



# TVS/ESD Arrays

**RLST363A054LV Series**

## TVS/ESD Arrays - RLST363A054LV Series

### Features

- 150 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Working voltages: 5V
- 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)



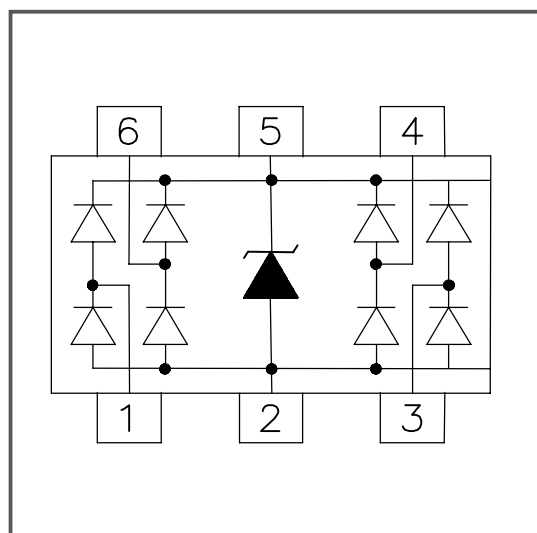
### Mechanical Characteristics

- SOT-363 package
- Molding compound flammability rating: UL 94V-0
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

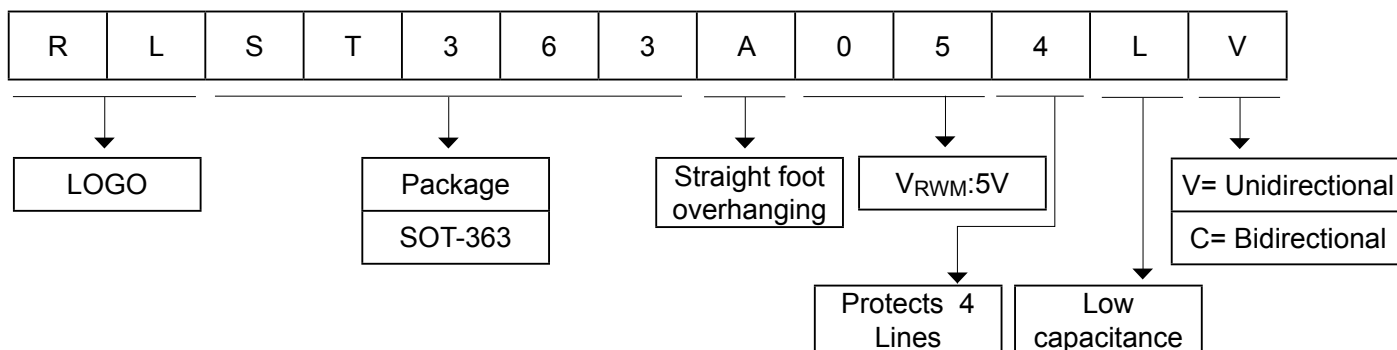
### Applications

- 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



### Part Number Code



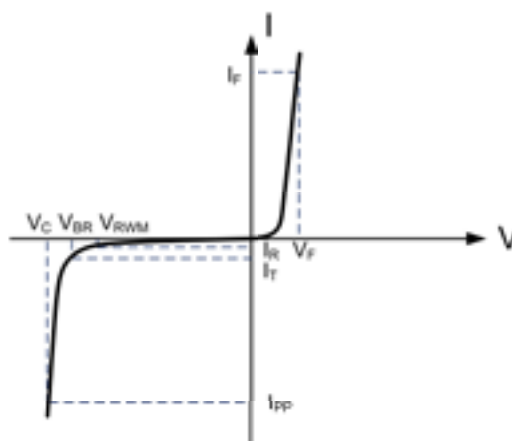
## TVS/ESD Arrays - RLST363A054LV Series

### Absolute Maximum Rating

| Rating                                 | Symbol    | Value         | Units       |
|----------------------------------------|-----------|---------------|-------------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ ) | $P_{PK}$  | 150           | Watts       |
| ESD Voltage (Contact)                  | $V_{ESD}$ | $\pm 8$       | Kv          |
| ESD Voltage (Air)                      | $V_{ESD}$ | $\pm 15$      | Kv          |
| Lead Soldering Temperature             | $T_L$     | 260 (10 sec.) | $^{\circ}C$ |
| Operating Temperature                  | $T_J$     | -55 to +125   | $^{\circ}C$ |
| Storage Temperature                    | $T_{STG}$ | -55 to +150   | $^{\circ}C$ |

### Electrical Parameters (T=25 $^{\circ}C$ )

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



### Electrical Characteristics(@ 25 $^{\circ}C$ Unless Otherwise Specified)

| Type Number   | Reverse Stand-Off Voltage | Minimum Breakdown Voltage | Peak Pulse Voltage @8/20 $\mu s$ | Peak Pulse Current @8/20 $\mu s$ | Reverse Leakage @ $V_{RWM}$ | Typical Capacitance |
|---------------|---------------------------|---------------------------|----------------------------------|----------------------------------|-----------------------------|---------------------|
|               | $V_{RWM}$                 | $V_{BR}@1mA$              | $V_C@1A$                         | $I_{PP}$                         | $I_R@V_{RWM}$               | $C_J@1MHz$          |
|               | V                         | V                         | V                                | A                                | $\mu A$                     | pF                  |
| RLST363A054LV | 5                         | 6                         | 15                               | 6                                | 1                           | 2                   |

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### Characteristic Curves

Fig1. 8/20 $\mu$ s Pulse Waveform

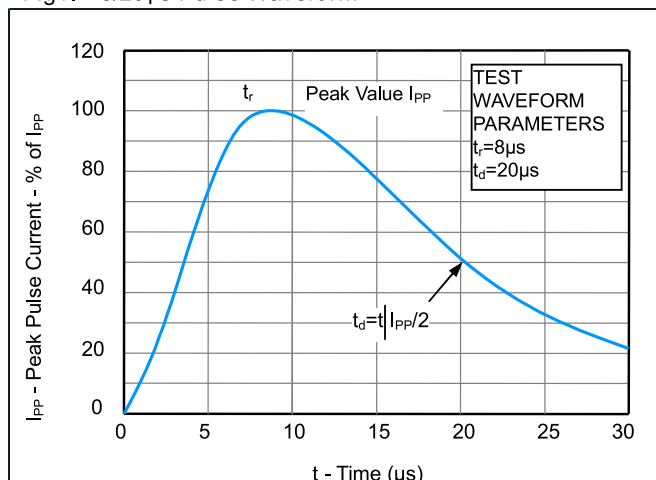


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

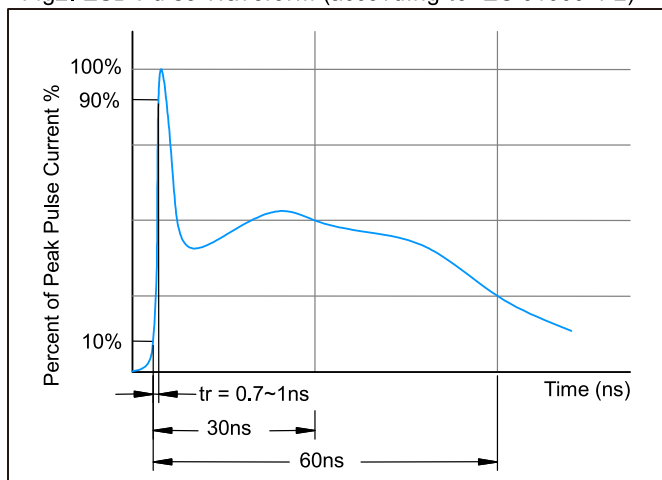


Fig3. Power Derating Curve

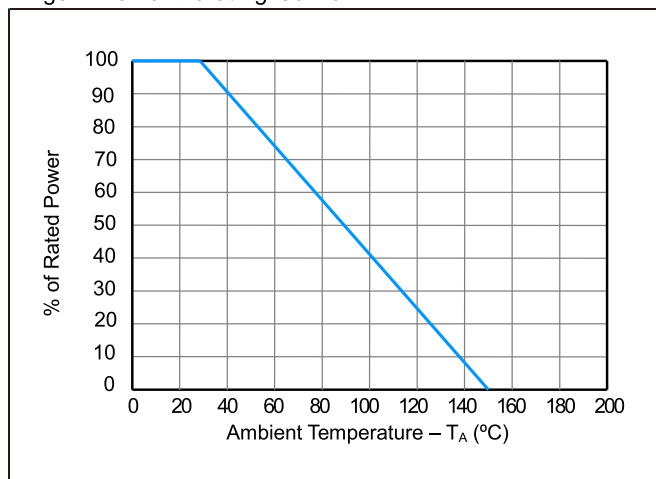
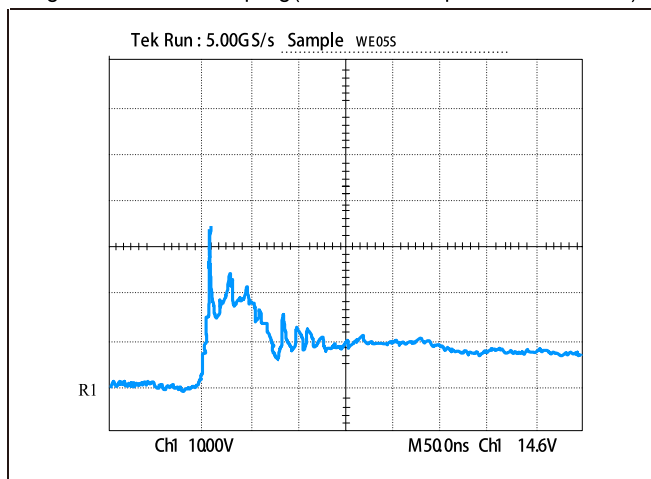
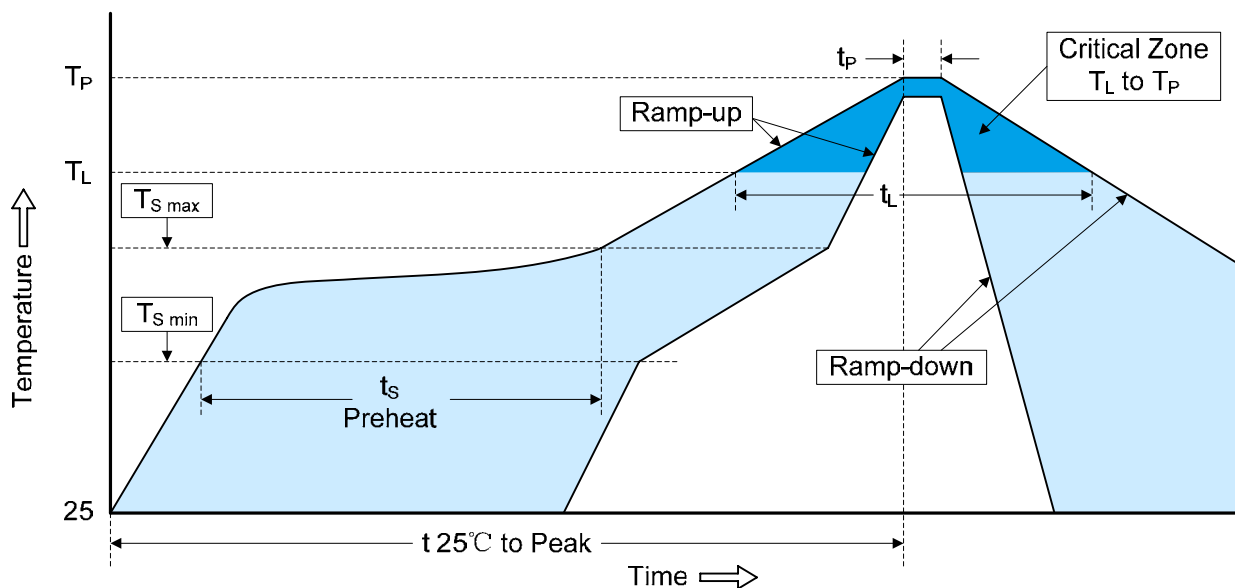


Figure 4: ESD Clamping (8kV Contact per IEC 61000-4-2)



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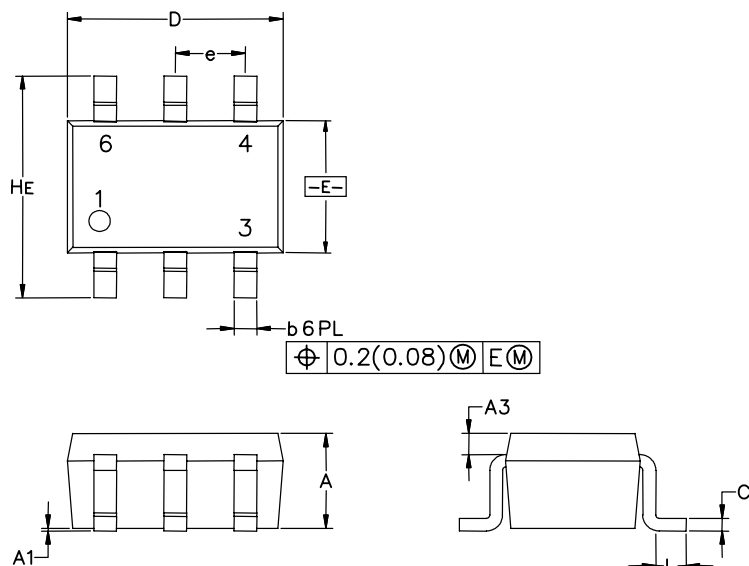
### Recommended Soldering Conditions



| 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.   |

## TVS/ESD Arrays - RLST363A054LV Series

### Package Dimension SOT-363



| Symbol | Inches    |       |       | Millimeters |      |      |
|--------|-----------|-------|-------|-------------|------|------|
|        | Min.      | Nom.  | Max.  | Min.        | Nom. | Max. |
| A      | 0.031     | 0.037 | 0.043 | 0.80        | 0.95 | 1.10 |
| A1     | 0.000     | 0.002 | 0.004 | 0.00        | 0.05 | 0.10 |
| A3     | 0.08 REF  |       |       | 0.2 REF     |      |      |
| b      | 0.004     | 0.008 | 0.012 | 0.10        | 0.21 | 0.30 |
| C      | 0.004     | 0.005 | 0.010 | 0.10        | 0.14 | 0.25 |
| D      | 0.070     | 0.078 | 0.086 | 1.80        | 2.00 | 2.20 |
| E      | 0.045     | 0.049 | 0.053 | 1.15        | 1.25 | 1.35 |
| e      | 0.026 BSC |       |       | 0.65 BSC    |      |      |
| L      | 0.004     | 0.008 | 0.012 | 0.10        | 0.20 | 0.30 |
| HE     | 0.078     | 0.082 | 0.086 | 2.00        | 2.10 | 2.20 |