

# TVS/ESD Arrays

RLST236Axx4V Series

## TVS/ESD Arrays - RLST236Axx4V Series

### Features

- 350 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Working voltages: 5V、12V、15V、24V
- Low Leakage Current
- Low operating and clamping voltages
- Lead Free/RoHS compliant
- Solid-state silicon avalanche technology
- Provides ESD protection to IEC61000-4-2(ESD):
  - ±15kV (air discharge)
  - ±8kV (contact discharge)



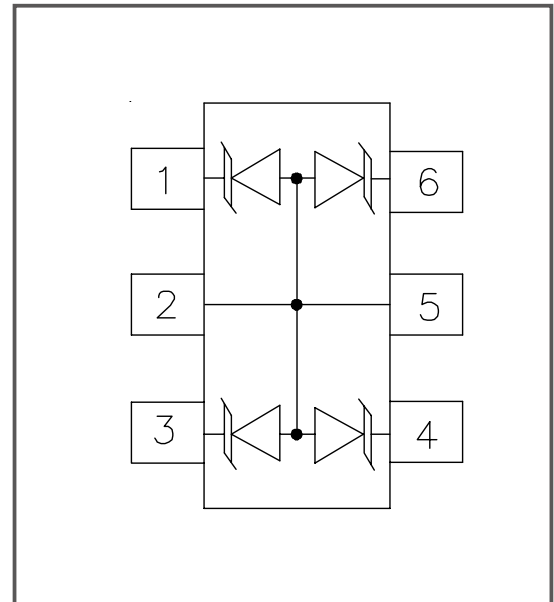
### Mechanical Characteristics

- SOT-23-6L package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel per EIA 481
- Lead Finish: Matte tin
- RoHS Compliant

### Applications

- USB Power & Data Line Protection
- Ethernet 10BaseT
- I<sup>2</sup>C Bus Protection
- Video Line Protection
- T1/E1 secondary IC Side Protection
- Portable Electronics
- Microcontroller Input Protection
- WAN/LAN Equipment
- ISDN S/T Interface

### Pinout and Functional Block Diagram



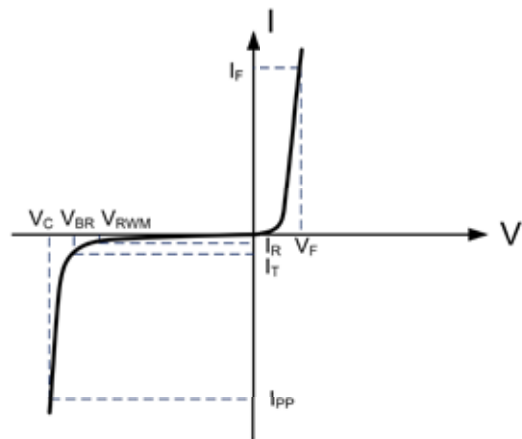
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### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =8/20µs)	P <sub>PK</sub>	350	Watts
ESD Voltage (Contact)	V <sub>ESD</sub>	±8	Kv
ESD Voltage (Air)	V <sub>ESD</sub>	±15	Kv
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature	T <sub>J</sub>	-55 to +125	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

### Electrical Parameters (T=25°C)

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>



### Electrical Characteristics Per Lin (@ 25°C Unless Otherwise Specified)

Type Number	Reverse Stand-Off Voltage	Minimum Breakdown Voltage	Peak Pulse Voltage @8/20µS	Peak Pulse Current @8/20µS	Reverse Leakage @V <sub>RWM</sub>	Typical Capacitance
	V <sub>RWM</sub>	V <sub>BR@1mA</sub>	V <sub>C@1A</sub>	I <sub>PP</sub>	I <sub>R@V<sub>RWM</sub></sub>	DC=0V
	V	V	V	A	µA	C <sub>J@ 1 MHz</sub>
RLST236A054V	5	6.0	9.8	24	20	400
RLST236A124V	12	13.3	19	15	1	150
RLST236A154V	15	16.7	24	12	1	125
RLST236A244V	24	26.7	40	8	1	75

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### Characteristic Curves

Fig1. 8/20µs Pulse Waveform

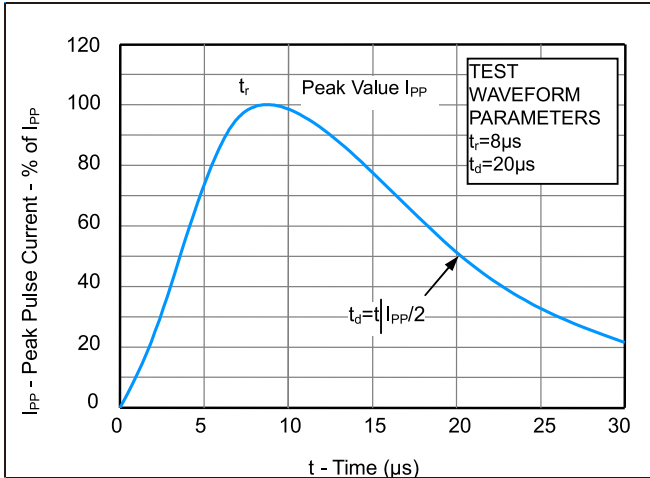


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

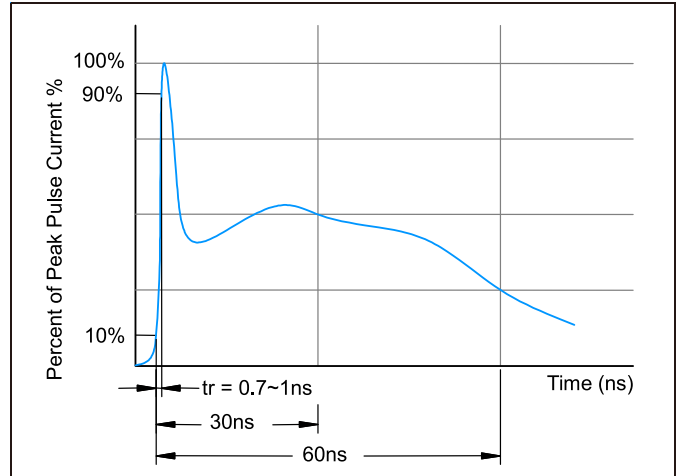


Fig3. Power Derating Curve

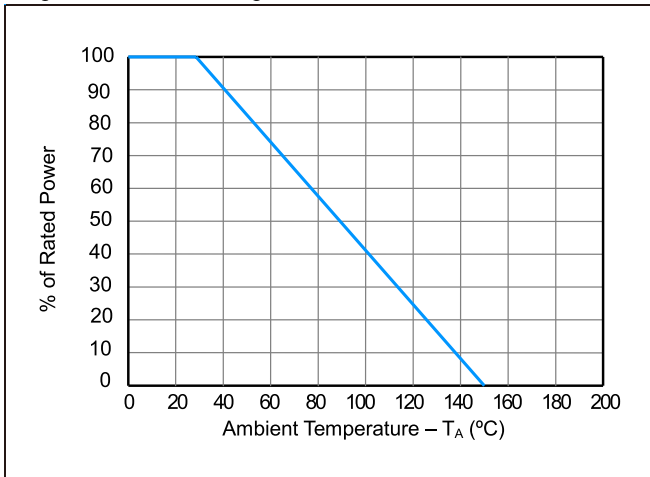
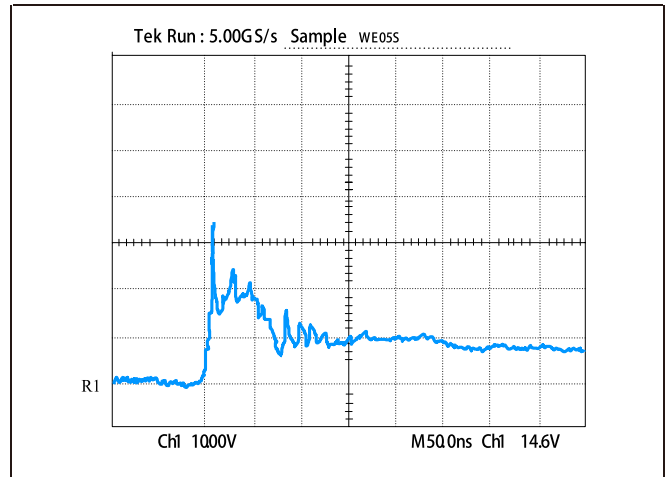
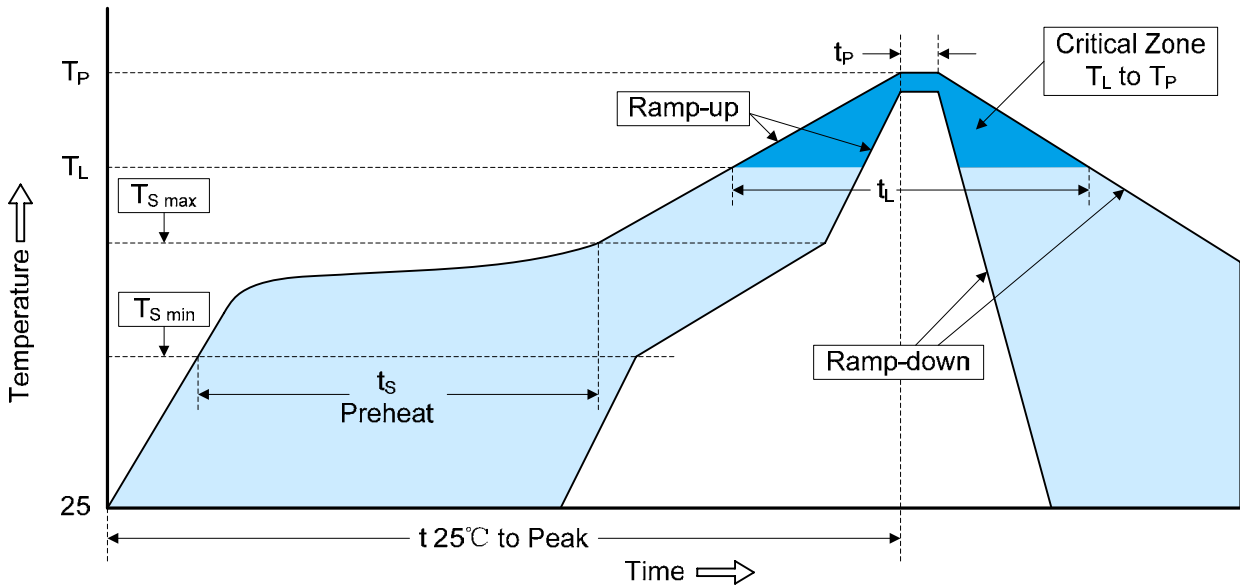


Figure 4: ESD Clamping (8kV Contact per IEC 61000-4-2)



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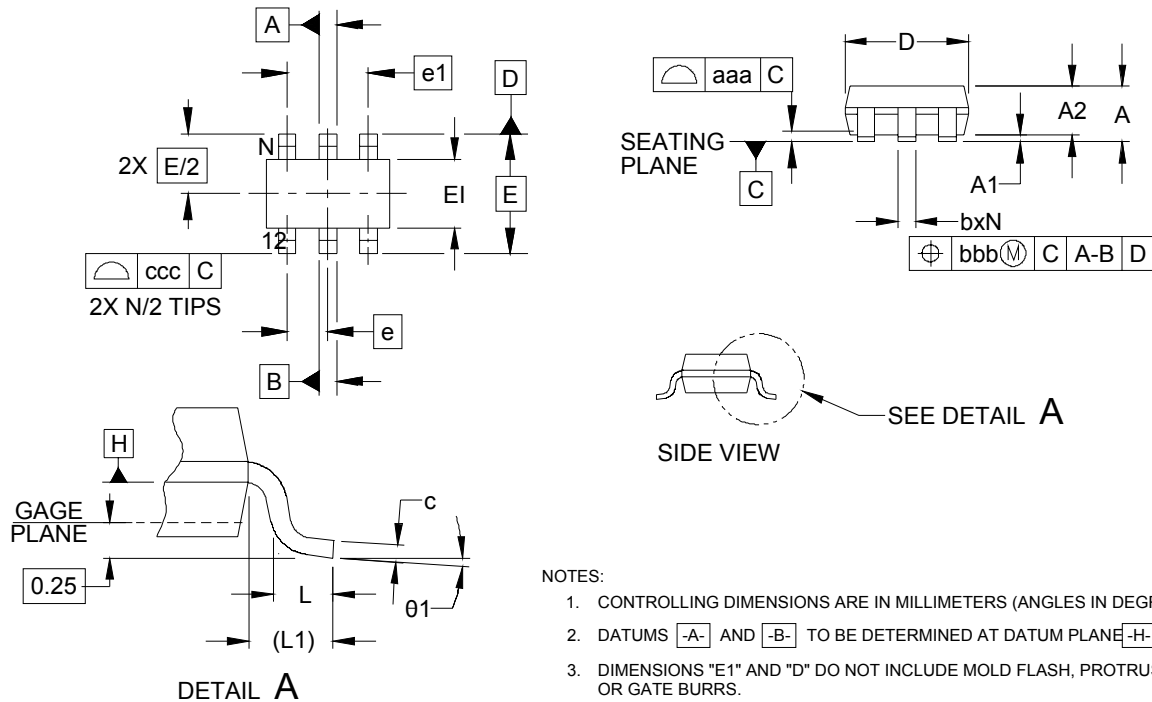
### Recommended Soldering Conditions



Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat	150°C
-Temperature Min ( $T_{S\ min}$ )	200°C
-Temperature Max ( $T_{S\ max}$ )	60-180 seconds
-Time (min to max) ( $t_s$ )	
$T_{S\ max}$ to $T_L$	3°C/second max.
-Ramp-up Rate	
Time maintained above:	217°C
-Temperature ( $T_L$ )	60-150 seconds
-Time ( $t_L$ )	
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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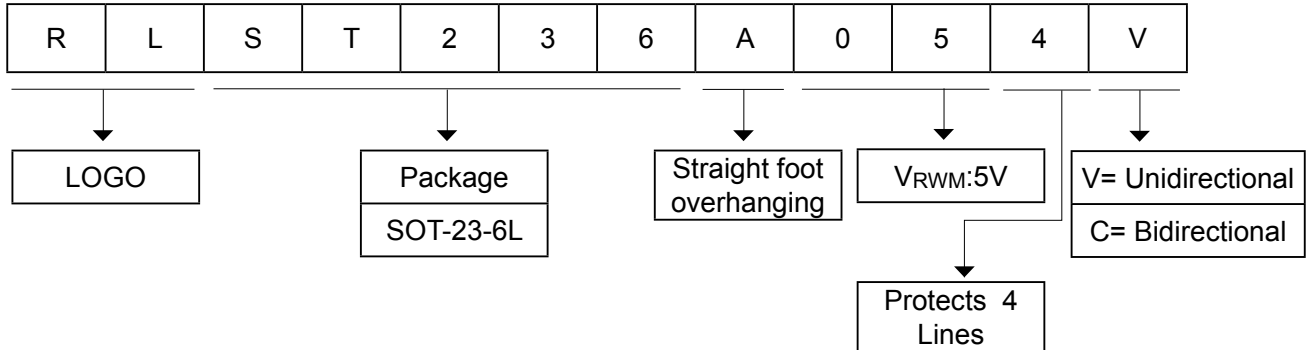
### Package dimension SOT-23-6L



DIM	Dimensions					
	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.035	-	0.057	0.90	-	1.45
A	0.000	-	0.006	0.00	-	0.15
A2	0.035	0.045	0.051	0.90	1.15	1.30
b	0.010	-	0.020	0.25	-	0.50
c	0.003	-	0.009	0.08	-	0.22
D	0.110	0.114	0.122	2.80	2.90	3.10
E1	0.60	0.063	0.069	1.50	1.60	1.75
E		0.110 BSC			2.80 BSC	
e		0.037 BSC			0.95 BSC	
e1		0.075 BSC			1.90 BSC	
L	0.012	0.018	0.024	0.30	0.45	0.60
L1		(0.024)			(0.60)	
N		6			6	
$\theta$	0°	-	10°	°	-	10°
aaa		0.004			0.10	
bbb		0.008			0.20	
ccc		0.008			0.20	

## TVS/ESD Arrays - RLST236Axx4V Series

### Part Number Code



### Ordering Information

Part Number	Package	Min. Order Qty.
RLST236Axx4V	SOT-23-6L	3000pcs

## RuiLongYuan Electronics Co., Ltd.

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