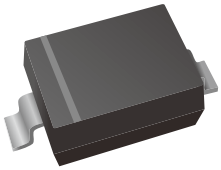
LTES24C01HW

1-Line Bi-directional TVS Diode

Features



- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 24V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 12A (8/20μs)
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOD-323
- Flammability Rating: UL 94V-0

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras；Peripherals
- Audio Players，Keypads, Side Keys, LCD Displays

Ordering Information

Part Number	Marking	Shipping	Reel
LTES24C01HW-TR3	24	3000PCS Tape&Reel	7 inchs
LTES24C01HW-TR12	24	12000PCS Tape&Reel	13 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}	12	A
Total Power Dissipation on FR-5 Board @Ta=25℃	P_{PP}	550	W
Maximum Junction temperature	T_J	-55-+125	℃
Storage Temperature Range	T_{STG}	-55-+125	℃

Electrical Characteristics (Ta= 25℃ unless otherwise noted, VF=0.9V Max.@ IF=10mA for all types)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-Off voltage	VRWM				24	V
Reverse Breakdown Voltage	VBR	IT=1mA	26.6			V
Reverse Leakage Current	IR	VRWM=24V			0.3	μA
Clamping Voltage	VC	IPP=1A		31	35	V
		IPP=12A		46	50	V
Junction Capacitance	Cj	VR=0V,f=1MHz		35		pF

Characteristics Curve

Fig.1 Junction Capacitance vs Reverse Voltage

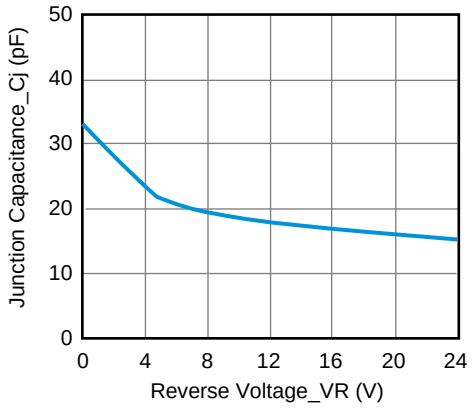


Fig.2 Peak Pulse Power vs Pulse Time

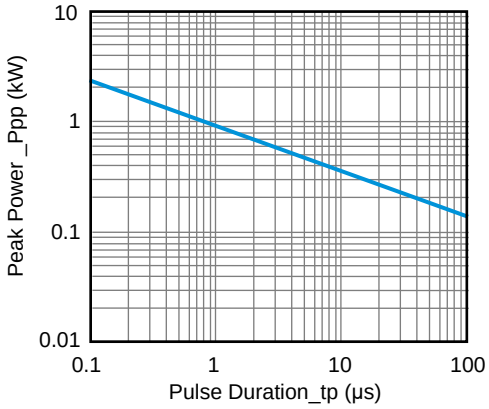


Fig.3 Clamping Voltage vs Peak Pulse Current

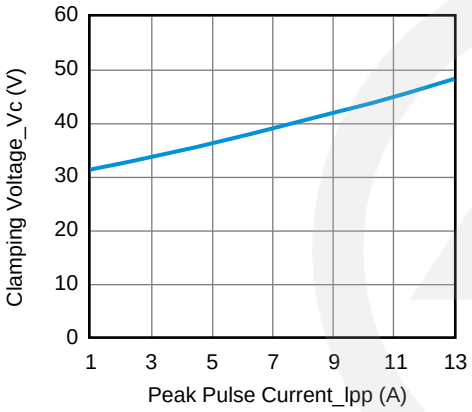


Fig.4 Power Derating Curve

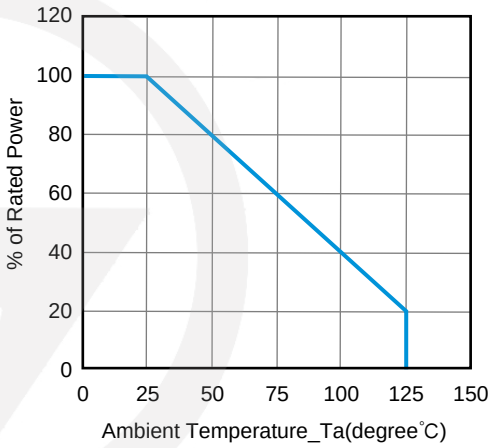


Fig.5 8 X 20μs Pulse Waveform

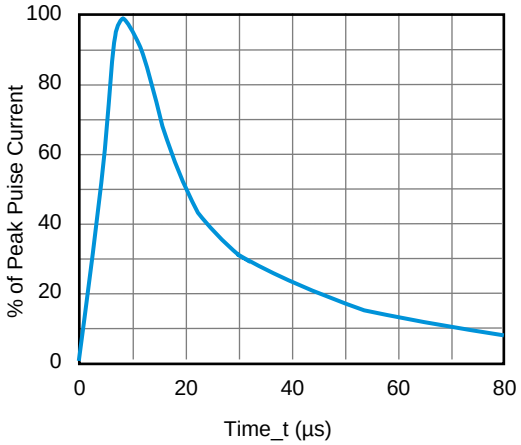
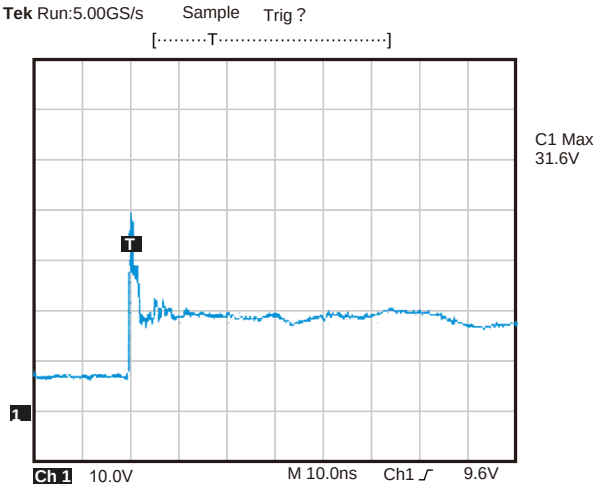
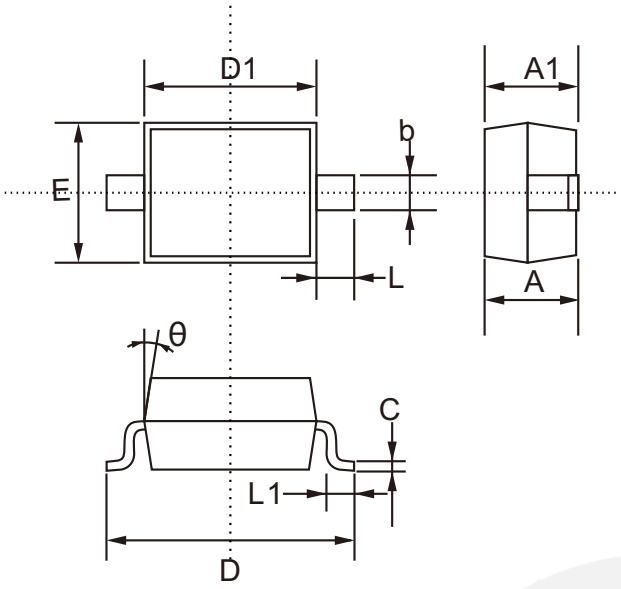


Fig.6 ESD Clamping Voltage
8 kV Contact per IEC61000−4−2



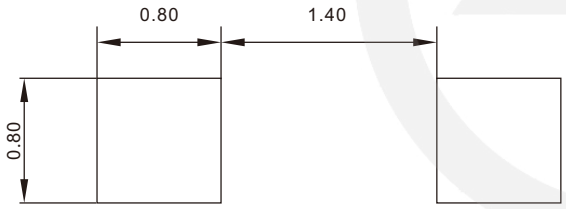
SOD-323 Package Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.800	1.100
A1	0.800	0.900
b	0.250	0.400
C	0.080	0.177
D	2.300	2.800
D1	1.400	1.800
E	1.150	1.400
L1	0.100	0.400
L	0.475 TYP.	
θ	8°	

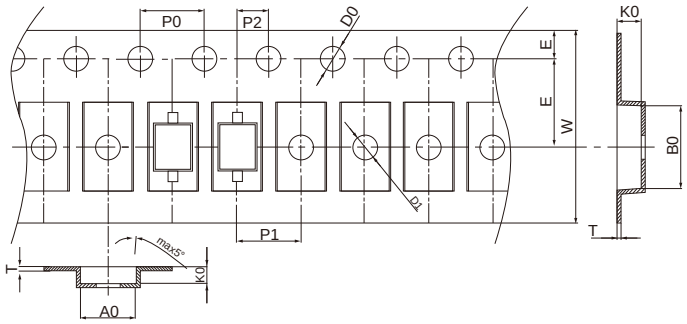
SOD-323 Suggested Pad Layout



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

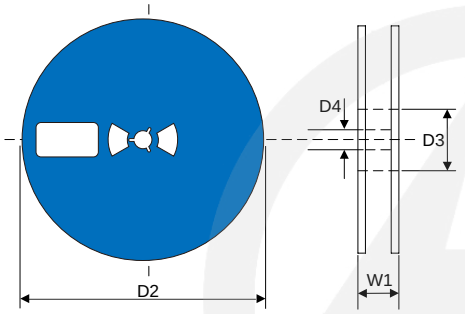


Symbol	Spec	Symbol	Spec
A0	1.41±0.10	P0	4.00±0.10
A1	0.90±0.10	P1	4.00±0.01
B0	2.90±0.10	W	8.00±0.10
B1	1.95±0.10	E	1.75±0.10
K0	1.25±0.10	F	3.50±0.05
D0	1.55±0.10	P2	2.00±0.05
D1	0.80±0.10	T	0.20±0.05

Reel Dimensions

Unit：mm

7” Reel

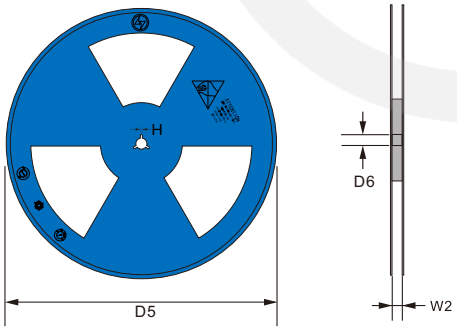


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

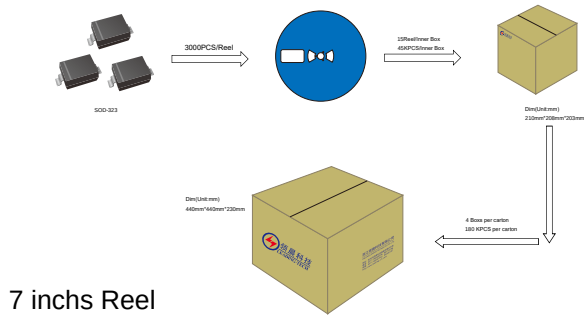
Unit：mm

13” Reel

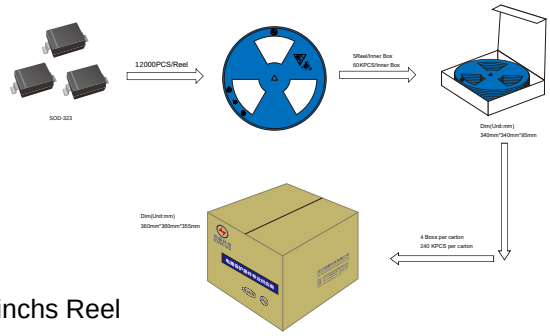


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



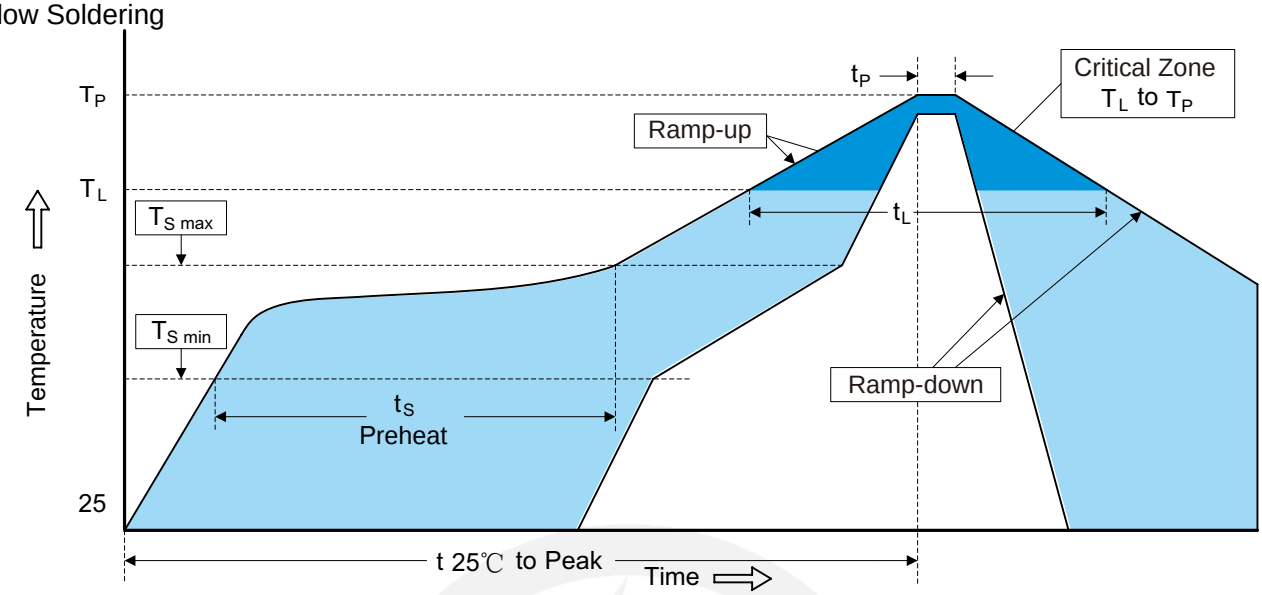
7 inchs Reel



13 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	2025.01.15	2025.01.15	3.0	New File	/	Ding	