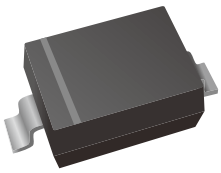
Features



- IEC 61000-4-2 Level 4 ESD Protection
- - ±30kV Contact Discharge
- - ±30kV Air Discharge
- 480W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- Protecting one Uni-directional lines
- Capacitance: 220pF Typ.
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOD-323
- Polarity: Color band denotes cathode end
- Approx. Weight:4.7mg

Applications

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

Ordering Iformation

Part Number	Marking	Shipping	Reel
LTES05A01HD-TR3	05	3000PCS Tape&Reel	7 inchs
LTES05A01HD-TR12	05	12000PCS Tape&Reel	13 inchs

Absolute Maximum Rating

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

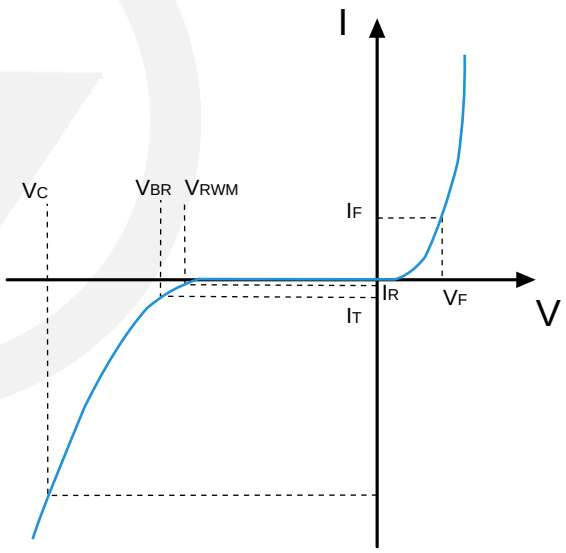
Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)	P_{pk}	-	480	W
Peak pulse current (tp=8/20us)	I_{PP}	-	30	A
ESD (IEC61000-4-2 air discharge)	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge)	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	125	˚C
Operating temperature	T_{OP}	-40	125	˚C
Storage temperature	T_{STG}	-55	150	˚C
Lead temperature	T_L	-	260	˚C

Electrical 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}=1A; tp=8/20us		7.5	10	V
		I_{PP}=30A; tp=8/20us		13	16	V
Junction Capacitance	C_J	V_R=0V; f=1MHz		220	300	pF

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F



Characteristics Curves

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

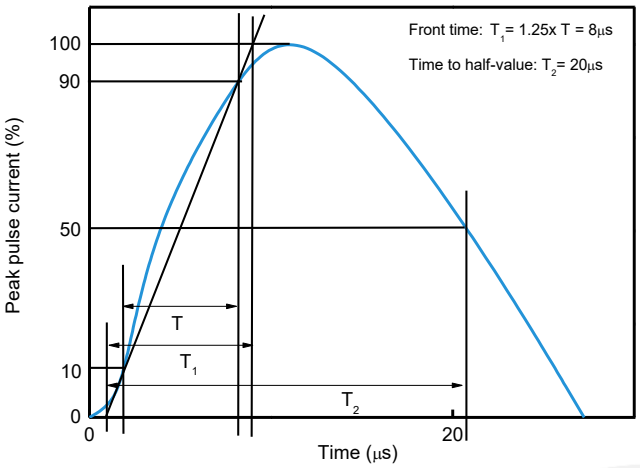


Fig.2 Contact discharge current waveform per IEC61000-4-2

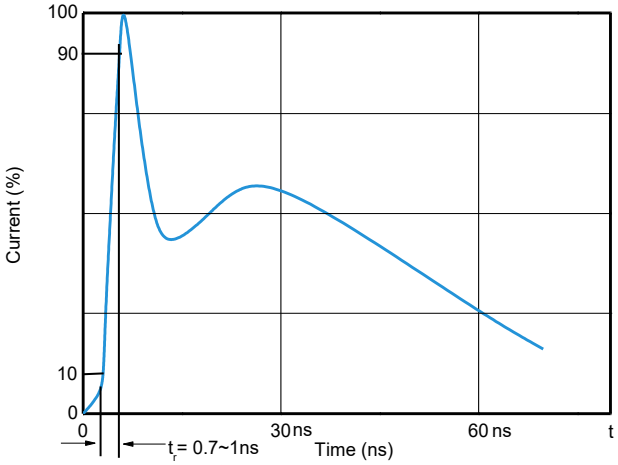


Fig.3 Clamping voltage vs. Peak pulse current

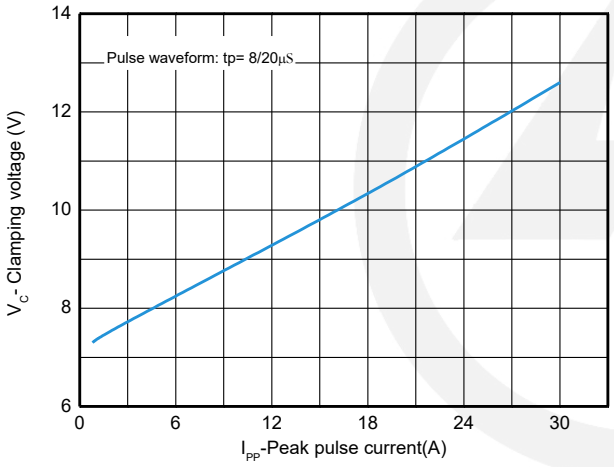


Fig.4 Capacitance vs. Reverse voltage

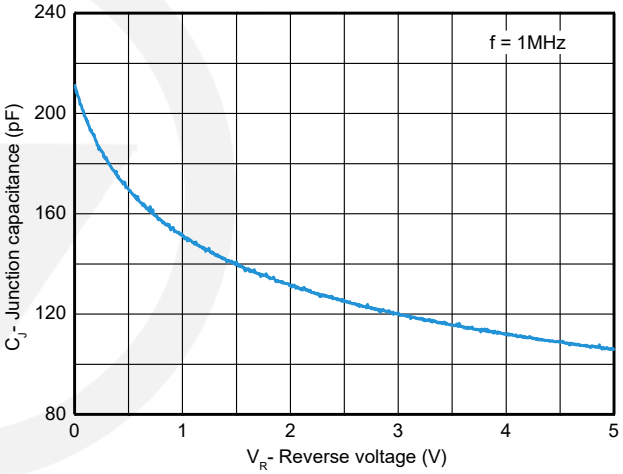


Fig.5 Non-repetitive peak pulse power vs. Pulse time

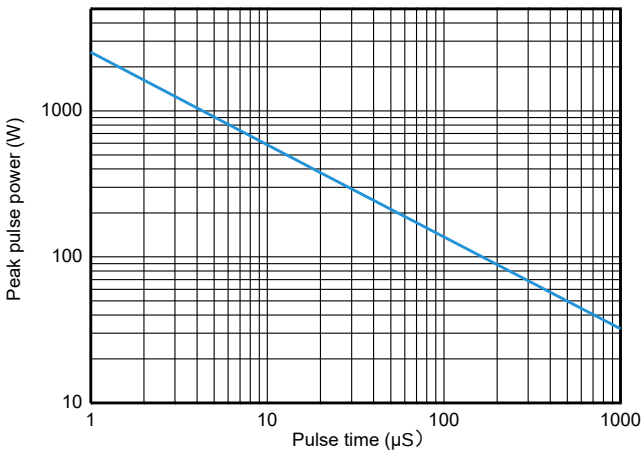
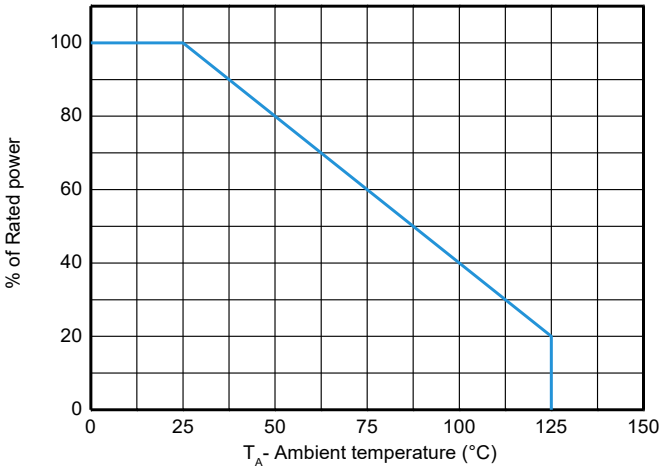
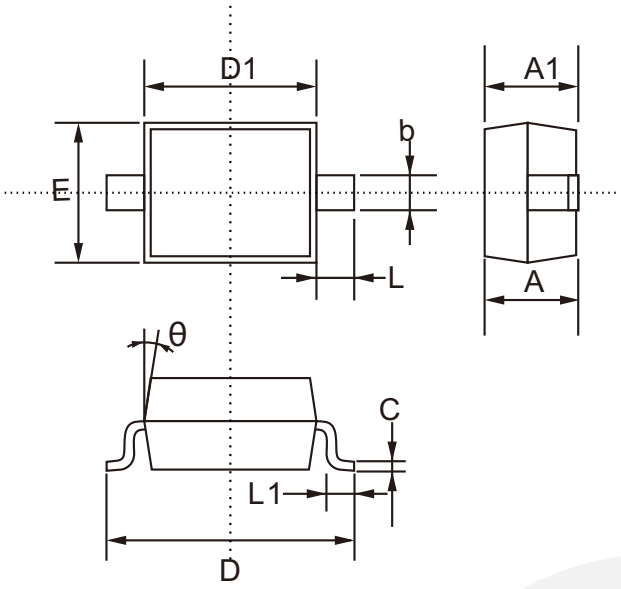


Fig.6 Power derating vs. Ambient temperature



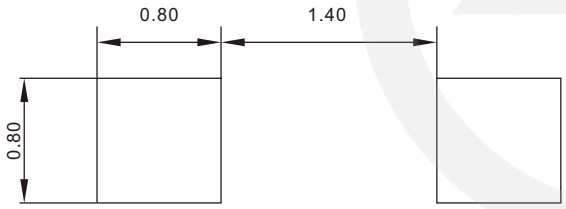
SOD-323 Package Outline



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°	

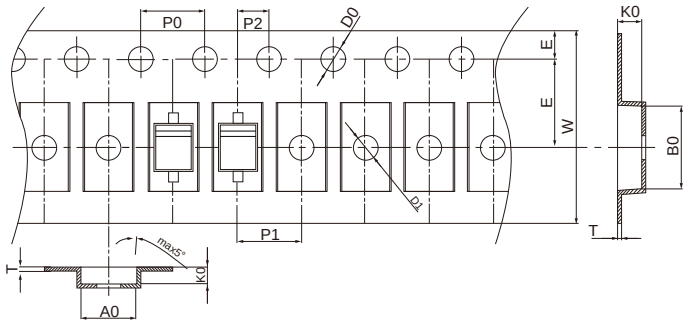
SOD-323 Suggested Pad Layout



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

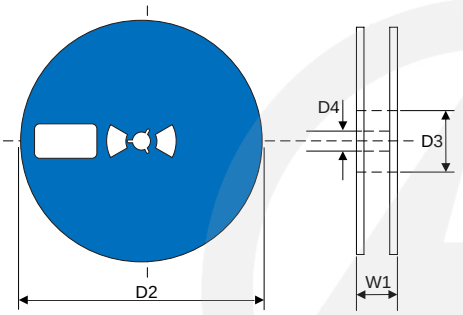


Symbol	Spec	Symbol	Spec
A0	1.41±0.10	P0	4.00±0.10
A1	0.90±0.10	P1	4.00±0.01
B0	2.90±0.10	W	8.00±0.10
B1	1.95±0.10	E	1.75±0.10
K0	1.25±0.10	F	3.50±0.05
D0	1.55±0.10	P2	2.00±0.05
D1	0.80±0.10	T	0.20±0.05

Reel Dimensions

Unit：mm

7” Reel

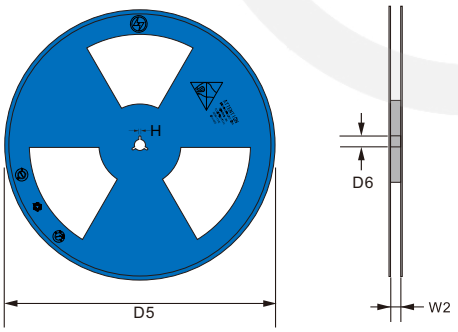


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

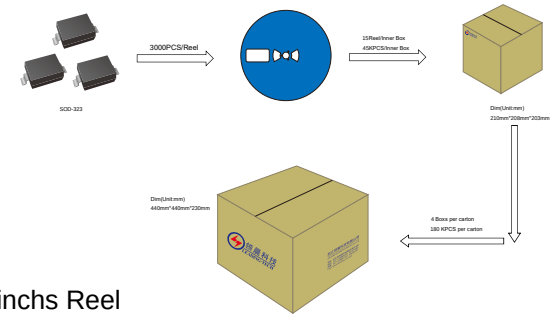
Unit：mm

13” Reel

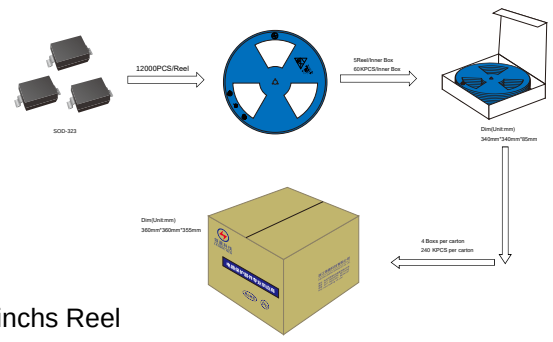


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



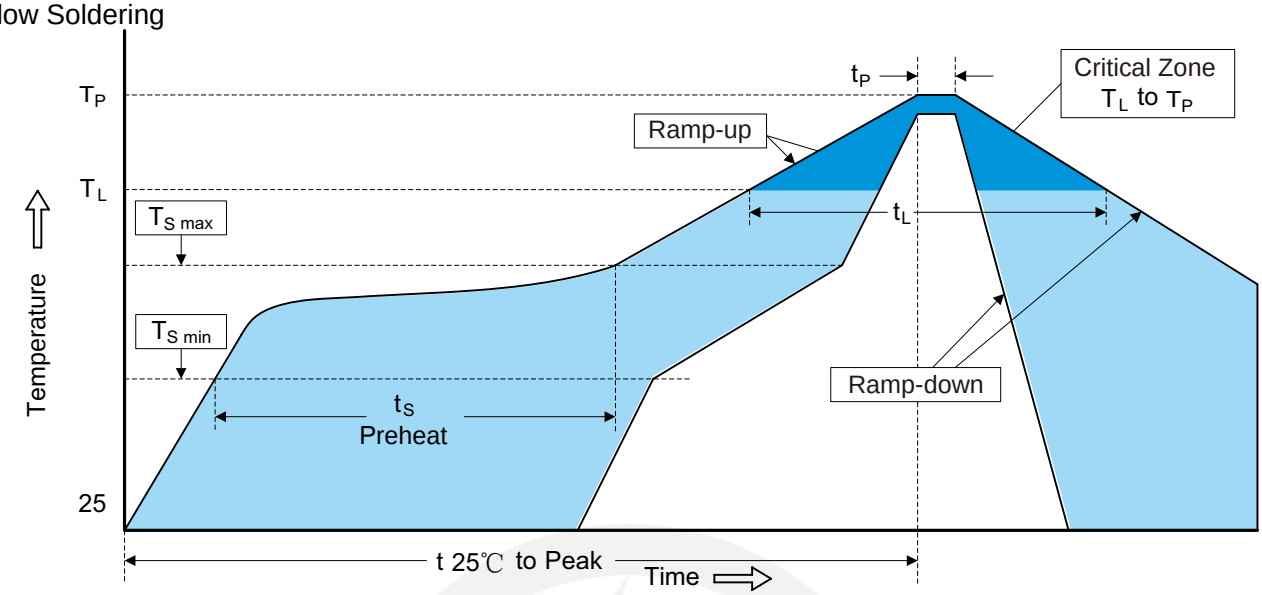
7 inchs Reel



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	2025.07.22	2025.07.22	3.0	New file	/	Ding	