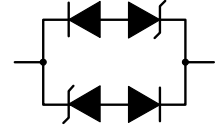


## 1-Line Low Capacitance Bi-directional TVS Diode

### Features

- 340W peak pulse power (8/20 $\mu$ s)
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm$ 30kV  
Contact discharge:  $\pm$ 30kV
  - IEC61000-4-5 (Lightning) 18A (8/20 $\mu$ s)
- Lead free in comply with EU RoHS 2011/65/EU directives



### Mechanical Data

- Case: SOD-123
- LeadFinish: Matte Tin
- Case Material: "Green" Molding Compound
- Approx. Weight: 10.5mg

### Applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

### Ordering information

Part Number	Marking	Shipping	Reel
LTE1Z05C01L-TR3	1D1	3000PCS Tape&Reel	7 inchs
LTE1Z05C01L-TR12	1D1	12000PCS Tape&Reel	13 inchs

**Absolute Maximum Ratings** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

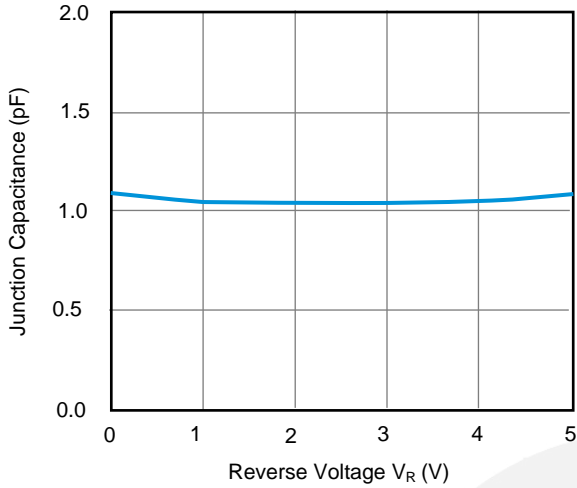
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	340	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	18	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	$\pm 30$ $\pm 30$	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

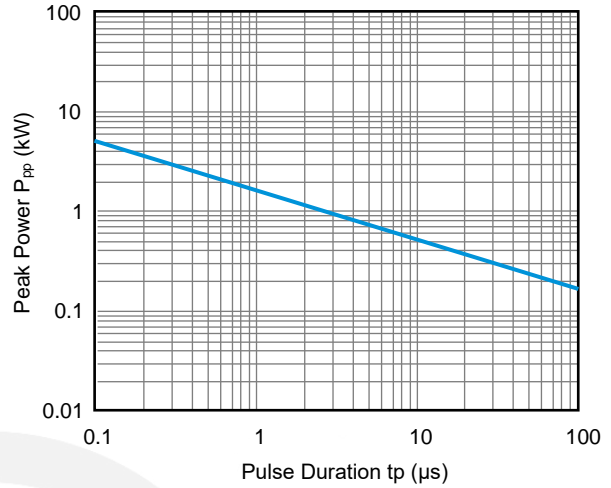
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	$I_T = 1\text{mA}$
Reverse Leakage Current	$I_R$			0.2	$\mu\text{A}$	$VRWM = 5\text{V}$
Clamping Voltage	VC		8	10	V	$IPP = 1\text{A}$ (8/20 $\mu\text{s}$ pulse)
Clamping Voltage	VC		15	18	V	$IPP = 18\text{A}$ (8/20 $\mu\text{s}$ pulse)
Junction Capacitance	CJ		1		pF	$VR = 0\text{V}$ , $f = 1\text{MHz}$

**Characteristic Curves**

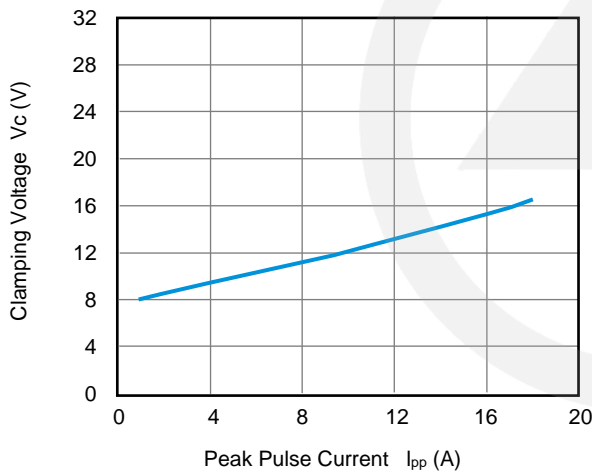
**Fig.1 Junction Capacitance vs. Reverse Voltage**



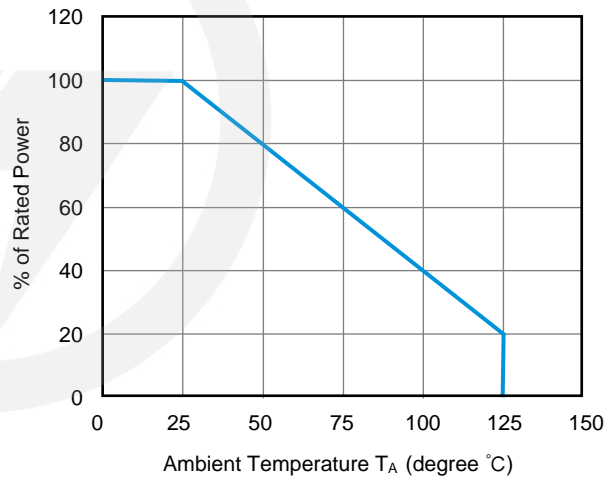
**Fig.2 Peak Pulse Power vs. Pulse Time**



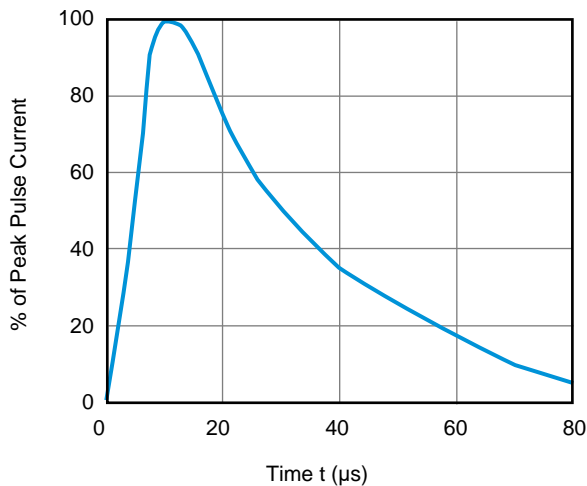
**Fig.3 Clamping Voltage vs. Peak Pulse Current**



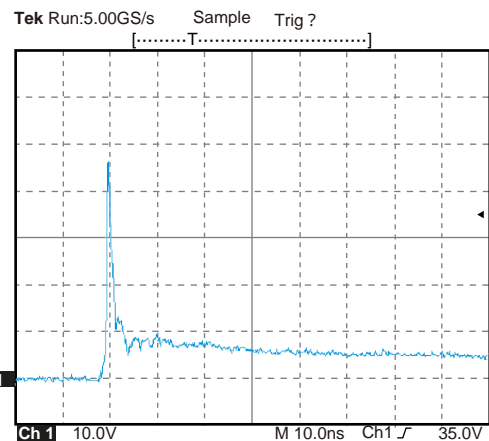
**Fig.4 Power Derating Curve**



**Fig.5 8 X 20μs Pulse Waveform**



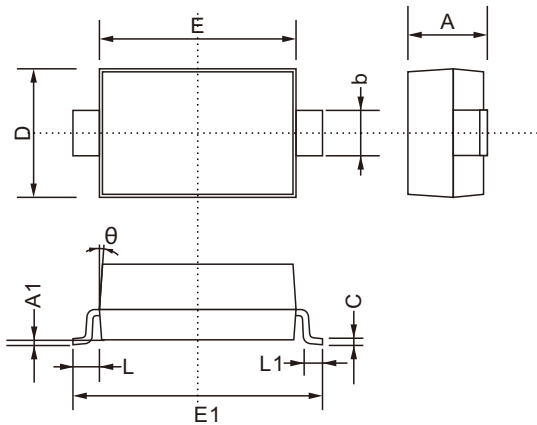
**Fig.6 ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2**



Note: Data is taken with a 10x attenuator

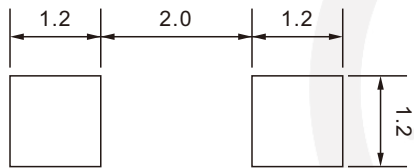
**SOD-123 Package Outline**

Unit: mm



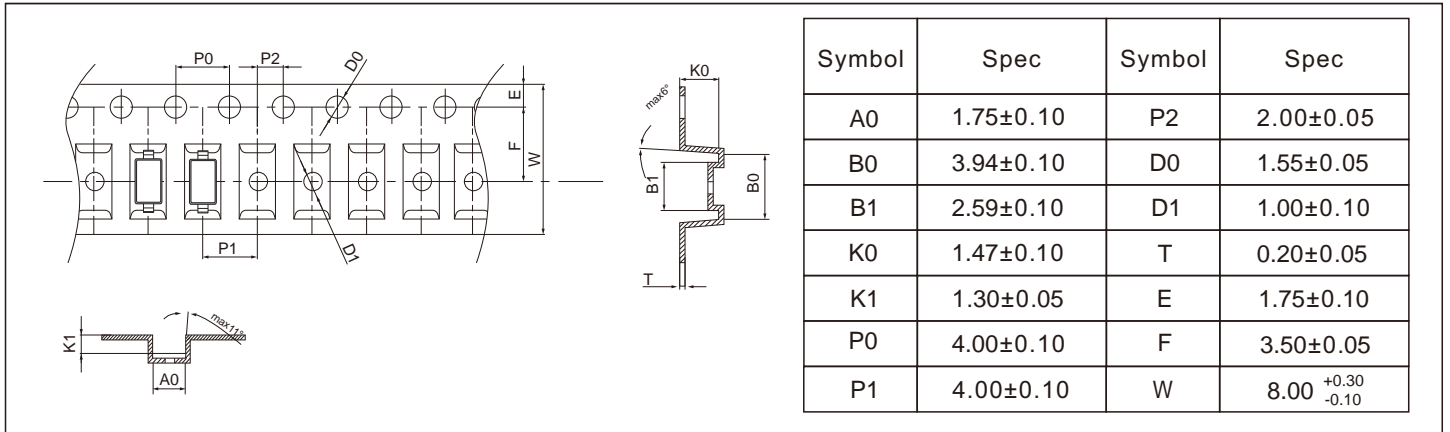
SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.300
A1	0.000	0.200
b	0.450	0.750
C	0.080	0.230
D	1.500	1.800
E	2.500	2.800
E1	3.550	3.900
L1	0.250	0.450
L	0.5REF	
$\theta$	8°	

**SOD-123 Suggested Pad Layout**



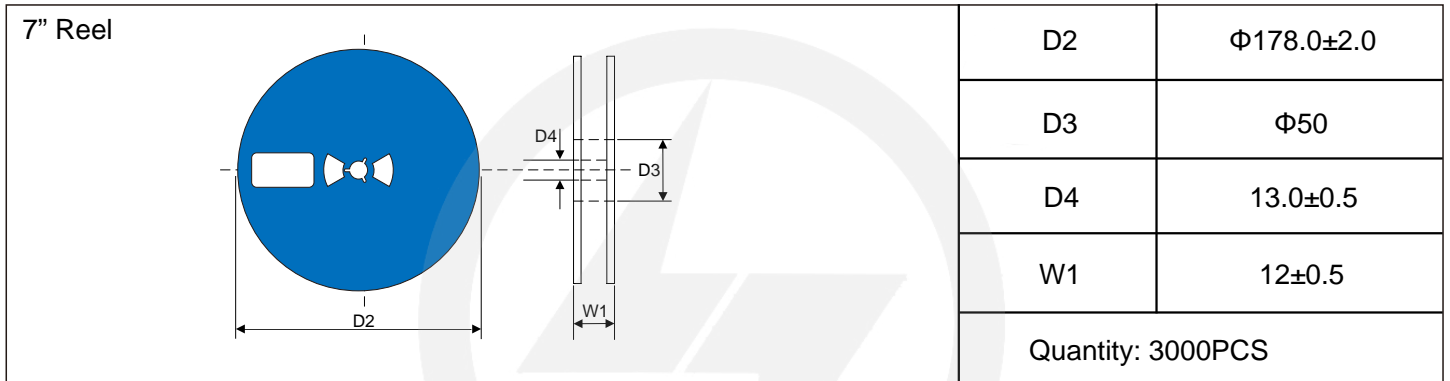
- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$
  3. The pad layout is for reference purpose only.

**Carrier Tape Dimensions**



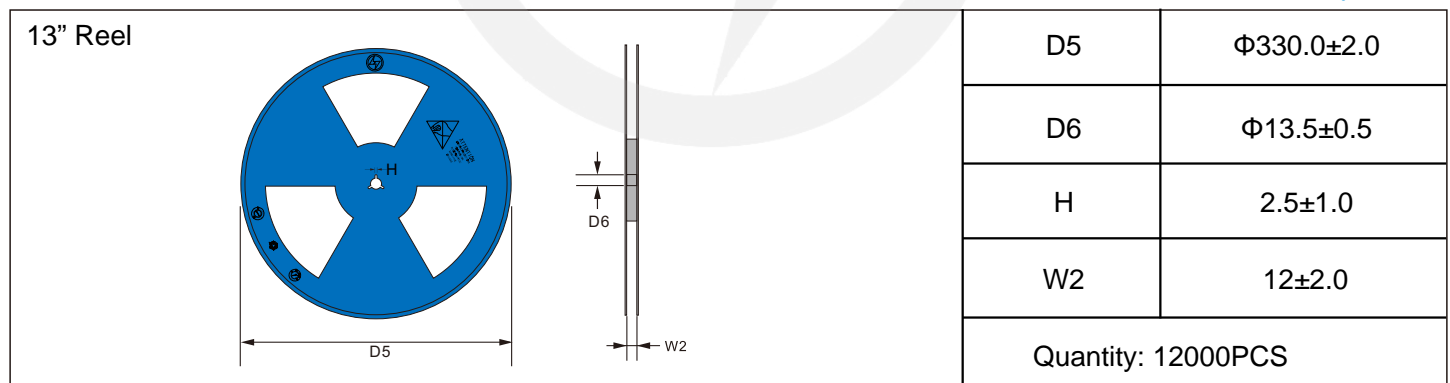
**Reel Dimensions**

**Unit : mm**

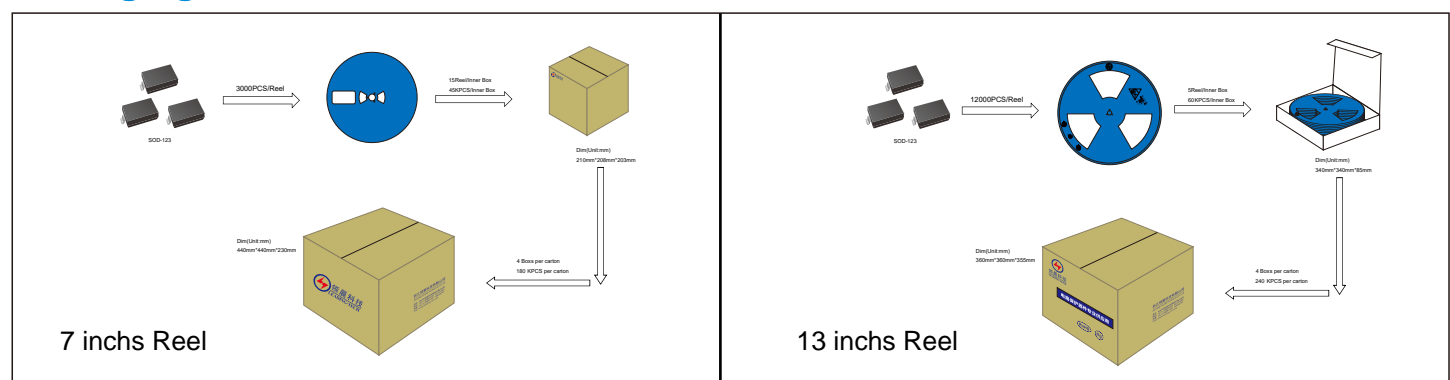


**Reel Dimensions**

**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	2025.06.09	2025.06.09	3.0	New File	/	Ding	