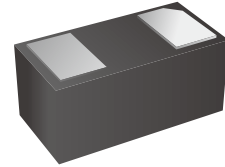




## TVS/ESD Protection Diode

### Features

- Transient protection for high-speed data lines  
IEC 61000-4-2 (ESD) ±30kV (Contact)  
±30kV (Air)  
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×0.4mm)
- Protects one data, control or power line
- Low capacitance
- Low leakage current
- Low clamping voltage
- Lead free in comply with EU RoHS 011/65/EU directives



### Mechanical Date

- Case: DFN1006
- Flammability Rating: UL 94V-0
- MSL3

### Applications

- Portable Electronics
- Desktops, Servers and Notebooks
- Cellular Phones
- MP3 Ports
- Digital Ports
- Subscriber Identity Module (SIM) card

### Ordering Information

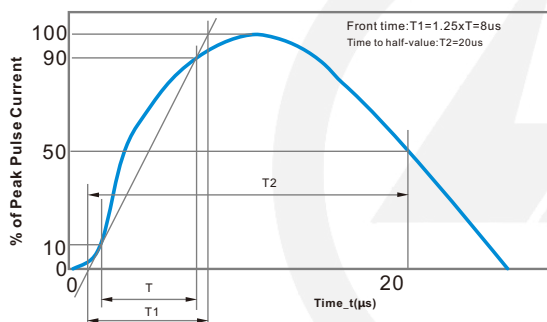
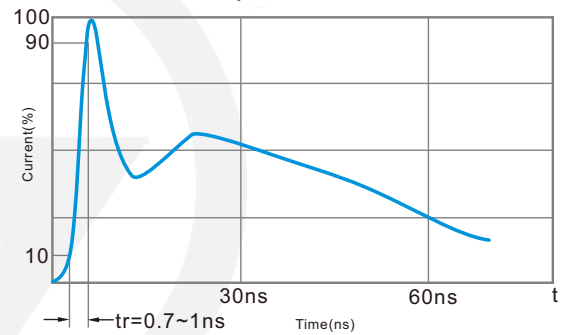
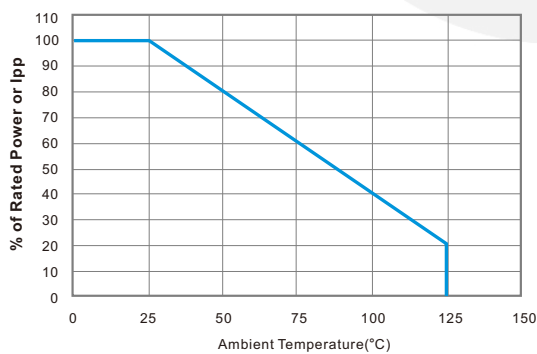
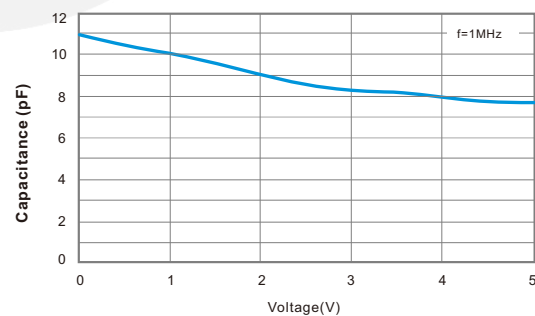
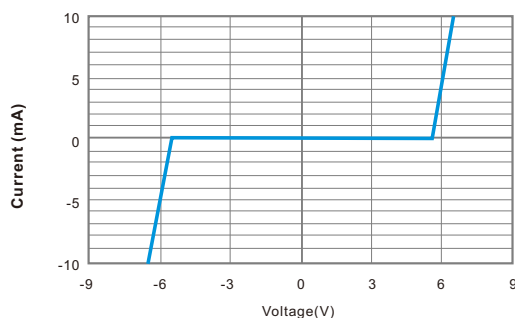
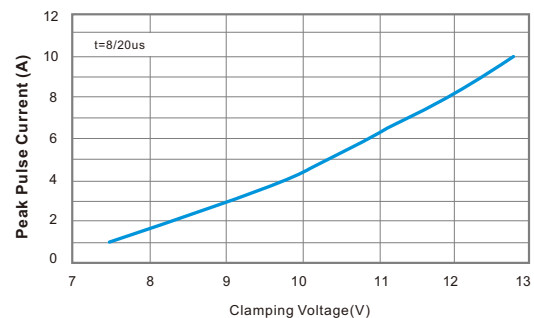
Part Number	Marking	Shipping	Reel
LTE10N05C01 -TR10	FOC	10000PCS Tape&Reel	7 inches

### Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Contact)	±30	kV
	ESD per IEC 61000-4-2 (Air)	±30	
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	150	W
T <sub>OPT</sub>	Operating Temperature	-40~125	°C
T <sub>STG</sub>	Storage Temperature	-40~150	°C

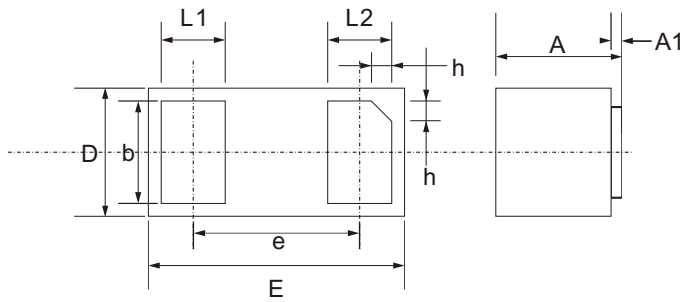
**Electrical Characteristics** ( $T_a=25^{\circ}\text{C}$ )

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				5.0	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	5.6		7.8	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5\text{V}$			1.0	$\mu\text{A}$
$V_C$	Clamping Voltage	$I_{PP} = 5\text{A}$ , $t_p = 8/20\mu\text{s}$			11.6	V
$V_C$	Clamping Voltage	$I_{PPmax} = 9.4\text{A}$ , $t_p = 8/20\mu\text{s}$			16.0	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		10	15	pF

**Characteristics Curve**
**Fig.1** 8x20 $\mu\text{s}$  Waveform per IEC61000-4-5

**Fig.2** Contact Discharge Current Waveform per IEC 61000-4-2

**Fig.3** Power Derating Curve

**Fig.4** Voltage vs Capacitance

**Fig.5** Voltage Sweeping

**Fig.6** Clamping Voltage vs Peak Pulse Current


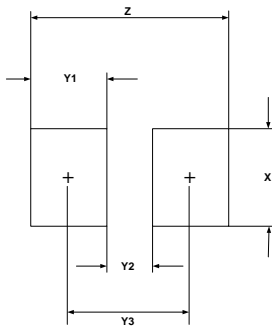
**DFN-1006 Package Outline**

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**



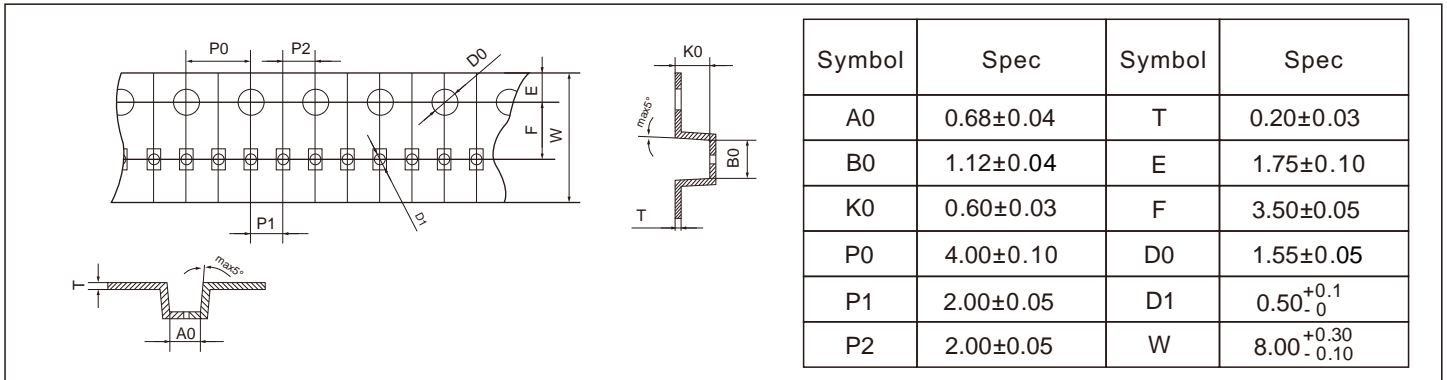
SYM	DIMENSIONS
	MILLIMETERS
X	0.60
Y1	0.50
Y2	0.30
Y3	0.80
Z	1.30

Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

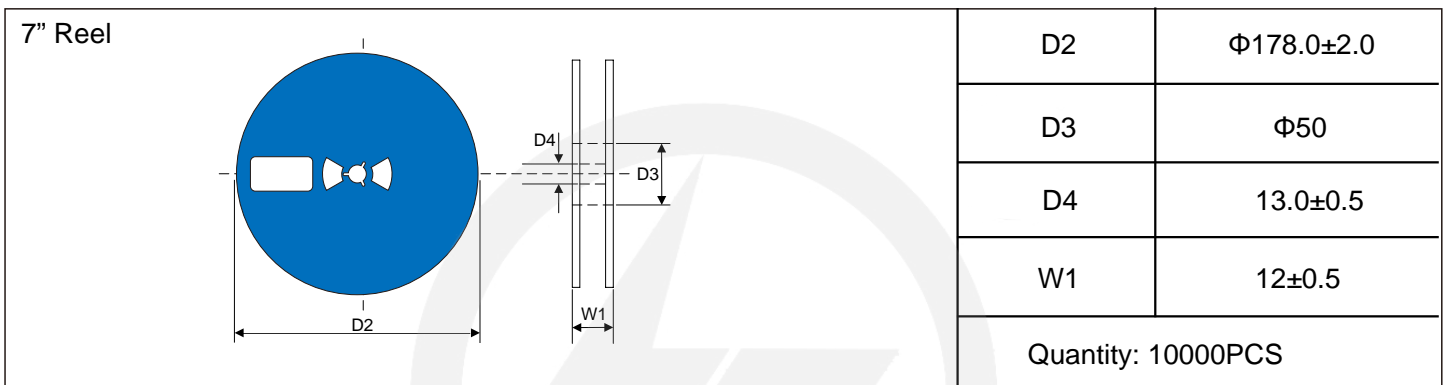
**Carrier Tape Dimensions**

Unit : mm

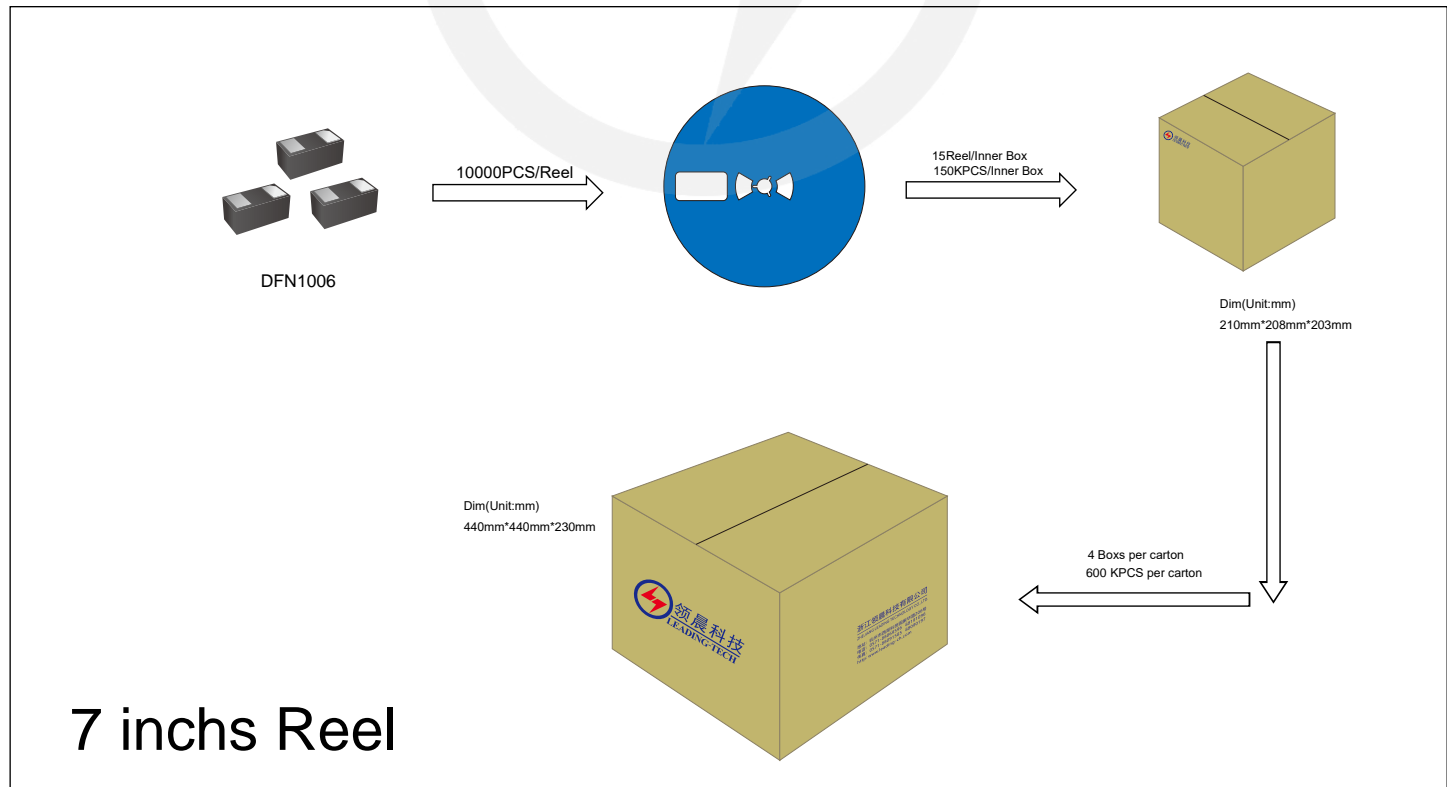


**Reel Dimensions**

Unit : mm



**Packaging**





## Recommended Soldering Conditions



### Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T <sub>L</sub> to T <sub>P</sub> )	3°C/second max.
Preheat	
-Temperature Min (T <sub>S min</sub> )	150°C
-Temperature Max (T <sub>S max</sub> )	200°C
-Time (min to max) (t <sub>s</sub> )	60-180 seconds
T <sub>S max</sub> to T <sub>L</sub>	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T <sub>L</sub> )	217°C
-Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>P</sub> )	260°C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C 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	2024.09.06	2024.09.06	3.0	New File	/	Ding	