

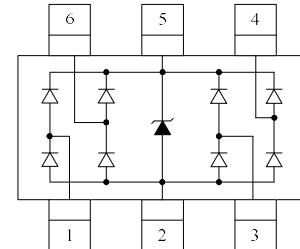
### DESCRIPTION

PESD5V0L5UY is an ultra-low capacitance Transient Voltage Suppressor (TVS) designed to protect high-speed data interfaces. With typical capacitance of 0.20pF (I/O to I/O) only, PESD5V0L5UY is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4(±15KV air, ±8KV contact discharge), IEC61000-4-4 (electrical fast transient-EFT) (40A, 5/50ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

PESD5V0L5UY uses small SOT-363 package.

Each

PESD5V0L5UY device can protect four high-speed data lines one Vcc line. The combined features of ultra-low capacitance, small size and high ESD robustness make PESD5V0L5UY ideal for high-speed data ports and high-frequency lines (e.g., HDMI & DVI) applications. The low clamping voltage of the PESD5V0L5UY guarantees a minimum stress on the protected IC.



### FEATURES

- Transient protection for high-speed data lines
  - IEC 61000-4-2(ESD) ±25KV(Air)
  - ±20KV(Contact)
  - IEC 61000-4-4(EFT)40A(5/50ns)
  - Cable Discharge Event(CDE)
- Package optimized for high-speed lines
- Small package(2.1mm\*2.3mm\*1.0mm)
- Protects four data lines and one Vcc line
- Low capacitance: 0.20pF (I/O to I/O)
- Low leakage current
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for ±8KV contact discharge

### MACHANICAL DATA

- SOT-363 package
- Flammability Rating: UL 94V-0
- Terminal: Matte tin plated.
- Packaging: Tape and Reel
- High temperature soldering guaranteed:260°C/10s
- Reel size: 7 inch

### APPLICATIONS

- Serial ATA
- MDDI Ports
- USB 2.0/3.0 Power and Data Line Protection
- Display Ports
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)

### ABSOLUTE MAXIMUM RATING

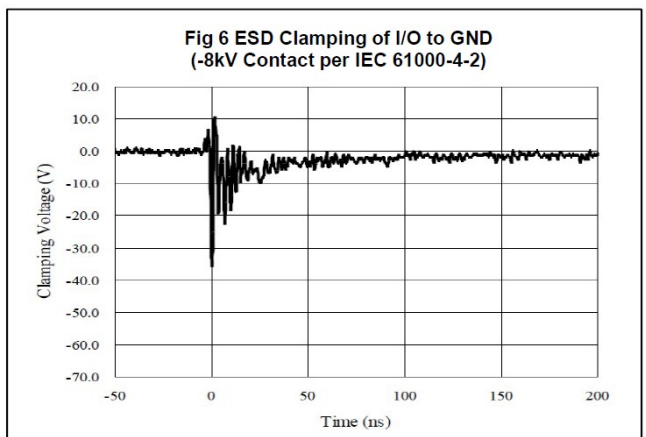
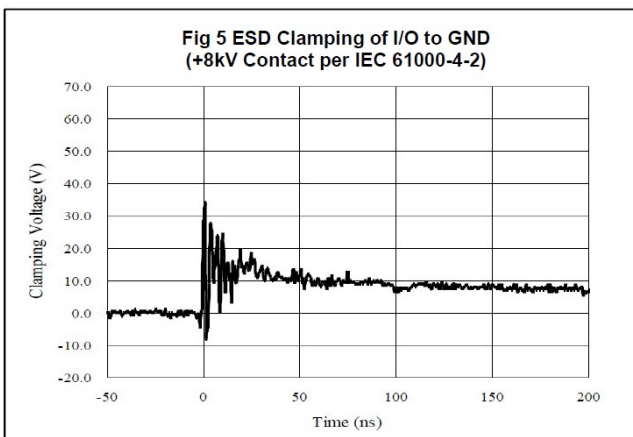
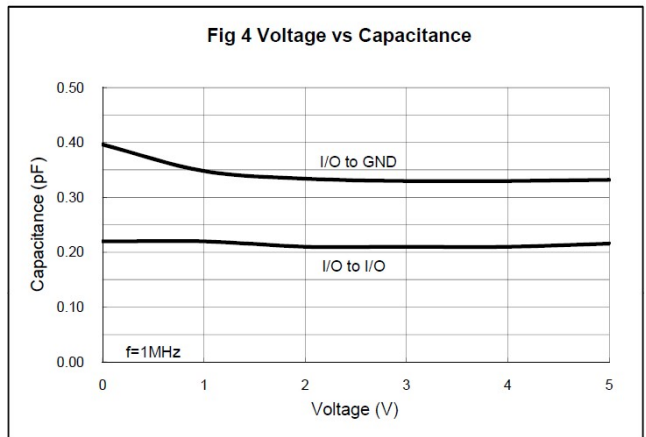
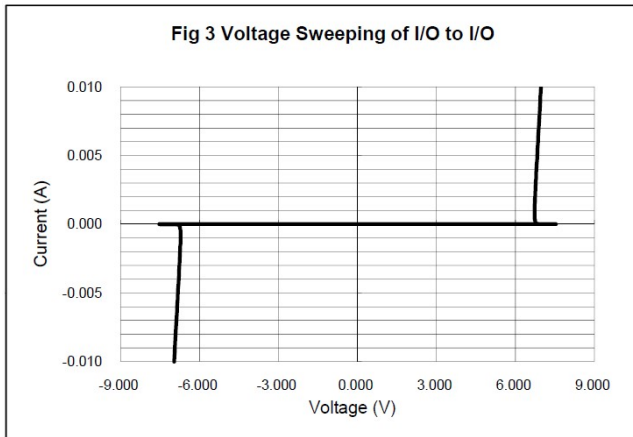
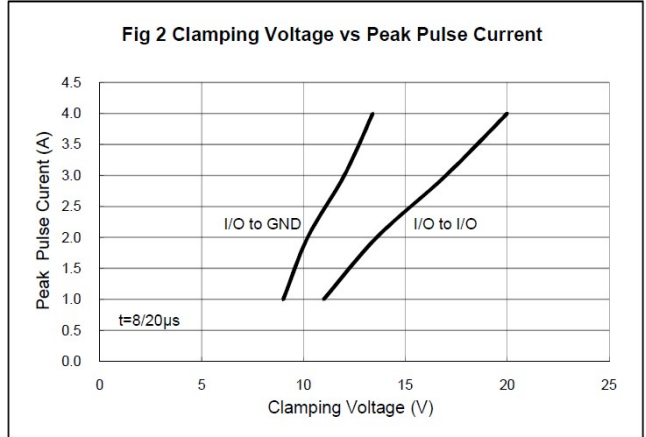
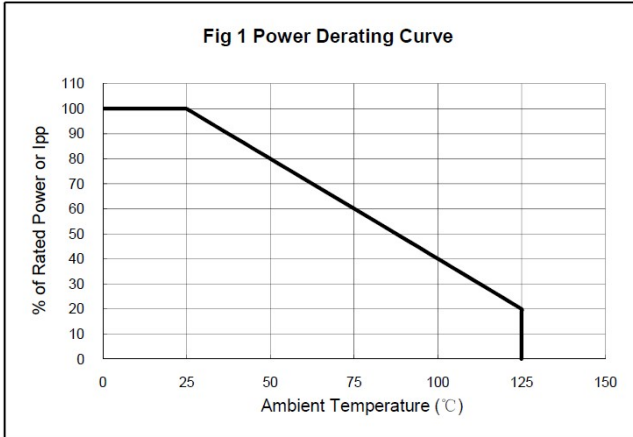
| Symbol           | Parameter  | Value      | Units |
|------------------|--|------------|-------|
| P <sub>PP</sub>  | Peak Pulse Power (8/20μs)                                      | 60         | W     |
| V <sub>ESD</sub> | ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | ±25<br>±20 | kV    |
| T <sub>OPT</sub> | Operating Temperature  | -55/+125   | °C    |
| T <sub>STG</sub> | Storage Temperature  | -55/+150   | °C    |

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25 C)

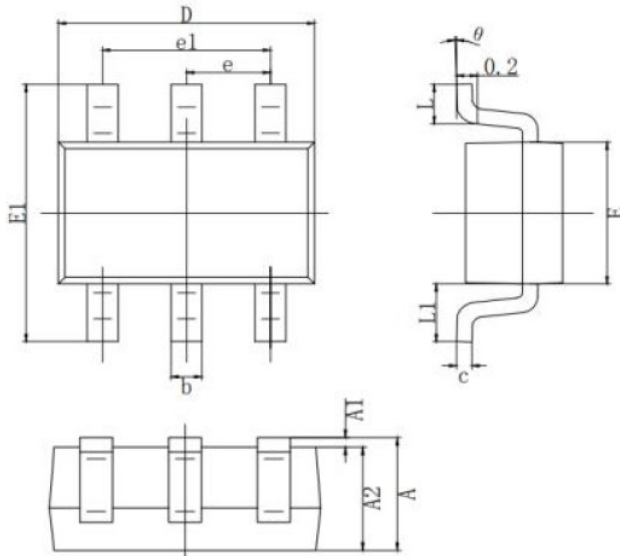
| Symbol           | Parameter                 | Test Condition  | Min | Typ  | Max  | Units |
|------------------|---------------------------|---|-----|------|------|-------|
| V <sub>RWM</sub> | Reverse Working Voltage   | Any I/O pin to GND  |     |      | 5.0  | V     |
| V <sub>BR</sub>  | Reverse Breakdown Voltage | I <sub>T</sub> = 1mA<br>Any I/O pin to GND                                  | 6.0 |      | 9.0  | V     |
| I <sub>R</sub>   | Reverse Leakage Current   | V <sub>RWM</sub> = 5V<br>Any I/O pin to GND                                 |     |      | 1.0  | μA    |
| V <sub>C</sub>   | Clamping Voltage          | I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs<br>Any I/O pin to GND         |     |      | 10   | V     |
|                  |                           | I <sub>PP</sub> = 4A, t <sub>p</sub> = 8/20μs<br>Any I/O pin to GND         |     |      | 15   | V     |
|                  |                           | I <sub>PP</sub> = 8A, t <sub>p</sub> = 8/20μs<br>V <sub>CC</sub> pin to GND |     |      | 15   | V     |
| C <sub>ESD</sub> | Parasitic Capacitance     | V <sub>R</sub> = 0V, f = 1MHz<br>Between I/O and I/O                        |     | 0.20 | 0.30 | pF    |
|                  |                           | V <sub>R</sub> = 0V, f = 1MHz<br>Between I/O and GND                        |     | 0.45 | 0.50 | pF    |
|                  |                           | V <sub>R</sub> = 0V, f = 1MHz<br>Between V <sub>CC</sub> and GND            |     | 0.80 |      | pF    |

Note: I/O Pins are pin 1,3,4,6. Pin 5 is V<sub>CC</sub>. Pin 2 is GND.

**ELECTRICAL CHARACTERISTICS CURVE**

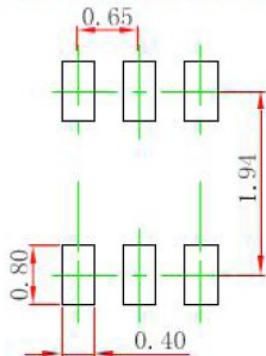


## SOT-363 PACKAGE OUTLINE DIMENSIONS



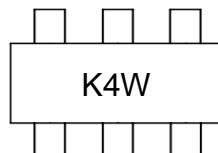
| SYMBOL | MILLIMETER |       |
|--------|------------|-------|
|        | MIN        | MAX   |
| A      | 0.900      | 1.100 |
| A1     | 0.000      | 0.100 |
| A2     | 0.900      | 1.000 |
| b      | 0.150      | 0.350 |
| c      | 0.080      | 0.150 |
| D      | 2.000      | 2.200 |
| E      | 1.150      | 1.350 |
| E1     | 2.150      | 2.450 |
| e      | 0.650 TYP. |       |
| e1     | 1.200      | 1.400 |
| L      | 0.525 REF. |       |
| L1     | 0.260      | 0.460 |
| theta  | 0°         | 8°    |

Recommended land dimensions for SOT-363. Electrode patterns for PCBs



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

## Marking



## Ordering information

| Order code      | Package | Base qty | Delivery mode |
|-----------------|---------|----------|---------------|
| UMW PESD5V0L5UY | SOT-363 | 3000     | Tape and reel |