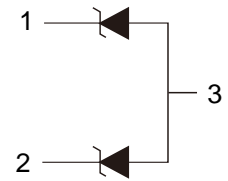
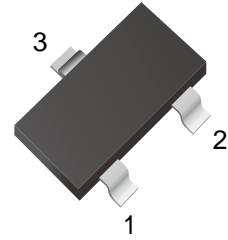


Uni-direction ESD Protection Diode

Features

- Uni-directional ESD protection of one line
- Reverse stand-off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 2.90mm×1.30mm×1.00mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SOT-23
- Flammability Rating: UL 94V-0
- Approx. Weight: 8.1mg

Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Portable electronics
- Other electronics equipments communication systems

Ordering Information

Part Number	Marking	Shipping	Reel
LTESD5V0AP-TR3	5M	3000PCS Tape&Reel	7 inches
LTESD5V0AP-TR12	5M	12000PCS Tape&Reel	13 inches

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	V _{ESD} ⁽¹⁾	±25	kV
		Air Model	
		Contact Model	
		Per Human Body Model	
JESD22-A114-B ESD Voltage		±16	
ESD Voltage	Machine Model	±0.4	
Peak Pulse Power	P _{PP} ⁽²⁾	170	W
Peak Pulse Current	I _{PP} ⁽²⁾	13	A
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

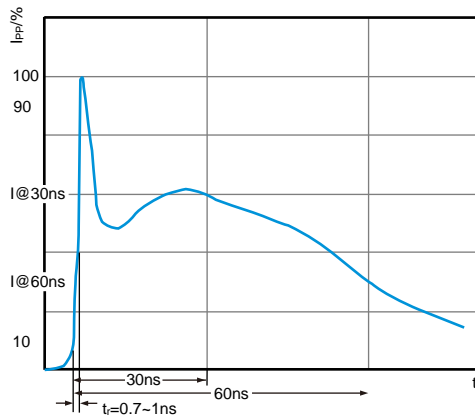
(1). Device stressed with ten non-repetitive ESD pulses.

(2). Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance

IEC61000-4-2 Standard

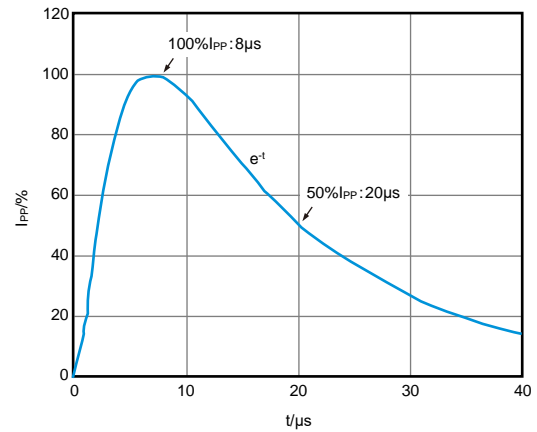
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15



ESD pulse waveform according to IEC61000-4-2

JESD22-A114-B Standard

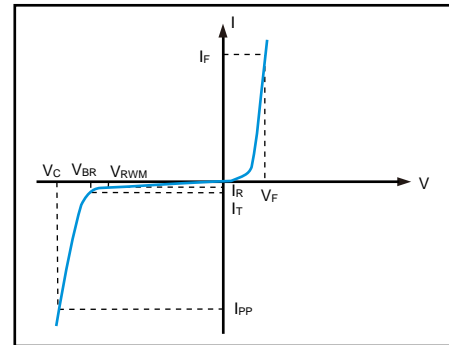
ESD Class	Human Body Discharge V
0	0 ~ 249
1A	250 ~ 499
1B	500 ~ 999
1C	1000 ~ 1999
2	2000 ~ 3999
3A	4000 ~ 7999
3B	8000 ~ 15999



8/20µs pulse waveform according to IEC 61000-4-5

Electrical Parameter

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



V-I characteristics for a uni-directional TVS

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				5	V
Reverse leakage current	I_R	$V_{RWM}=12V$			10	µA
Breakdown voltage	$V_{(BR)}$	$I_T=1mA$	6.2		7.3	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=9A$			13	V
Forward voltage	V_F	$I_F=10mA$			0.9	V
Junction capacitance	C_J	$V_R=0V, f=1MHz$		95		pF

(1). Other voltages available upon request.

(2). Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.



Characteristic Curves

Fig.1 Forward Characteristics

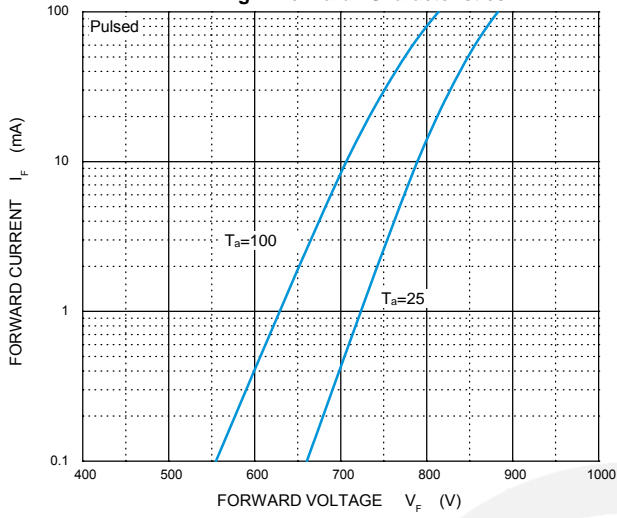


Fig.2 Reverse Characteristics

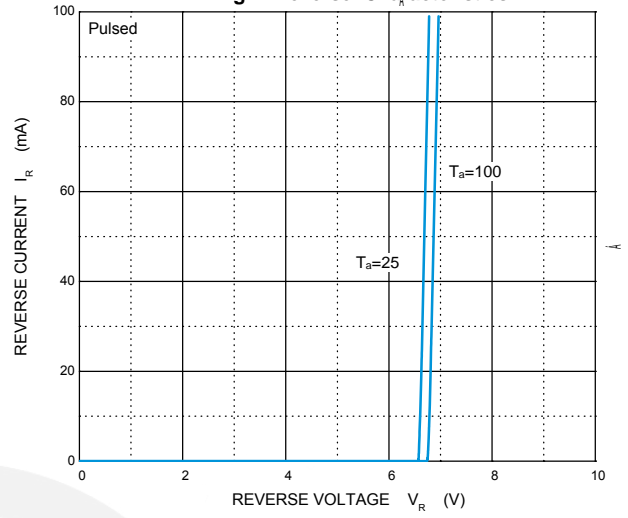


Fig.3 V_C vs I_{PP}

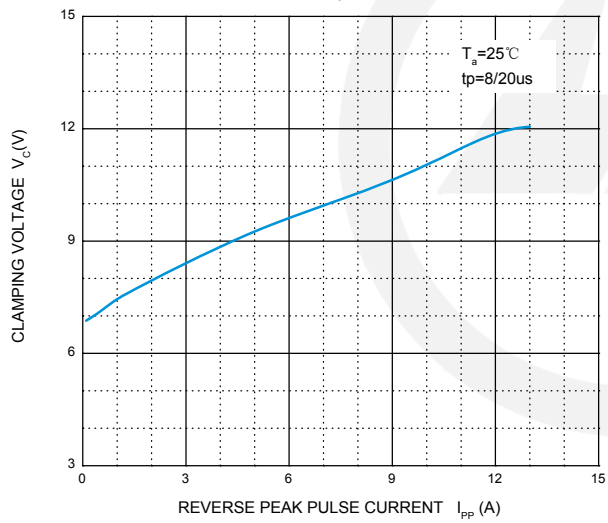
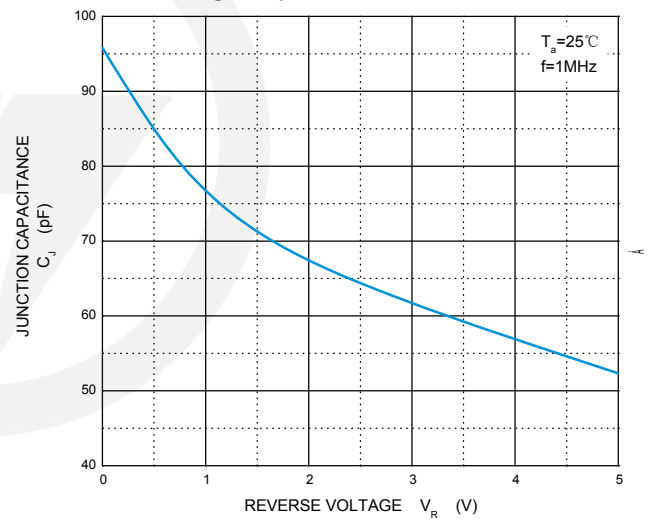
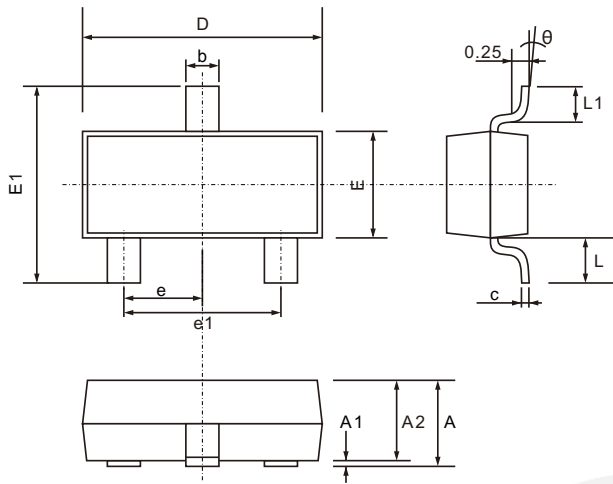


Fig.4 Capacitance Characteristics



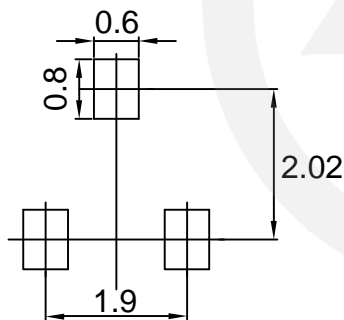
SOT-23 Package Outline

Unit: mm

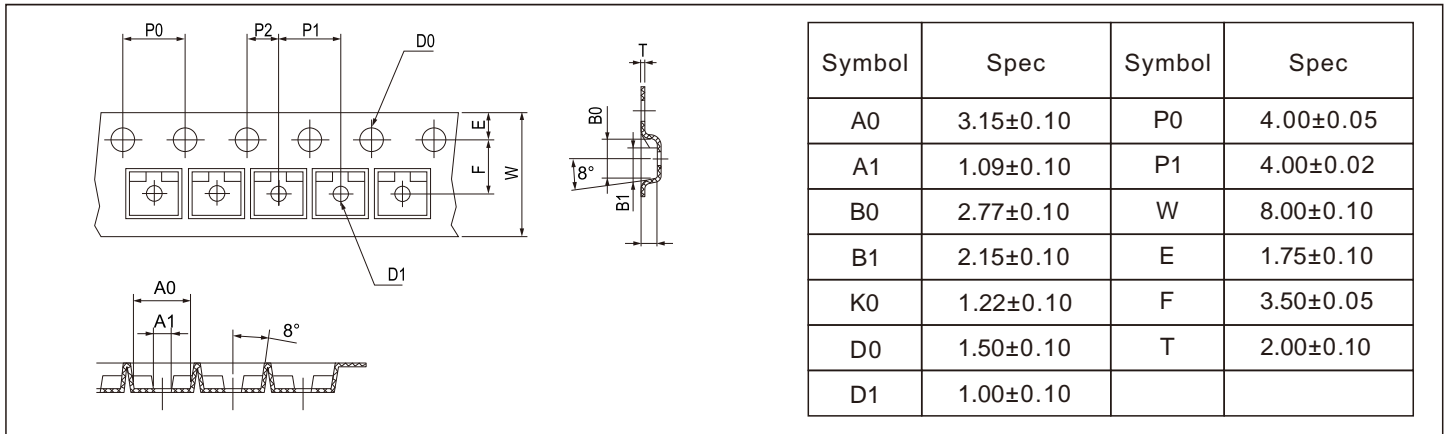
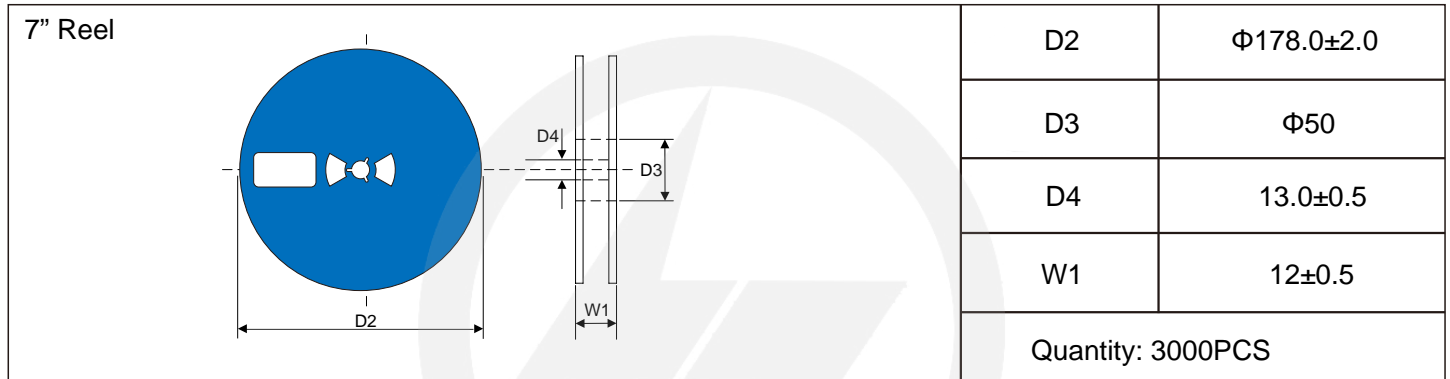
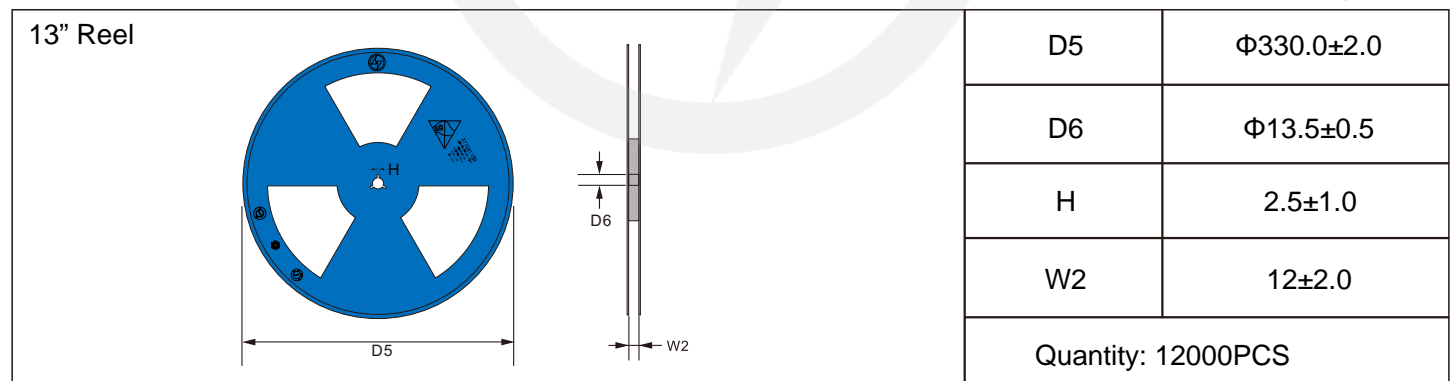
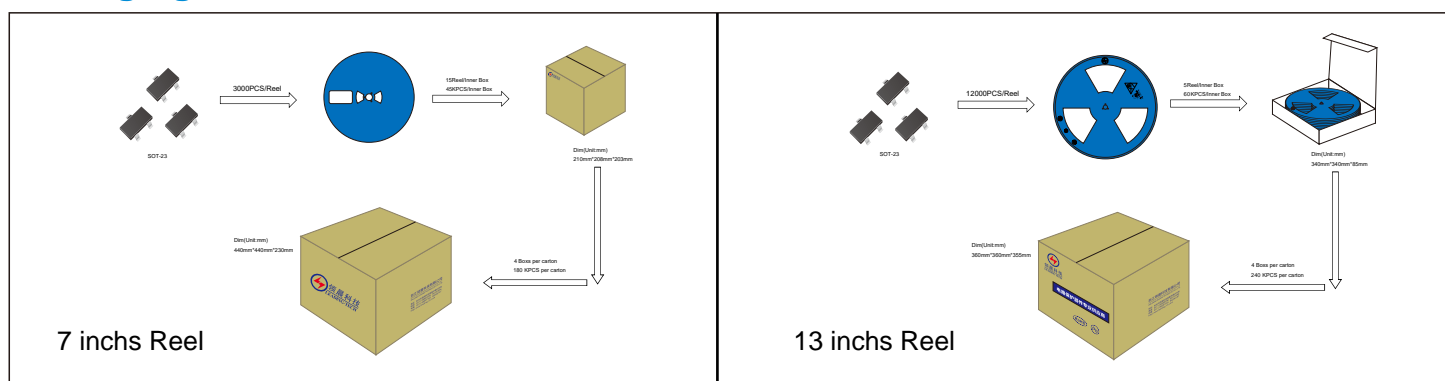


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

SOT-23 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 Diemensions
Unit : mm

Reel Dimensions
Unit : mm

Reel Dimensions
Unit : mm

Packaging




Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	3°C/second max.
Preheat	
-Temperature Min (T _{S min})	150°C
-Temperature Max (T _{S max})	200°C
-Time (min to max) (t _s)	60-180 seconds
T _{S max} to T _L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T _L)	217°C
-Time (t _L)	60-150 seconds
Peak Temperature (T _P)	260°C
Time within 5°C of actual Peak Temperature (t _p)	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	2025.06.30	2025.06.30	3.0	New file	/	Ding	
02	2026.03.06	2026.03.06	3.1	Package outline E1(max)=2.6mm	/	Ding	