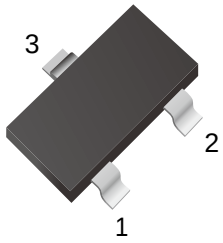
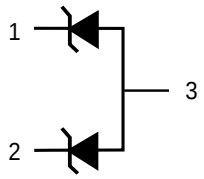
2-Line Uni-directional TVS Diode Array

Features

- 550W peak pulse power (8/20μs)
- Protects one two uni-directional line(s)
- 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) 42A (8/20μs)
- Lead free in comply with EU RoHS 2011/65/EU directives





Machanical Data

- Case: SOT-23
- Approx. Weight: 8.1mg
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below

Applications

- Peripherals
- Industrial Equipment
- Notebook Computers
- Portable Instrumentation
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs) and Pagers

Ordering Information

Part Number	Marking	Shipping	Reel
LTE23T03A02H-TR3	S33H	3000PCS Tape&Reel	7 inchs
LTE23T03A02H-TR12	S33H	12000PCS Tape&Reel	13 inchs

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	550	W
Peak Pulse Current (8/20μs)	I_{PP}	42	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	Pin 1 to Pin 3 or Pin 2 to Pin 3
Breakdown Voltage	V_{BR}	3.5			V	I_T = 1mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 3.3V
Forward Voltage	V_F		0.8	1.2	V	I_F = 10mA
Clamping Voltage	V_C		7	8	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C		12	15	V	I_{PP} = 42A (8 x 20μs pulse)
Junction Capacitance	C_J		360		pF	VR = 0V, f = 1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3
Junction Capacitance	C_J		180		pF	VR = 0V, f = 1MHz, Pin 1 to Pin 2

Characteristic Curves

Fig.1 Junction Capacitance vs. Reverse Voltage

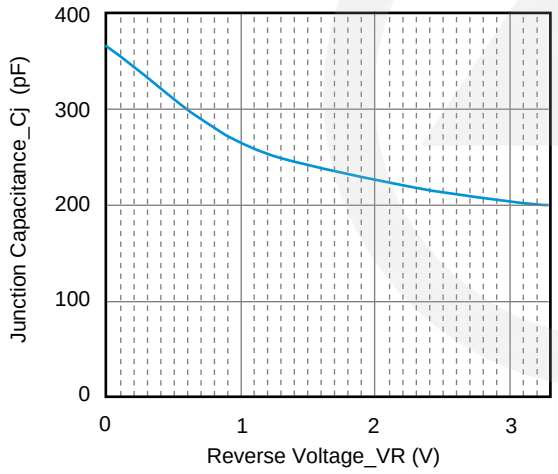


Fig.2 Peak Pulse Power vs. Pulse Time

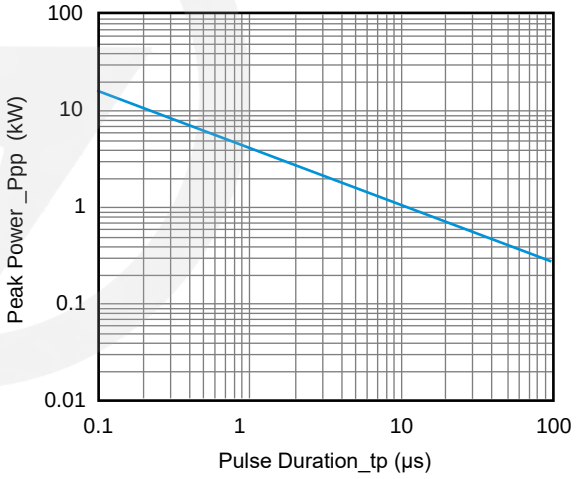


Fig.3 Clamping Voltage vs. Peak Pulse Current

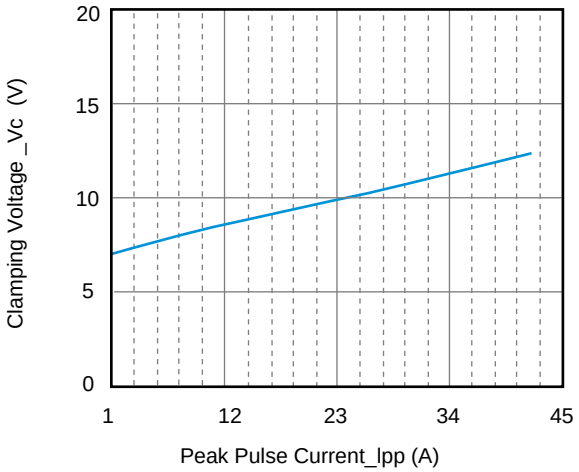


Fig.4 Power Derating Curve

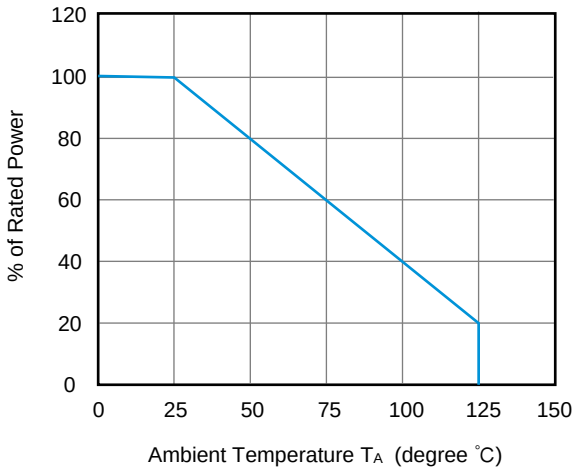


Fig.5 8 X 20μs Pulse Waveform

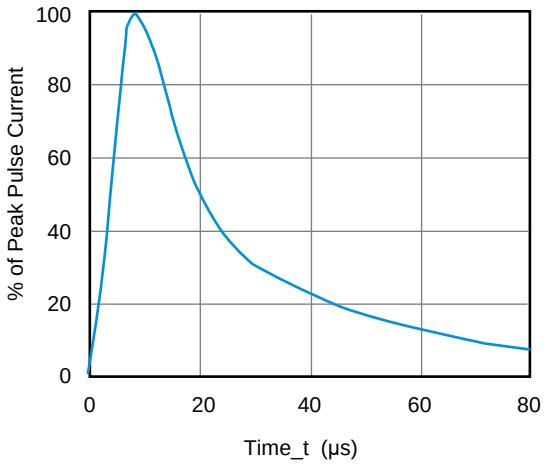
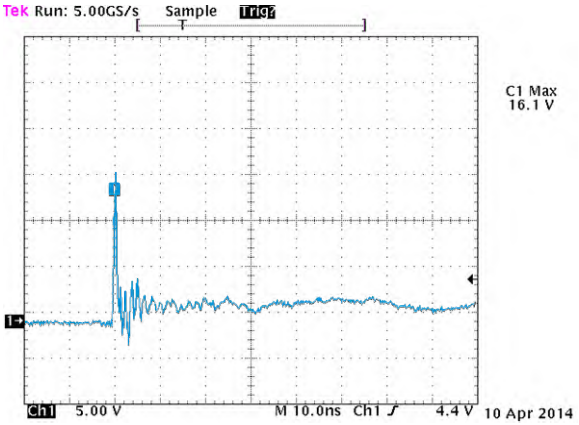
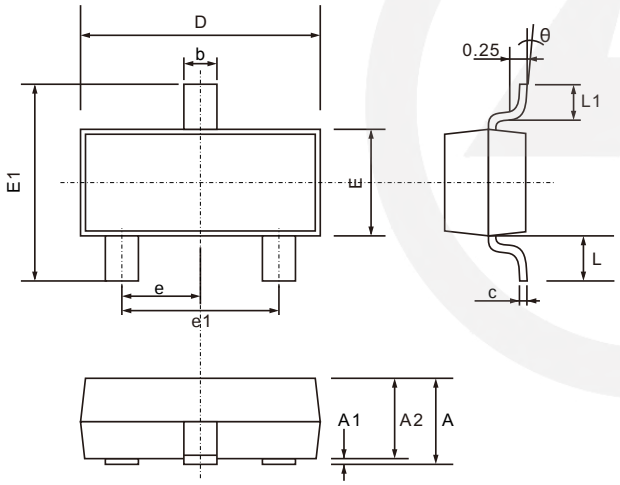


Fig.6



Note：Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

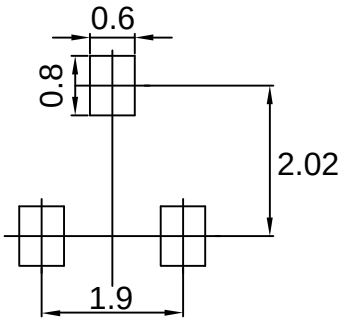
SOT-23 Package Outline



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°

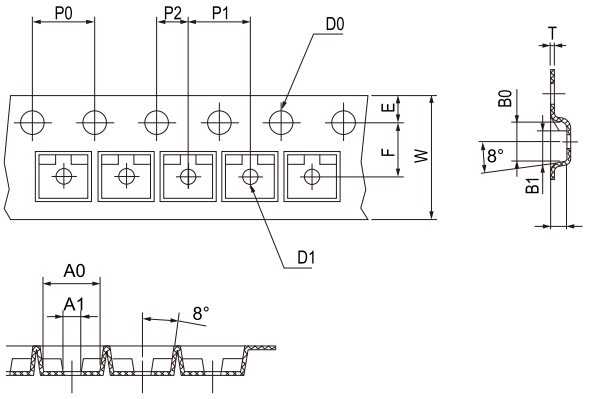
SOT-23 Suggested Pad Layout



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

Carrier Tape Diemensions

Unit：mm

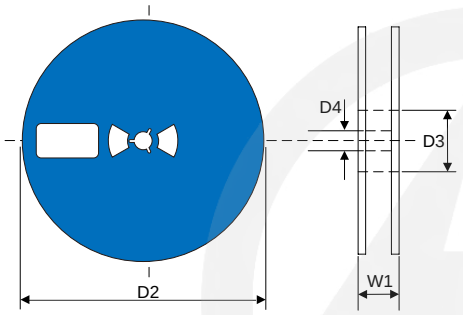


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Diemensions

Unit：mm

7” Reel

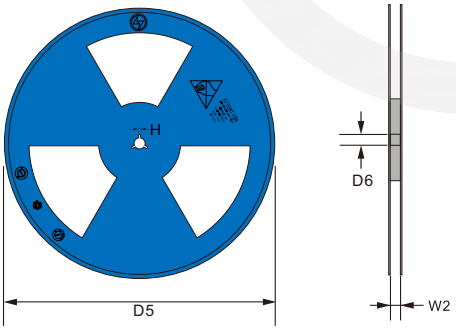


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Diemensions

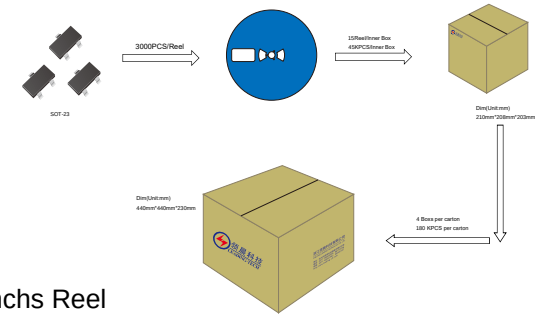
Unit：mm

13” Reel

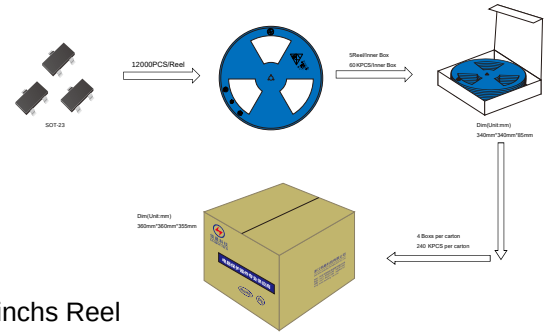


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



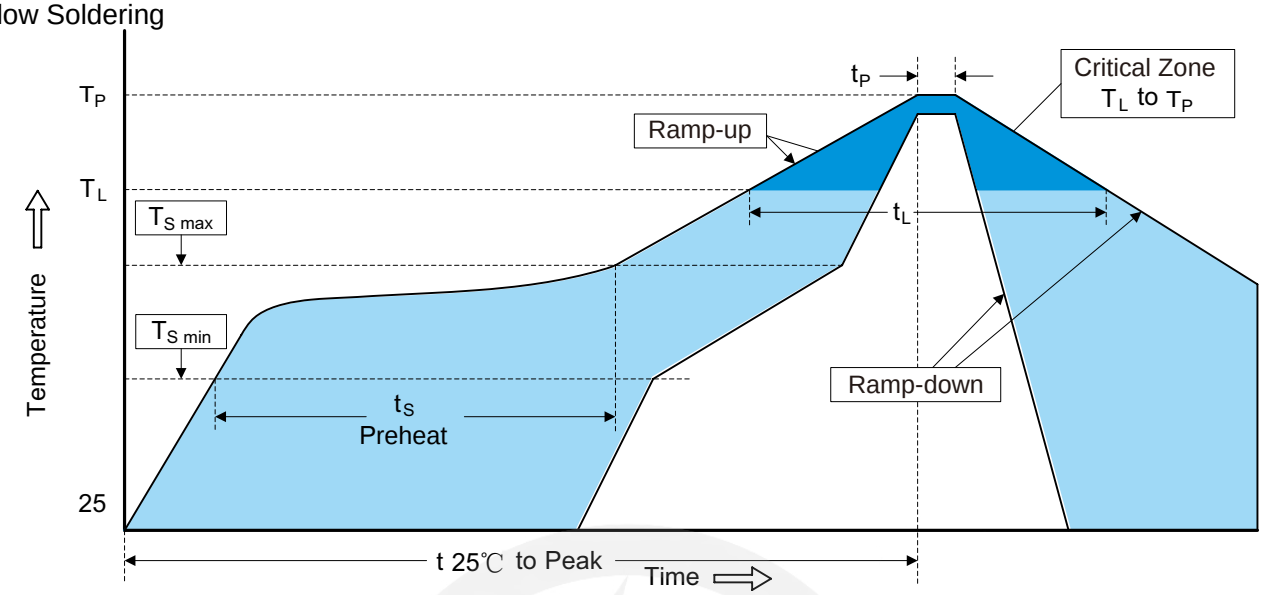
7 inchs Reel



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	2025.07.29	2025.07.29	3.0	New file	/	Ding	
02	2026.03.06	2026.03.06	3.1	Package outline E1(max)=2.6mm	/	Ding	