

TEPC0R2V05B1X

POLYMER ESD SUPPRESSORS

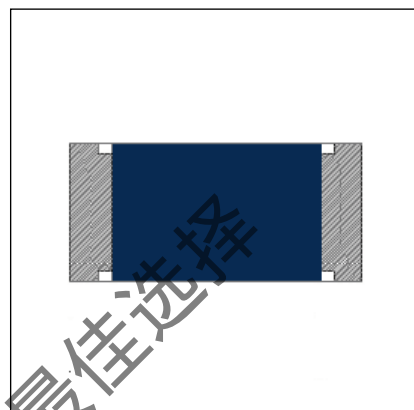


Generals

- This device is an ultra low capacitance PESP Product designed to protect very high speed data interfaces TEPC0R2V05B1X has a typical capacitance of only 0.2pf(I/O to GND), and it can be used to meet the ESD immunity requirements of IEC61000-4-2(15KV air,8KV contact discharge)

Feature

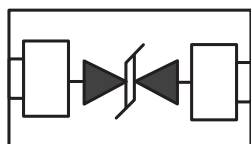
- ESD protection for high speed data lines to IEC61000-4-2
- ESD contact discharge typical 8KV, max 15KV
- ESD air discharge typical 15KV, max 25KV
- Multilayer structure
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency, low voltage applications



Application

- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface (DP)
- Unified Display Interface (UDI)
- Mobile Display Digital Interface (MDDI)
- Gigabit Ethernet
- USB2.0 and USB3.0
- IEEE1394 interface

Circuit Diagram



Bidirectional

Absolute Maximum Ratings

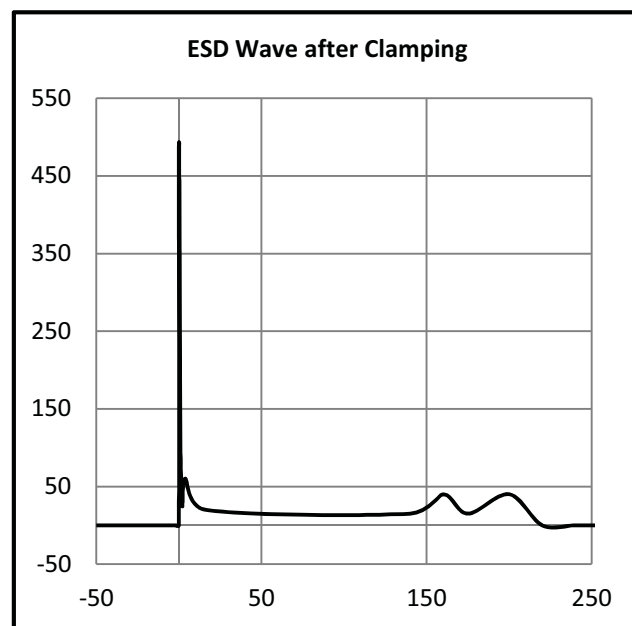
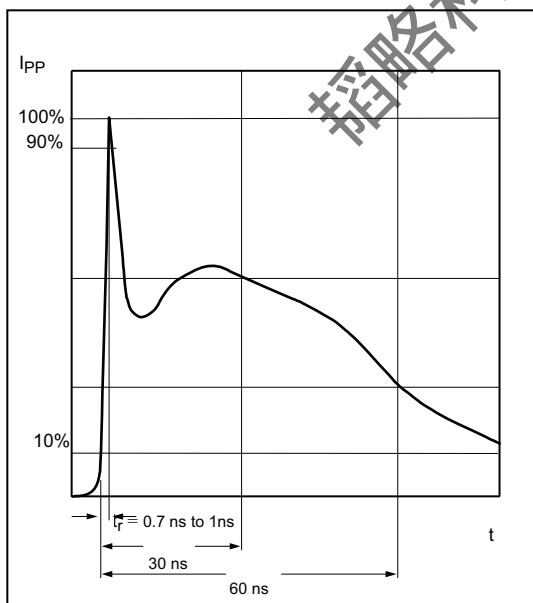
| Parameter | Symbol | Value | Unit |
|--|-------------------|-------------|------|
| Maximum Contact discharge voltage Per IEC61000-4-2 | --- | 15KV | V |
| Maximum Air discharge voltage Per IEC61000-4-2 | --- | 25KV | V |
| Maximum Operating temperature | T _{OPER} | -40 to +90 | °C |
| Maximum Storage temperature | T _{STG} | -55 to +125 | °C |
| Maximum lead temperature for soldering during 10s | T _L | 260 | °C |

Electrical Characteristics(T_A=25°C °C)

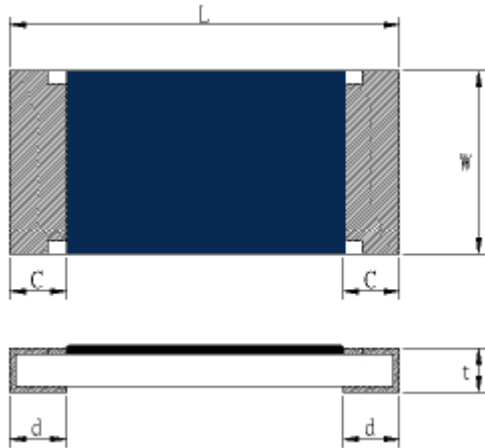
| Parameter | Symbol | Typ | Max | Units |
|------------------|----------------|------|------|-------|
| Rated Voltage | V _R | --- | 5 | V |
| Trigger voltage | V _T | 250 | --- | V |
| Clamping voltage | V _C | 25 | --- | V |
| Leakage current | I _L | 0.1 | | uA |
| Capacitance | C _P | 0.20 | 0.25 | pF |

- Note:**
1. Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.
 2. After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

ESD Clamping Test Waveforms

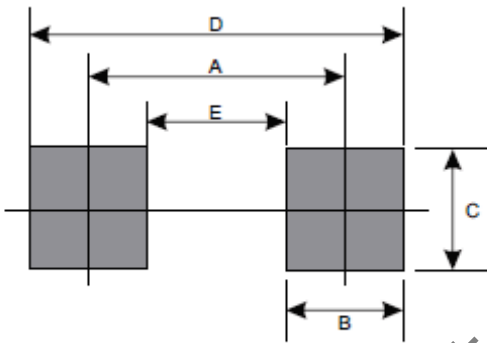


Product Dimension



| Type | Dimensions(mm) | | | | |
|------|----------------|-----------|---------|----------|-----------|
| | L | W | C | d | t |
| 0402 | 1.0±0.1 | 0.52±0.05 | 0.2±0.1 | 0.25±0.1 | 0.36±0.05 |
| 0603 | 1.6±0.1 | 0.8±0.1 | 0.3±0.2 | 0.35±0.2 | 0.45±0.1 |

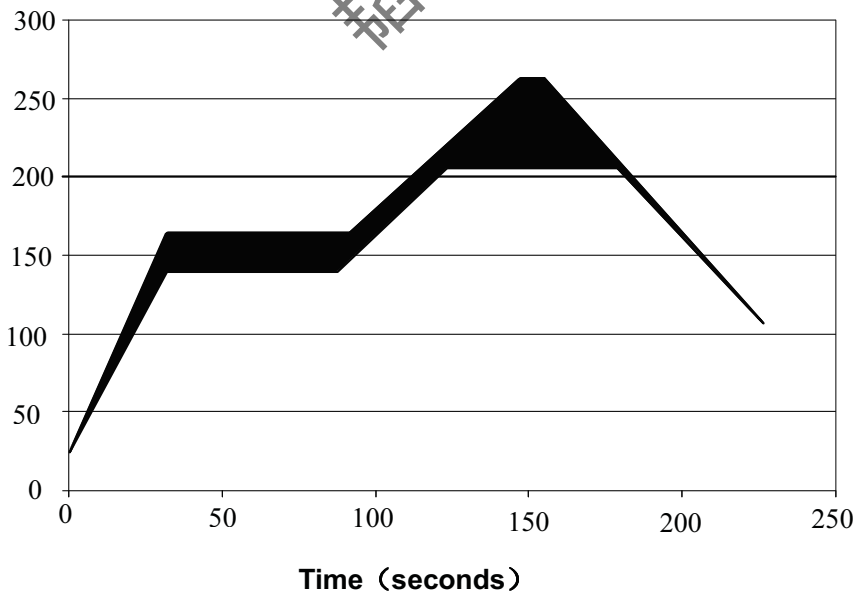
PAD Dimension



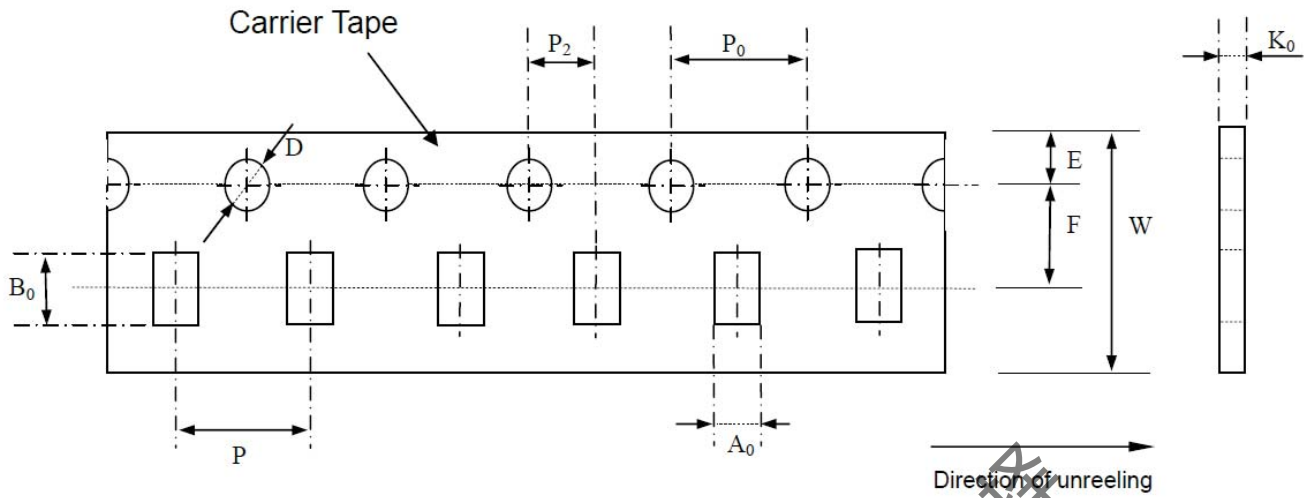
| Size | 0603 (mm) |
|------|--------------|
| A | 1.5 |
| B | 0.6 |
| C | 0.9 |
| D | 2.1 |
| E | 0.8 |

Solder Reflow Recommendations

Temperatures (°C)

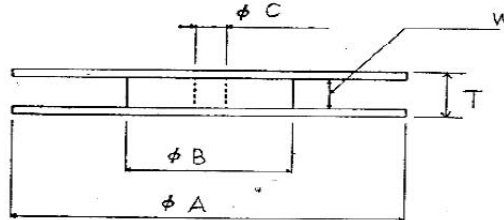
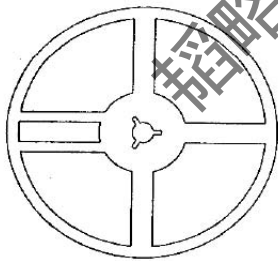


Package Information



| Symbol | A_0 ± 0.05 | B_0 ± 0.05 | K_0 ± 0.05 | D $+0.10$ -0.05 | P ± 0.10 | P_2 ± 0.10 | P_0 ± 0.10 | W ± 0.10 | E ± 0.10 | F ± 0.05 |
|--------|---------------------|---------------------|---------------------|---------------------------|-------------------|---------------------|---------------------|-------------------|-------------------|-------------------|
| 0402 | 0.62 | 1.12 | 0.60 | 1.55 | 2.00 | 2.00 | 4.00 | 8.00 | 1.75 | 3.50 |
| 0603 | 1.10 | 1.90 | 0.95 | 1.56 | 4.00 | 2.00 | 4.00 | 8.00 | 1.75 | 3.50 |

- Carrier tape and transparent cover tape should be heat sealed to carry the products, and the reel should be used to reel the carrier tape.
- The adhesion of the heat-sealed cover tape shall be 40 ± 30 grams.
- Both the head and the end portion of the taping shall be empty for reel package and SMT auto-pickup machine. And a normal paper tape shall be connected in the head of taping for the operator to handle.



| Series | ϕA | ϕB | ϕC | W | T |
|--------|------------|----------|----------------|---------------|----------------|
| 0402 | 180^{+0} | 60 min | 13.0 ± 1.0 | 9.0 ± 1.0 | 11.4 ± 2.0 |
| 0603 | -3 | | | | |

Order Information

| Device | Package | Quantity | HSF Status |
|---------------|---------|---------------|----------------|
| TEPC0R2V05B1X | 0603 | 5,000pcs/reel | RoHS compliant |

Part Number System

T E P C 0R2 V05 B 1X
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): B(0402),C(0603)
- ⑤ Capacitance: 0R2=0.2PF,1R0=1.0PF,5R0=5.0PF
- ⑥ Working Voltage: V05=5V,V09=9V,V24=24V
- ⑦ Direction Type: Bidirectional
- ⑧ Lines Protected: 1X=1 line

韬略科技-EMC方案的最佳选择

Contact Information

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