

# TEPA Series

## POLYMER ESD SUPPRESSORS



### Features

- Ideal ESD protection for high frequency,highspeed applications.
- Ultra-low capacitance ( 0.25pF typical ).
- Fast response time.
- Very low leakage current, reduces power consumption.
- Bi-directional device for placement flexibility.
- 4 lines protected design for board space savings.
- RoHS compliant

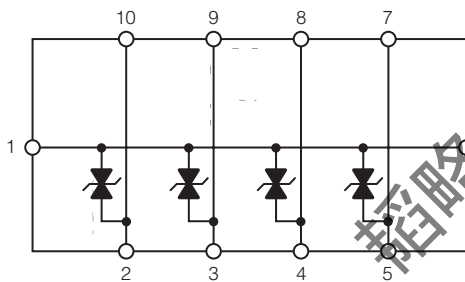


### Application

TT-TECH Polymer ESD Suppressors (PulseClamp™) help protect sensitive electronic equipment against electrostatic discharge (ESD). These devices are best suited for high-speed, high-frequency applications where low capacitance is important. The suppressors use polymer composite materials to suppress fast-rising ESD transients (as specified in IEC 61000-4-2 and MIL-STD-883C), Assist equipment to pass these standards, while adding virtually no capacitance to the circuit. Typical application including:

- High Speed Data Ports, HDMI, DiiVA and Display Port, IEEE1394 interface.
- HDTV Equipment, Set Top Boxes, DVD Players.

### Circuit Diagram



| Pin number | Description |
|------------|-------------|
| 2-5,7-10   | I/O         |
| 1,6        | GND         |

### Electrical Parameters(Tamb=25°C)

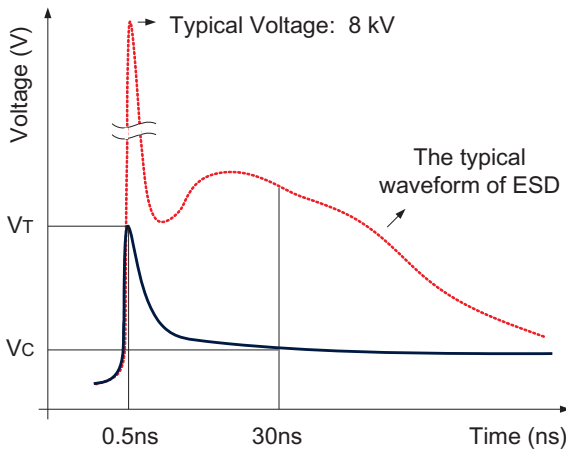
| Part Number    | Rated Voltage | Trigger Voltage | Clamping Voltage | Leakage Current | Capacitance (Line to Gnd) | Rated Current |
|----------------|---------------|-----------------|------------------|-----------------|---------------------------|---------------|
|                | $V_R$         | $V_T$           | $V_C$            | $I_L$           | $C_P$                     | $I_R$         |
|                | Max.          | Typ.            | Typ.             | Typ.            | Typ.                      | Max.          |
|                | V             | V               | V                | uA              | pF                        | mA            |
| TEPA0R25V05B4X | 5             | 350             | 80               | 0.1             | 0.25                      | 100           |
| TEPA0R25V09B4X | 9             | 350             | 80               | 0.1             | 0.25                      | 100           |
| TEPA0R25V12B4X | 12            | 350             | 80               | 0.1             | 0.25                      | 100           |

\*Trigger and clamping voltage measured per IEC61000-4-2, level 4, 8kV contact test method.

\*Capacitance measured at 1MHz, 1Vrms.

## General Characteristics

IEC 61000-4-2 Waveform and ESD clamping voltage

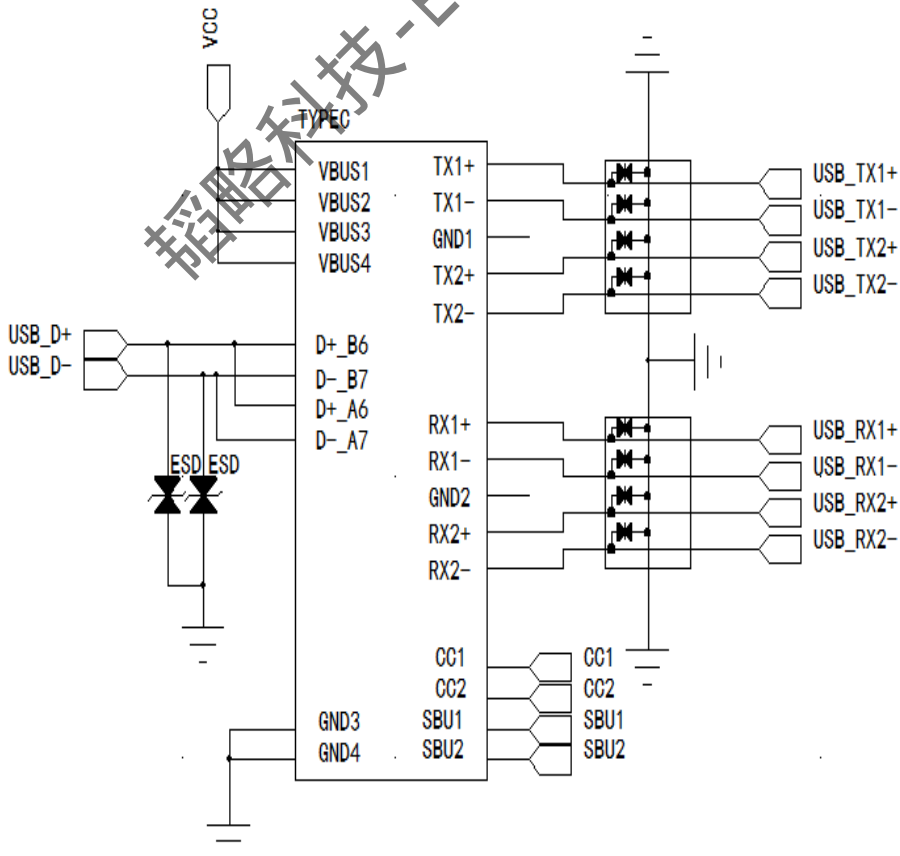


|  |               |
|--|---------------|
| Operating & Storage Temperature Range: | -55°C to +125 |
| ESD Capability:                        | 8kV typical   |
| IEC61000-4-2 Contact Discharge         | 15kV typical  |
| IEC61000-4-2 Air Discharge             | >2000 typical |
| ESD Pulse Withstand*                   |               |

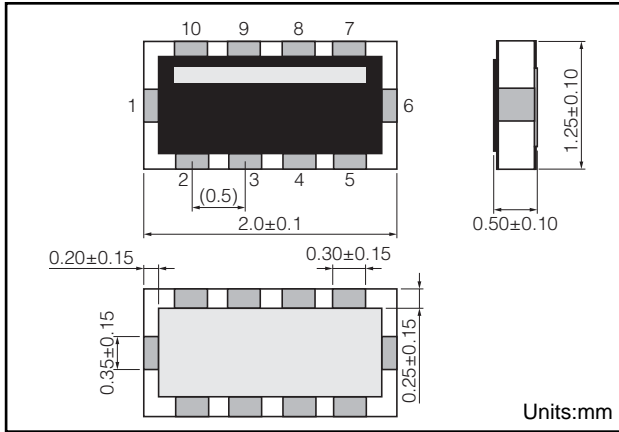
\* Pulse Withstand- some shifting in characteristics may occur when tested over multiple pulses at a very rapid rate.

## Typical Circuits Protection

- TYPE-C circuit

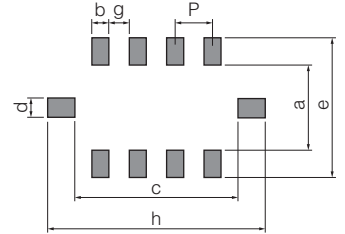


## Product Dimensions

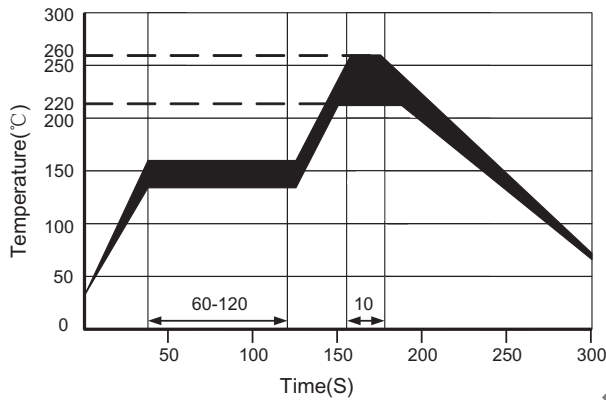


## Recommended Land Pattern

| Ref. (mm) | Typ. |
|-----------|------|
| a         | 0.75 |
| b         | 0.25 |
| c         | 1.70 |
| d         | 0.35 |
| e         | 1.85 |
| h         | 2.60 |
| g         | 0.25 |
| p         | 0.50 |



## Solder Reflow Recommendations



- Recommended reflow methods: IR, vapor phase oven, hot air oven.
- The device can be exposed to a maximum temperature of 260°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.

**Notes:** If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements

## Part Numbering System

T E P A 0R25 V05 B 4X  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- (1) Company Name: TOP-EMC
- (2) Product Function: ESD
- (3) Material Type: POLYMER
- (4) Chip Size(EIA): A (L\*W=2.0\*1.2mm)
- (5) Capacitance: 0R25=0.25pf
- (6) Working Voltage: V05=5V
- (7) Direction Type: Bidirectional
- (8) Lines Protected: 4X=4 lines

## Contact Information

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