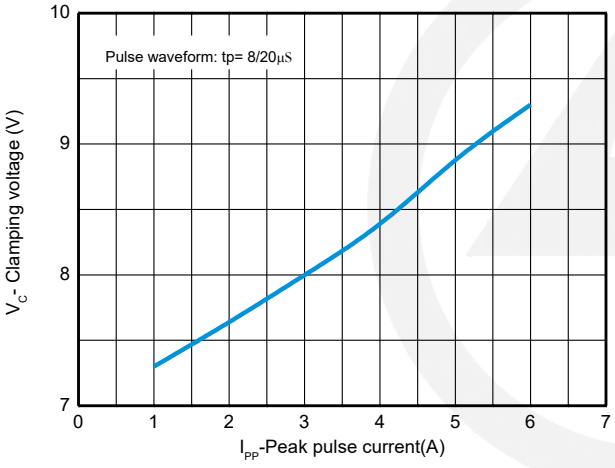


Fig.4 Capacitance vs Reverse voltage

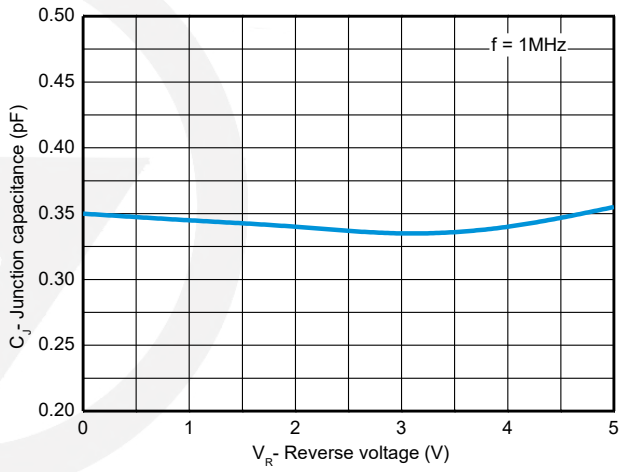


Fig.5 Non-repetitive peak pulse power vs Pulse time

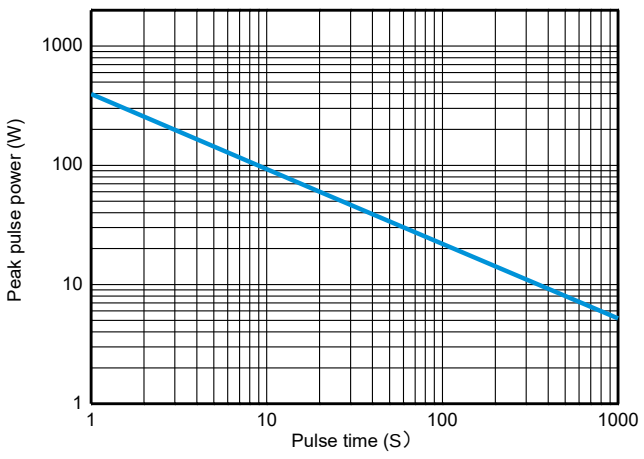
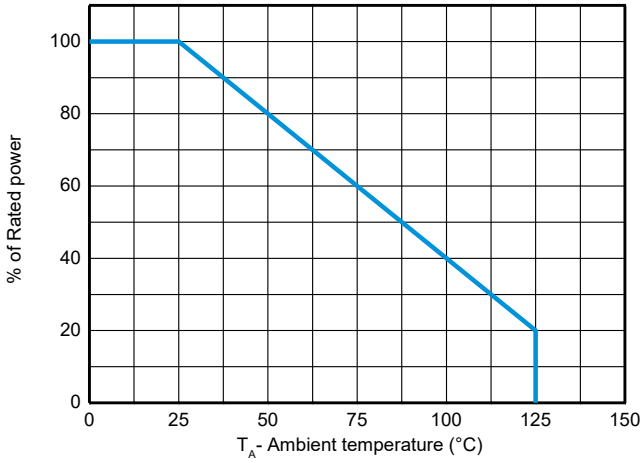
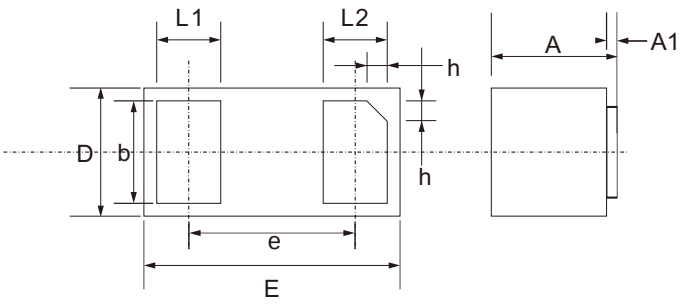


Fig.6 Power derating vs Ambient temperature



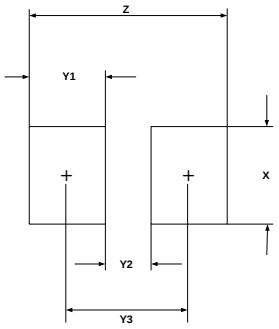
DFN-1006 Package Outline



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



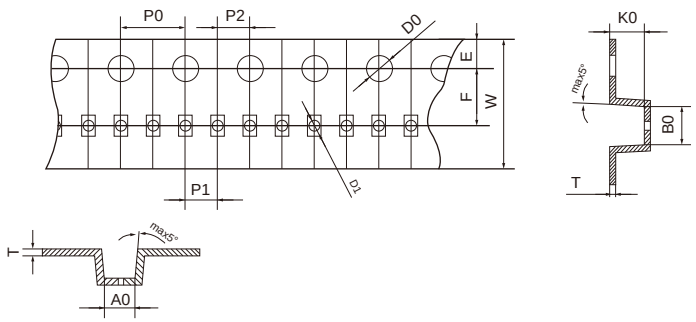
SYM	DIMENSIONS
	MILLIMETERS
X	0.60
Y1	0.50
Y2	0.30
Y3	0.80
Z	1.30

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

LTE10N05C01LB

Carrier Tape Dimensions

Unit：mm

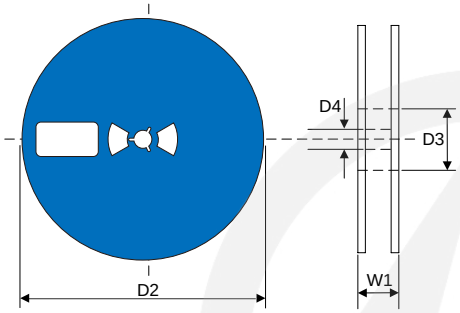


Symbol	Spec	Symbol	Spec
A0	0.68±0.04	T	0.20±0.03
B0	1.12±0.04	E	1.75±0.10
K0	0.60±0.03	F	3.50±0.05
P0	4.00±0.10	D0	1.55±0.05
P1	2.00±0.05	D1	$0.50^{+0.1}_{-0}$
P2	2.00±0.05	W	$8.00^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

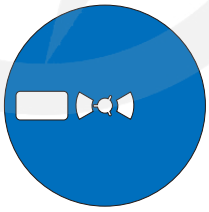


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 10000PCS	

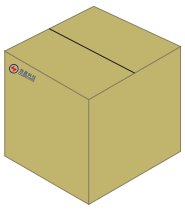
Packaging

DFN1006

10000PCS/Reel



15Reel/Inner Box
150KPCS/Inner Box



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

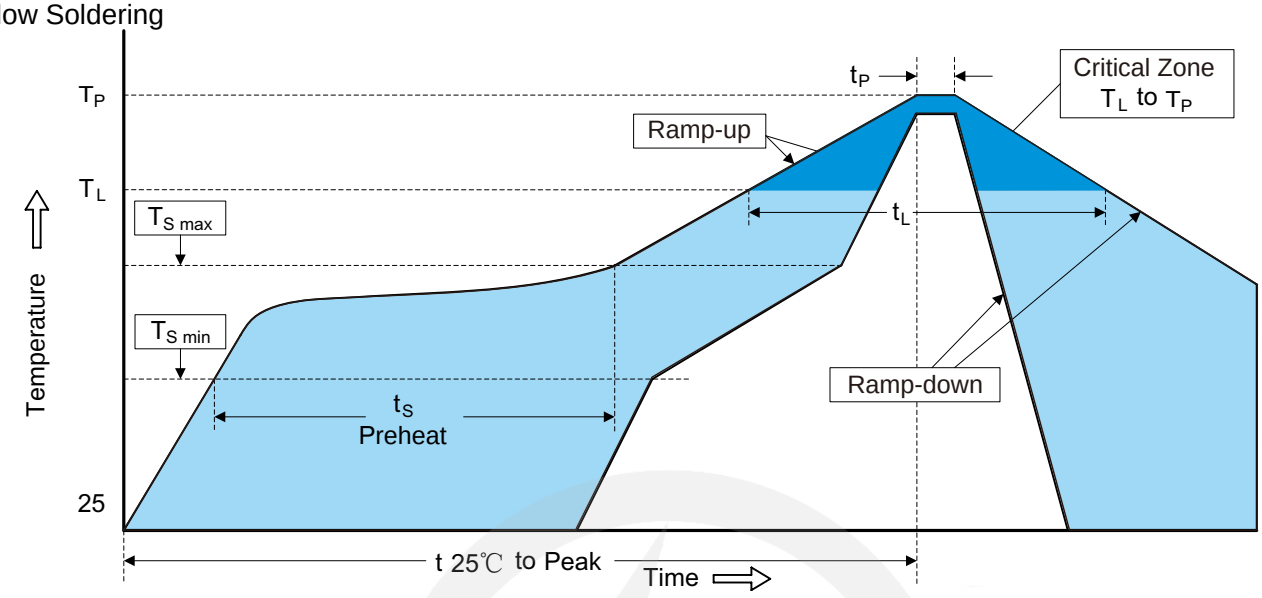
4 Boxs per carton
600 KPCS per carton

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

7 inchs Reel

Recommended Soldering Conditions

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	2024.10.11	2024.10.11	3.0	New File	/	Ding	