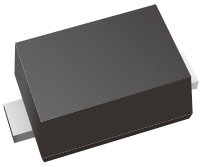
LTE5L03C01W

1-Line Bi-directional TVS Diode

Features



- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 8A (8/20μs)
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case:SOD-523
- Flammability Rating: UL 94V-0
- Approx. Weight: 1.4mg

Ordering Information

Part Number	Marking	Shipping	Reel
LTE5L03C01W-TR3	3Y	3000PCS Tape&Reel	7 inchs
LTE5L03C01W-TR10	3Y	10000PCS Tape&Reel	7 inchs

Absolute Maximum Rating

Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	V_{ESD}	±30 ±30	kV
Peak Pulse Current (8/20μs) @Ta=25℃	I_{PP}	8	A
Total Power Dissipation on FR-5 Board @Ta=25℃	P_{PP}	80	W
Maximum Junction temperature	T_J	-55-+125	℃
Storage Temperature Range	T_{STG}	-55-+150	℃

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-Off voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	3.5			V
Reverse Leakage Current	I_R	VRWM=3.3V			200	nA
Clamping Voltage	V_C	IPP=1A			6	V
		IPP=8A			10	V
Junction Capacitance	C_j	VR=0V,f=1MHz		10	20	pF

Characteristics Curve

Fig.1 Junction Capacitance vs Reverse Voltage

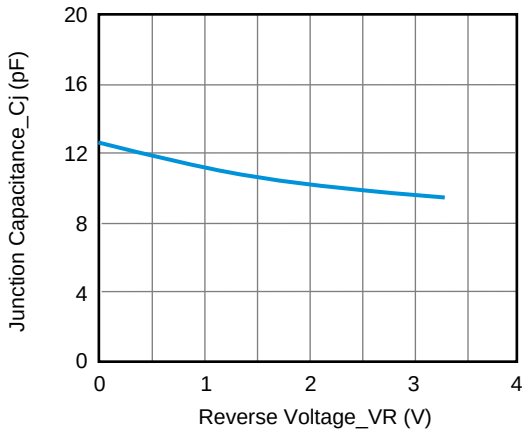


Fig.2 Peak Pulse Power vs Pulse Time

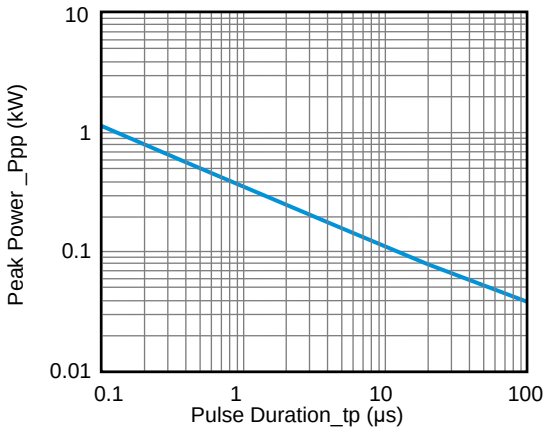


Fig.3 Clamping Voltage vs Peak Pulse Current

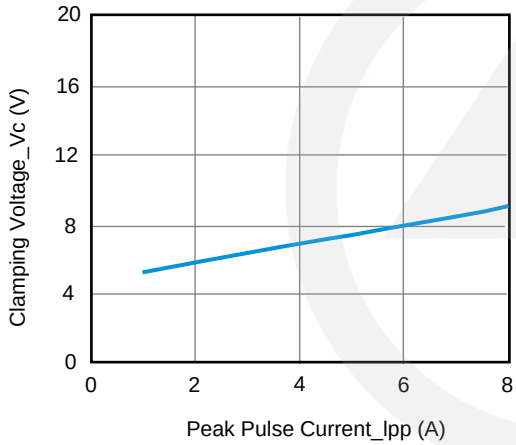


Fig.4 Power Derating Curve

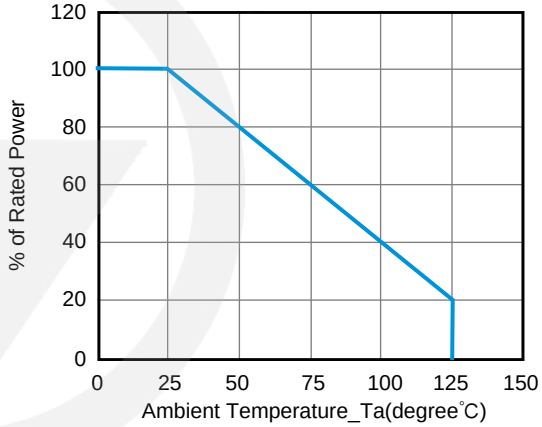


Fig.5 8 X 20μs Pulse Waveform

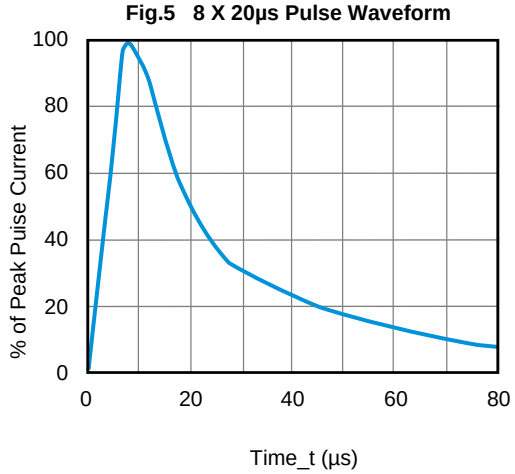
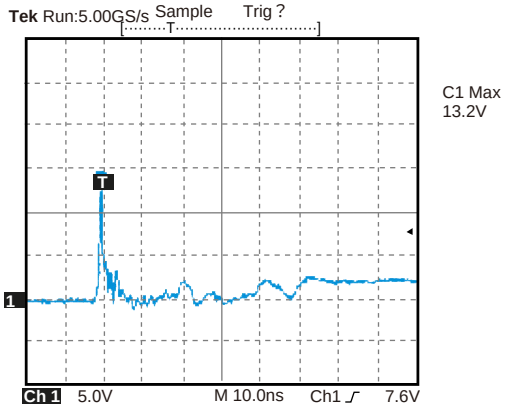


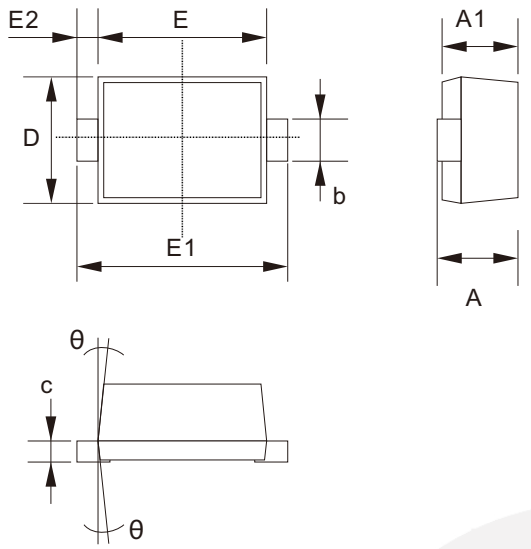
Fig.6 ESD Clamping Voltage
8 kV Contact per IEC61000−4−2



Note: Data is taken with a 10x attenuator

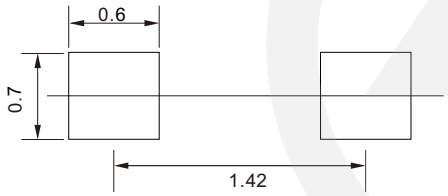
SOD-523 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.500	0.770
A1	0.500	0.700
b	0.250	0.380
c	0.070	0.200
D	0.700	0.900
E	1.100	1.300
E1	1.500	1.700
E2	0.200 REF	
θ	7° REF	

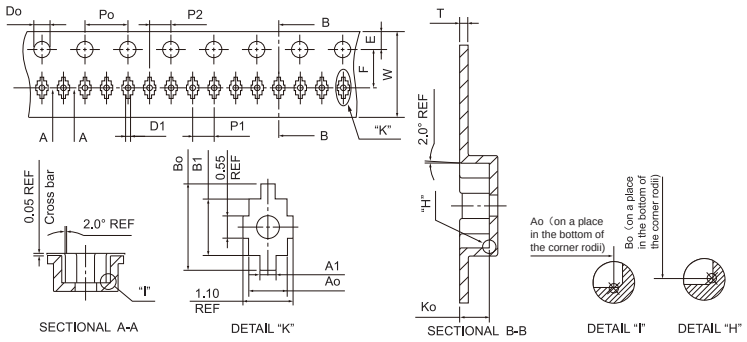
SOD-523 Suggested Pad Layout



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

Carrier Tape Dimensions

Unit：mm

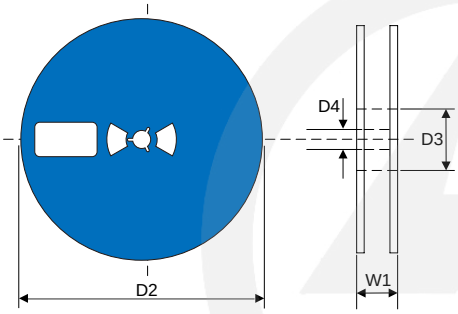


Symbol	Spec	Symbol	Spec
A0	0.90±0.05	P0	4.00±0.10
A1	0.39±0.05	P1	2.00±0.05
B0	1.95±0.10	P2	2.00±0.05
B1	1.30±0.05	D0	1.50 $^{+0.10}_{0}$
K0	0.69±0.05	D1	0.50±0.05
10P0	40.0±0.10	F	3.50±0.05
T	0.18±0.02	W	8.00 $^{+0.30}_{-0.10}$
E	1.75±0.10		

Reel Dimensions

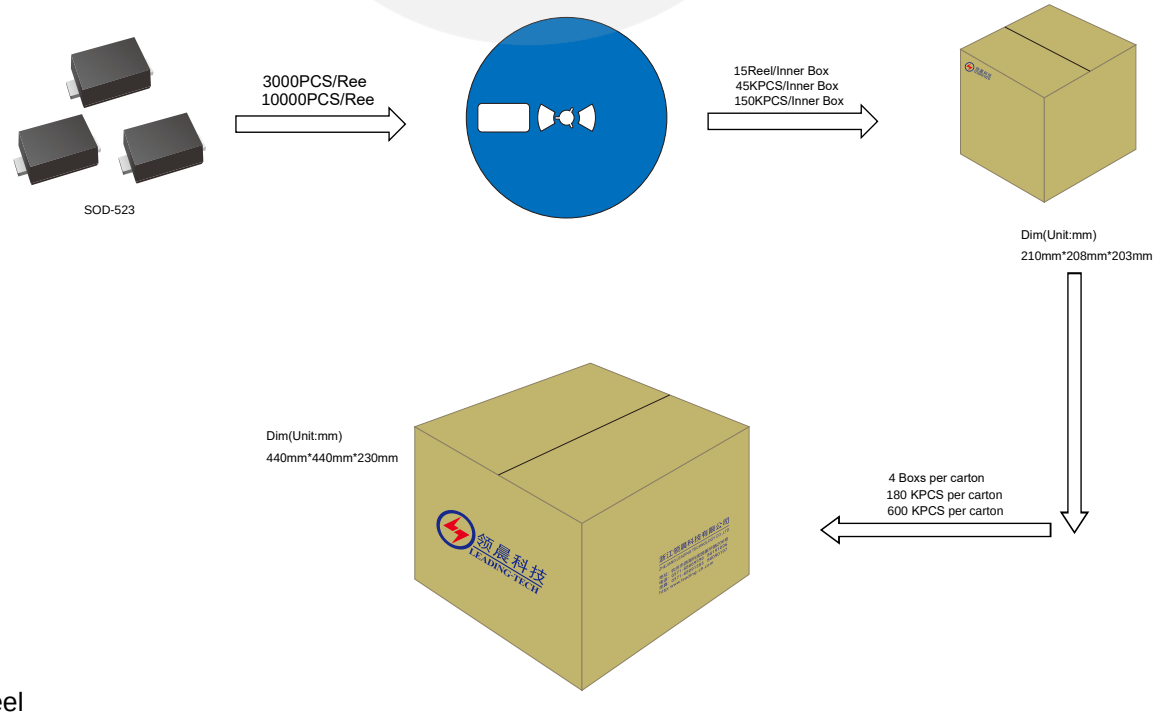
Unit：mm

7” Reel



D2	Φ178.0±2.0
D3	Φ50.0
D4	13.0±0.5
W1	12±0.5
Quantity: 3000/10000PCS	

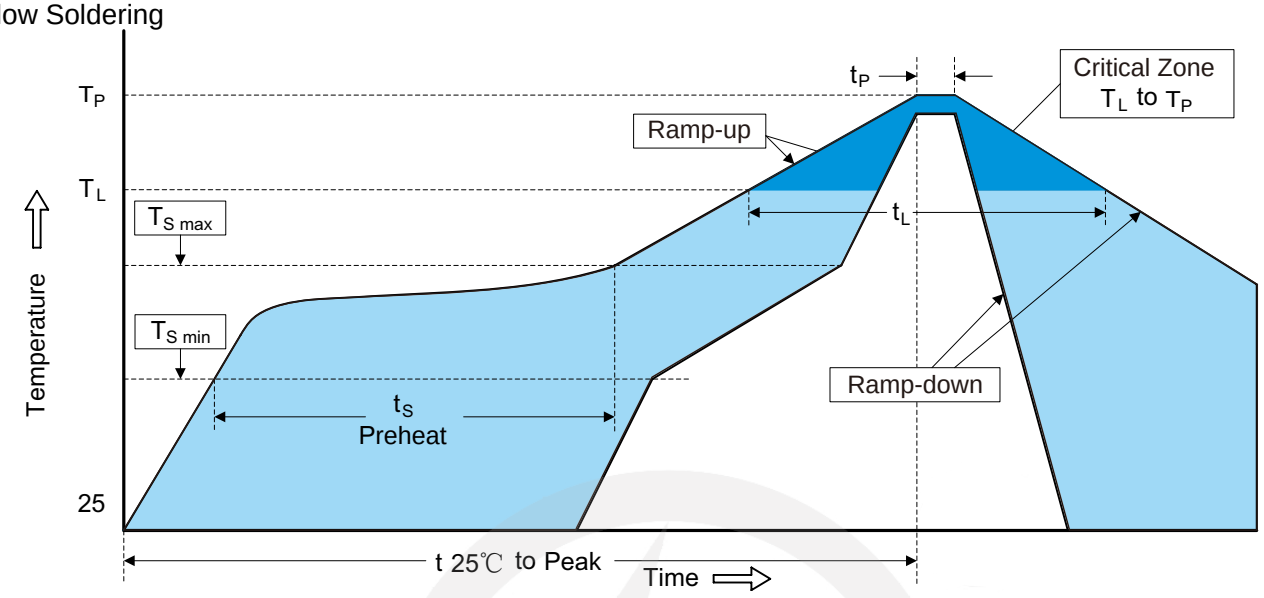
Packaging



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	2025.06.11	2025.06.11	3.0	New File	/	Ding	