

PROTECTION PRODUCTS

Description

The SRV05-4LA is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge).

Feature

- Low clamping voltage
- Protects one bidirectional or four unidirectional lines
- Working voltage: 5V
- Low leakage current
- Low capacitance:  $C_{I/O} - GND = 0.5pF$  typ.
- RoHS compliant
- Transient protection for high speed data Lines to IEC61000-4-2(ESD) $\pm 15kV$ (air), $\pm 15kV$  (Contact)

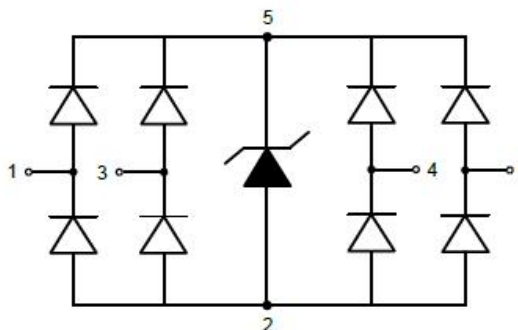
Ordering Information

- Device : SRV05-4LA
- Package : SOT23-6L
- Material : Halogen free
- Packing : Tape & Reel
- Quantity per reel : 3,000 PCS
- Flammability Rating : UL 94V-0
- Reel size : 7 inch

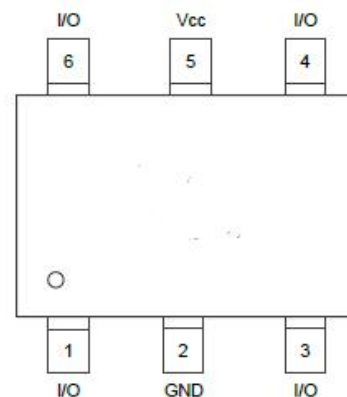
Applications

- USB 2.0
- HDMI 1.3
- SATA and eSATA
- DVI
- IEEE 1394
- PCI Express
- Portable Electronics
- Notebooks

Circuit Diagram



Schematic & Pin Configuration



**PROTECTION PRODUCTS**
**Ordering Information per line@25°C ( unless otherwise specified)**

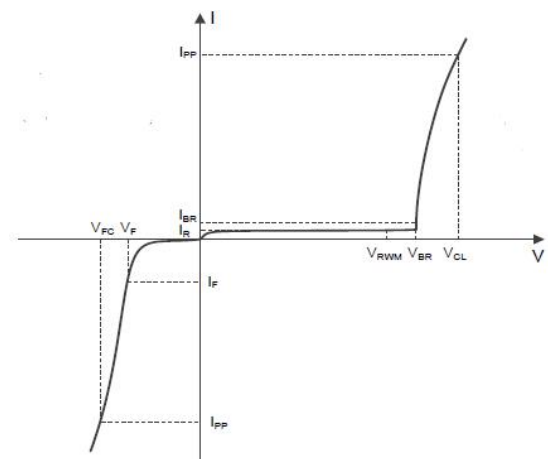
| Parameter                                       | Symbol           | Rating  | Unit |
|---|------------------|---------|------|
| Peak pulse power (tp = 8/20μs)                  | P <sub>pk</sub>  | 60      | W    |
| Peak pulse current (tp = 8/20μs)                | I <sub>PP</sub>  | 4       | A    |
| ESD according to IEC61000-4-2 air discharge     | V <sub>ESD</sub> | ±15     | kV   |
| ESD according to IEC61000-4-2 contact discharge |                  | ±15     |      |
| Junction temperature                            | T <sub>J</sub>   | 125     | °C   |
| Operating temperature                           | T <sub>OP</sub>  | -40~85  | °C   |
| Lead temperature                                | T <sub>L</sub>   | 260     | °C   |
| Storage temperature                             | T <sub>STG</sub> | -55~150 | °C   |

**Electrical Characteristics per line@25°C ( unless otherwise specified)**

| Parameter                 | Symbol           | Conditions   | Min. | Typ. | Max. | Units |
|---------------------------|------------------|--|------|------|------|-------|
| Reverse Stand-off Voltage | V <sub>RWM</sub> |  |      |      | 5    | V     |
| Reverse Breakdown Voltage | V <sub>BR</sub>  | I <sub>T</sub> =1mA                                    | 6    |      | 9.5  | V     |
| Reverse Leakage Current   | I <sub>R</sub>   | V <sub>RWM</sub> =5V                                   |      |      | 1    | uA    |
| Clamping Voltage          | V <sub>C</sub>   | I <sub>PP</sub> =1A tp=8/20us<br>Any I/O pin to Ground |      |      | 9    | V     |
| Clamping Voltage          | V <sub>C</sub>   | I <sub>PP</sub> =4A tp=8/20us<br>Any I/O pin to Ground |      |      | 15   | V     |
| Junction Capacitance      | C <sub>J</sub>   | V <sub>R</sub> =0V, f = 1MHz<br>Any I/O pin to Ground  |      | 0.5  | 0.8  | pF    |
|                           |                  | V <sub>R</sub> =0V, f = 1MHz<br>Any I/O pin to I/O pin |      | 0.25 | 0.4  |       |

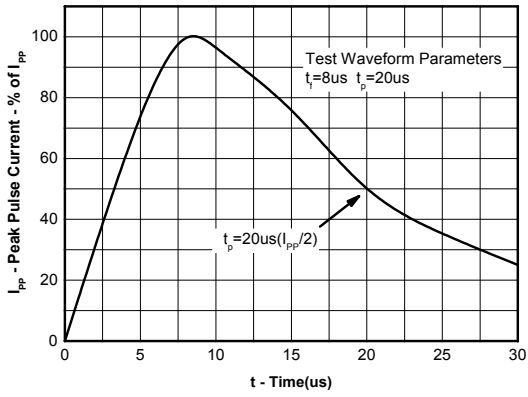
**Electronics Parameter**

| Symbol           | Parameter                                  |
|------------------|--|
| V <sub>RWM</sub> | Peak Reverse Working Voltage               |
| I <sub>R</sub>   | 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>PP</sub>  | Maximum Reverse Peak Pulse Current         |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>PP</sub>         |
| P <sub>PP</sub>  | Peak Pulse Power                           |
| C <sub>J</sub>   | Junction Capacitance                       |
| I <sub>F</sub>   | Forward Current                            |
| V <sub>F</sub>   | Forward Voltage @ I <sub>F</sub>           |

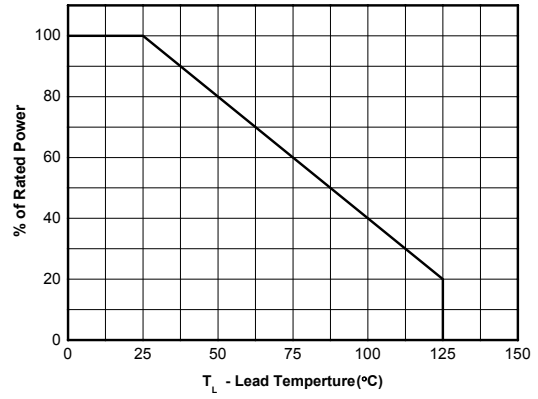


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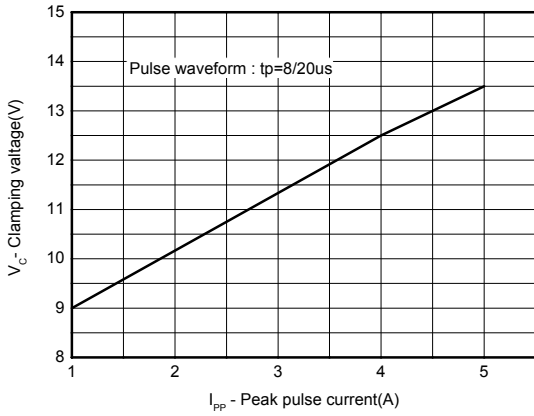
Typical Characteristics



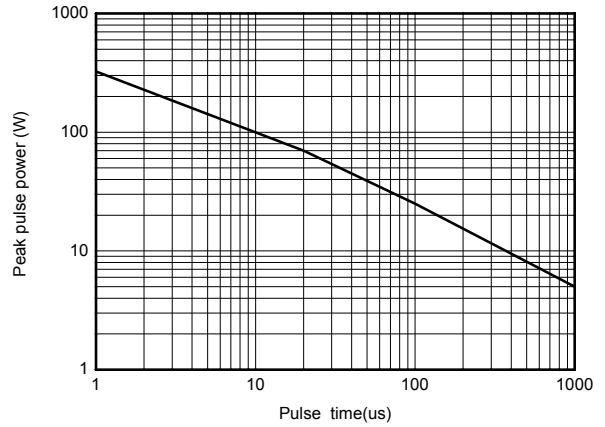
Pulse Waveform



Power Derating Curve



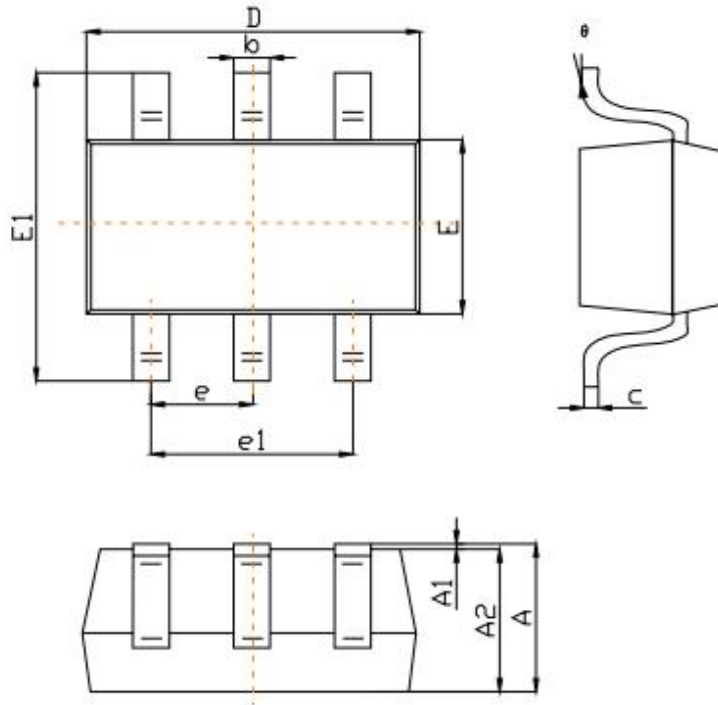
Clamping voltage vs. Peak pulse current



Non repetitive peak pulse power vs. Pulse time

PROTECTION PRODUCTS

Product dimension(SOT-23-6L)



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 |                      | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1     | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0,950(BSC)                |       | 0.037(BSC)           |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.300                     | 0.600 | 0.012                | 0.024 |
|        | 0°                        | 8°    | 0°                   | 8°    |

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