



# TVS/ESD Arrays

RLDSO10Q054LV Series

## TVS/ESD Arrays - RLDSON10Q054LV Series

### Features

- 150 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- 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)



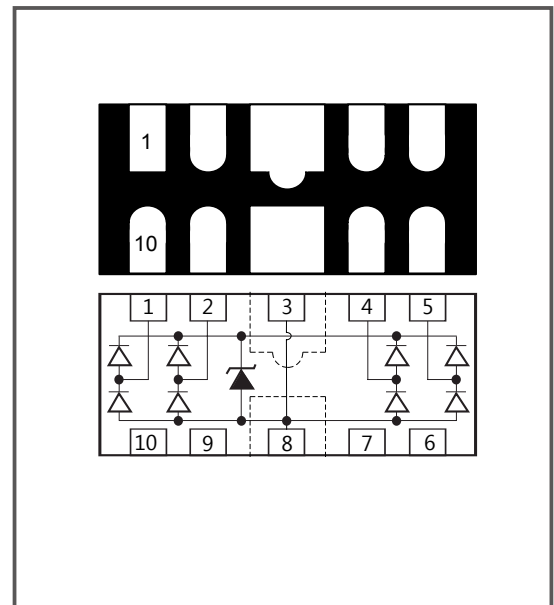
### Mechanical Characteristics

- DSON-10 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel per EIA 481
- Lead Finish: Matte tin
- RoHS Compliant

### Applications

- High Definition Multimedia Interface (HDMI)
- Digital Visual Interface (DVI)
- Unified Display Interface (UDI)
- Display Port Interface
- MDDI Ports
- PCI Express
- Serial ATA

### Pinout and Functional Block Diagram



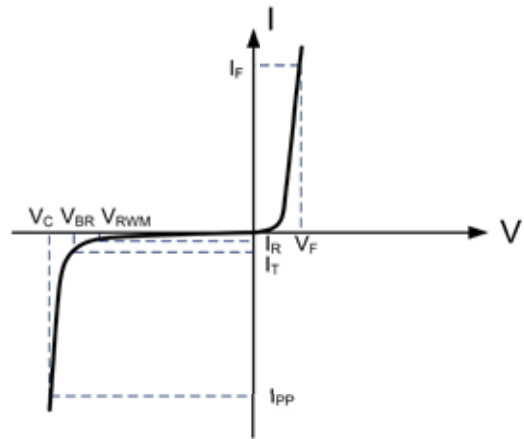
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### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =8/20μs)	P <sub>PK</sub>	150	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 C <sub>J@ 1 MHz</sub>
	V	V	V	A	μA	pF
RLDSON10Q054LV	5	6	15	5	1	0.8

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### Characteristic Curves

Fig1. 8/20μs Pulse Waveform

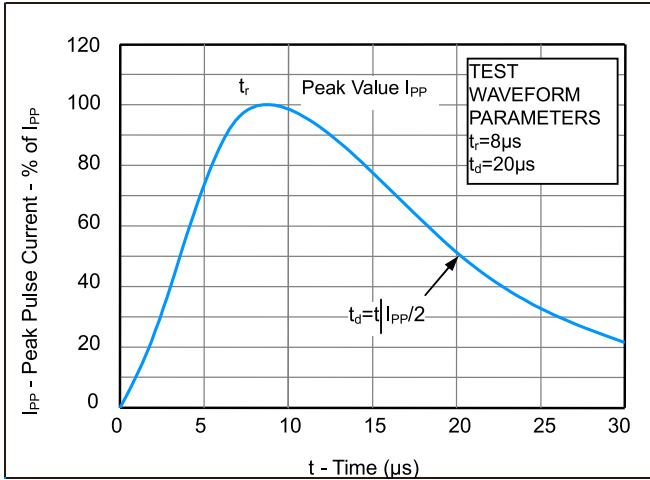


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

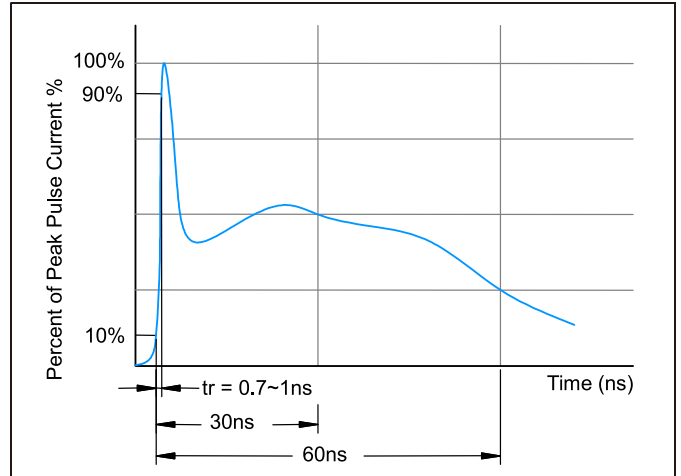


Fig3. Power Derating Curve

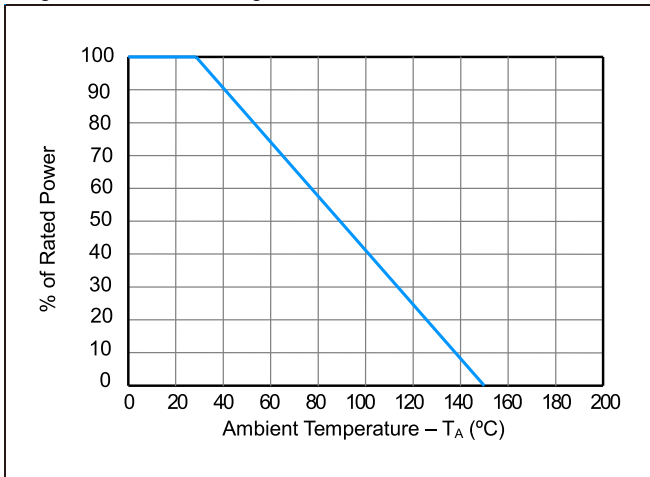
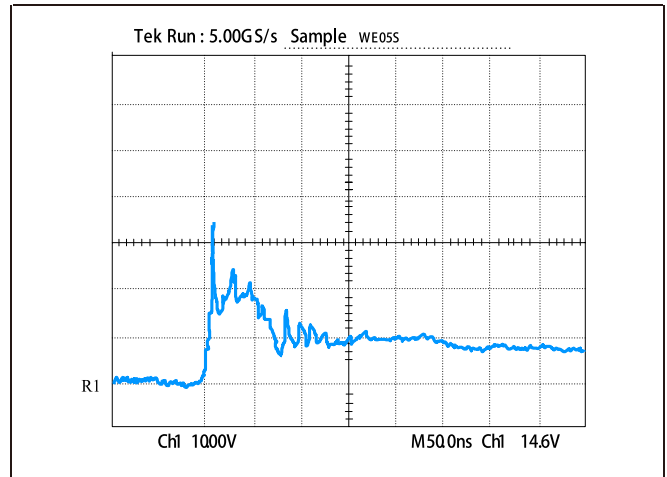
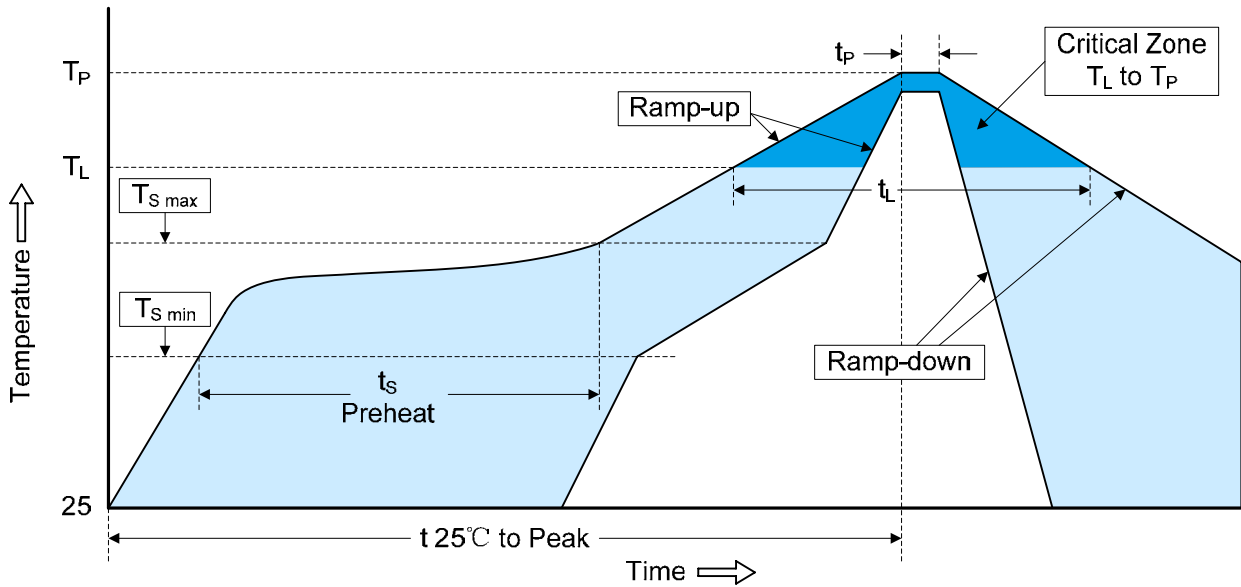


Figure 4: ESD Clamping (8kV Contact per IEC 61000-4-2)



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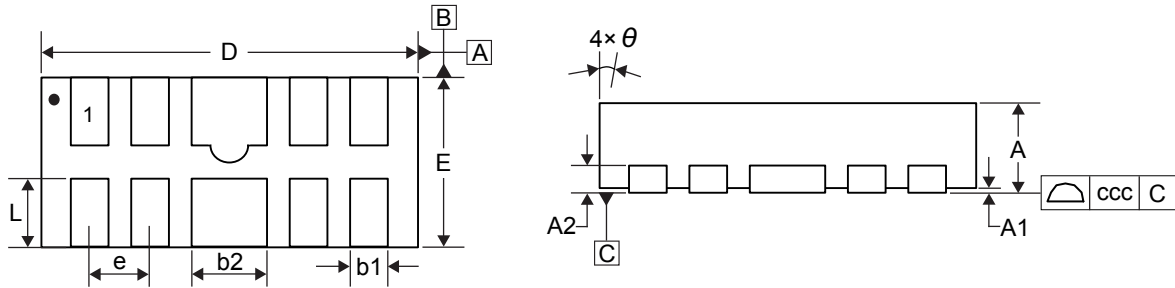
### Recommended Soldering Conditions



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T <sub>L</sub> to T <sub>P</sub> )	3°C/second max.
Preheat	150°C
-Temperature Min (T <sub>S min</sub> )	200°C
-Temperature Max (T <sub>S max</sub> )	60-180 seconds
-Time (min to max) (t <sub>s</sub> )	
T <sub>S max</sub> to T <sub>L</sub>	3°C/second max.
-Ramp-up Rate	
Time maintained above:	217°C
-Temperature (T <sub>L</sub> )	60-150 seconds
-Time (t <sub>L</sub> )	
Peak Temperature (T <sub>P</sub> )	260°C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

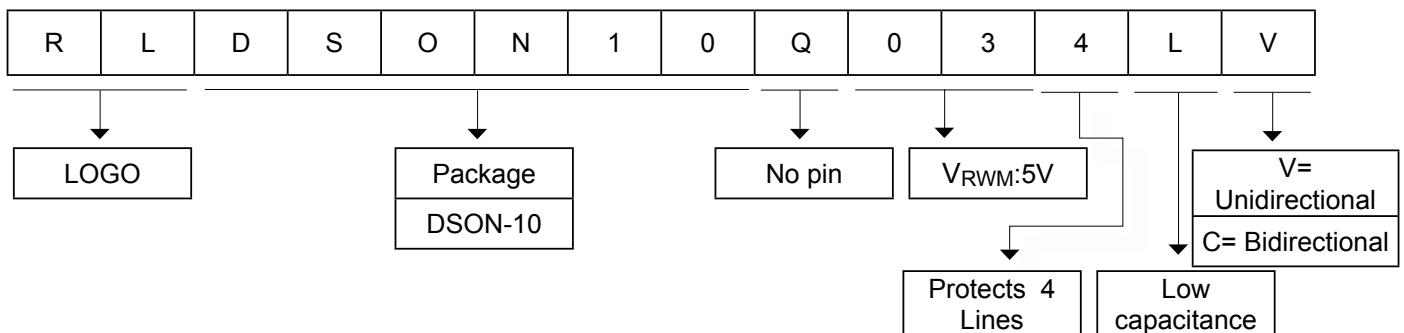
## TVS/ESD Arrays - RLDSON10Q054LV Series

### Package dimension DSON-10



DIM	Dimensions					
	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.020	0.023	0.26	0.50	0.58	0.65
A1	0.00	0.001	0.002	0.00	0.03	0.05
A2	-	0.005REF	-	-	0.13REF	-
b1	0.006	0.008	0.010	0.15	0.2	0.25
b2	0.014	0.016	0.018	0.35	0.40	0.45
D	0.094	0.098	0.120	2.45	2.50	2.53
E	0.035	0.039	0.043	0.90	1.00	1.10
e	-	0.020BSC	-	-	0.5BSC	-
L	-	-	0.002	-	-	0.05

### Part Number Code



### Ordering Information

Part Number	Package	Min. Order Qty.
RLDSON10Q054LV	DSON-10	3000pcs

## RuiLongYuan Electronics Co., Ltd.

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