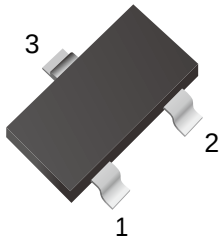
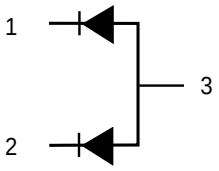
TVS Diode Array

Features



- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- 550 Watts Peak Pulse Power per (tp=8/20μs)
- Protects one bidirectional line or two unidirectional lines
- Low clamping voltage
- Working voltages : 12V
- Low leakage current
- Lead free in comply with EU RoHS 2011/65/EU directives



Machanical Data

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

Applications

- Cellular Handsets and Accessories
- Portable Electronics
- Industrial Controls
- Set-Top Box
- Servers, Notebook, and Desktop PC

Ordering Information

Part Number	Marking	Shipping	Reel
LTE23A12L02-5-TR3	12C or SG2	3000PCS Tape&Reel	7 inchs
LTE23A12L02-5-TR12	12C or SG2	12000PCS Tape&Reel	13 inchs

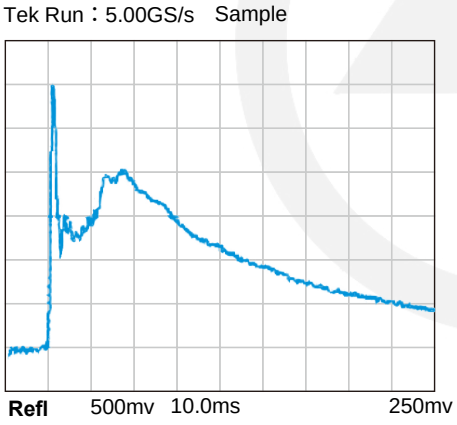
Absolute Maximum Ratings

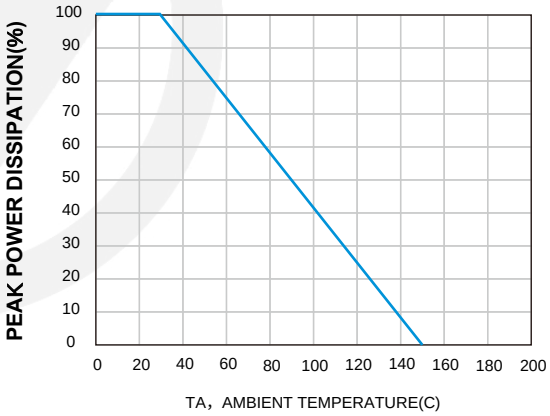
Symbol	Parameter	Value	Unit
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	kV
P_{PP}	Peak Pulse Power (8/20μs)	550	W
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C
T_L	Lead Soldering Temperature	260 (10 sec.)	°C

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage				12	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	13.3			V
I_R	Reverse Leakage Current	V_{RWM} = 12V			1.0	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs			19	V
V_C	Clamping Voltage	I_{PP} = 22A, t_p = 8/20μs			25	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		110	150	pF

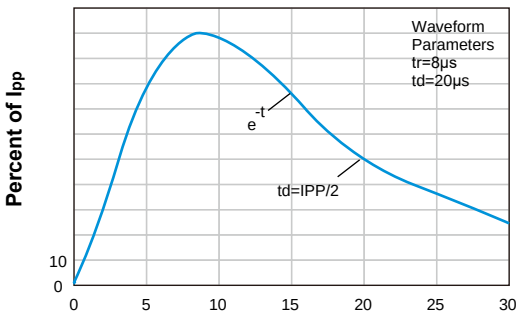
Characteristic Curves





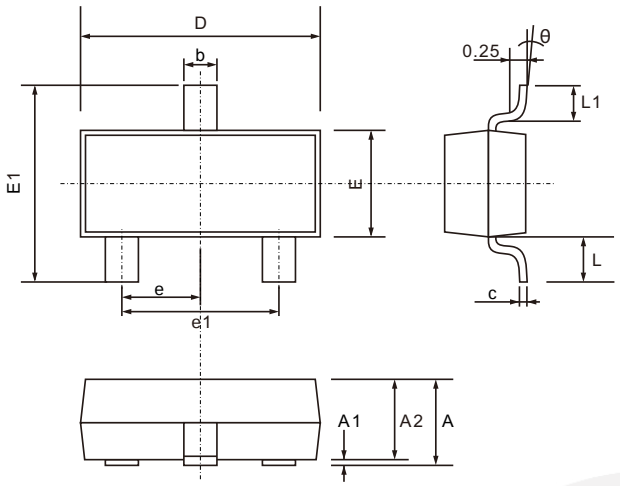
Power Derating Curve

Pulse Waveform



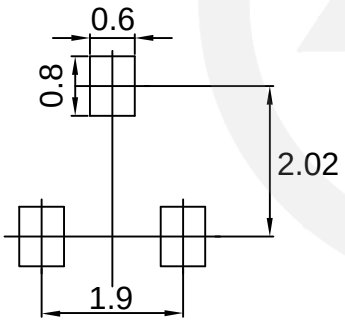
SOT-23 Package Outline

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°

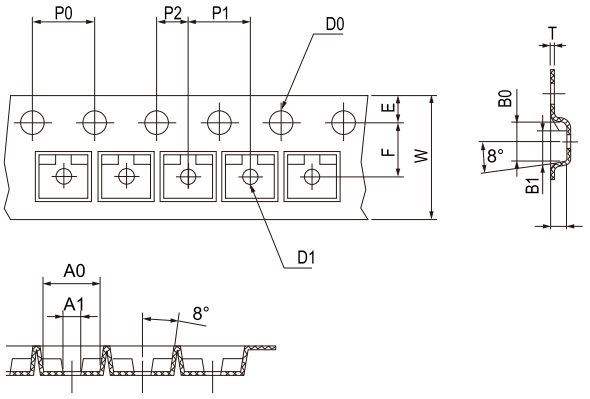
SOT-23 Suggested Pad Layout



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

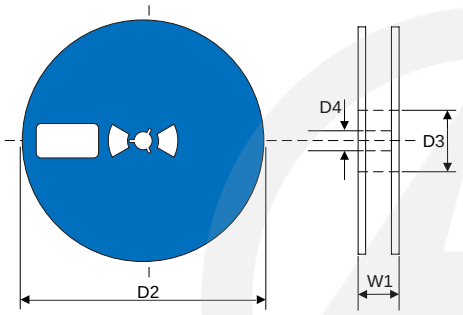


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Diemensions

Unit：mm

7” Reel

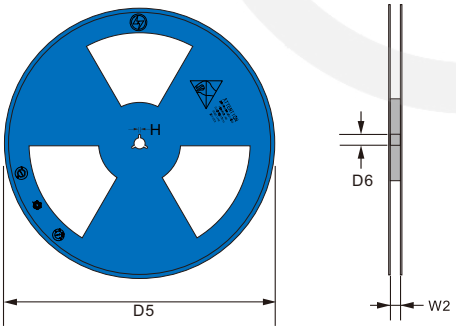


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Diemensions

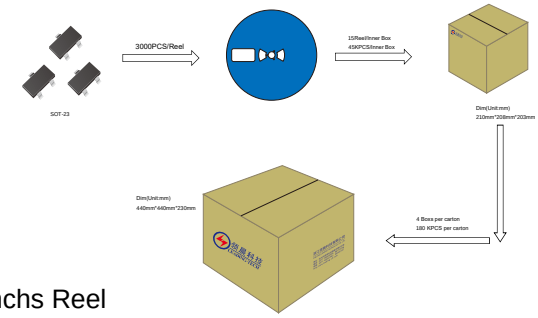
Unit：mm

13” Reel

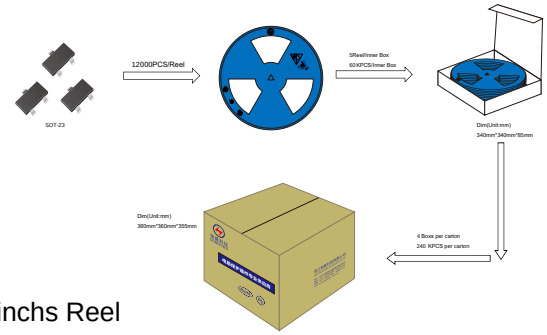


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



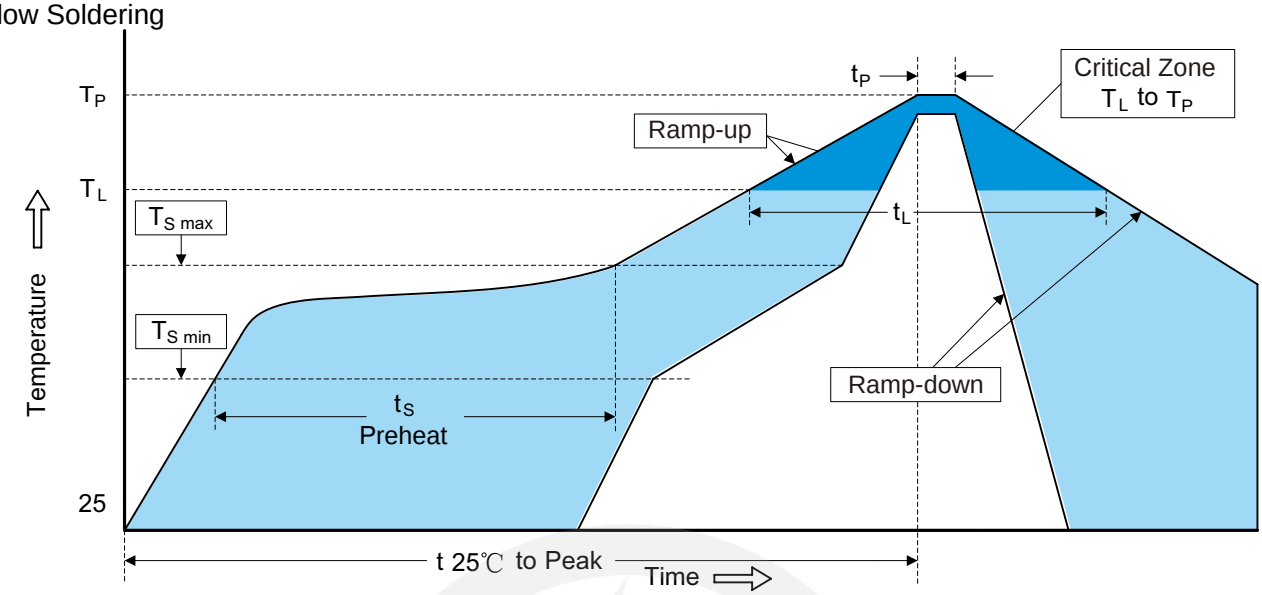
7 inchs Reel



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	2024.03.18	2024.03.18	3.0	New file	/	Ding	
02	2025.06.18	2025.06.18	3.1	Update packaging information	/	Ding	
03	2026.03.06	2026.03.06	3.2	Package outline E1(max)=2.6mm	/	Ding	