# Surface Mount Polymeric ESD Suppressor

## Features

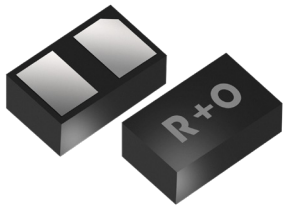
- Low leakage current
- Fast response time
- 0402 surface mount package
- IEC 61000-4-2 (ESD Air): ±15kV
- IEC 61000-4-2 (ESD Contact): ±8kV

**Reverse Working Voltage**
30V Max.
**Ultra Low capacitance**
0.05pF(Typ)

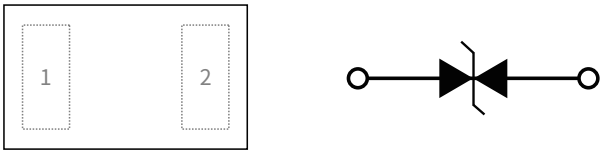
## Applications

- USB 3.0/3.1
- HDMI 1.3/1.4/2.0
- RF Antenna
- SATA and eSATA interface
- Smart Phone/Mobile Internet

**0402 Series**




## Function Diagram




## Part Number Code

PESD □□□□ - □□

- Working Voltage $V_{DC}$
- Package
- Polymeric ESD

## Maximum Ratings (Ta=25°C Unless otherwise specified)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{ESD}$ | Electrostatic Discharge Voltage | ESD per IEC 61000-4-2( Air ) | ±15 | KV |
| | | ESD per IEC 61000-4-2( Contact) | ±8 | KV |
| $T_J$ | Operating JunctionTemperature Range | — | -55 to +125 | °C |
| $T_{STG}$ | Storage Temperature Range | — | -55 to +125 | °C |

## Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | CONDITION | Min | Typ | Max | UNIT |
|---|---|---|---|---|---|---|
| Continuous Operating Voltage | $V_{DC}$ | $T_a$=25°C | — | — | 30.0 | V |
| Trigger Voltage | $V_T$ | IEC61000-4-2 8kV contact discharge | — | 450 | — | V |
| Reverse Leakage Current | $I_R$ | DC 5V shall be applied on component | — | — | 10 | nA |
| Clamping Voltage | $V_C$ | IEC61000-4-2 8kV contact discharge | — | 40 | — | V |
| Capacitance | $C_J$ | Measured at 10MHz | — | 0.05 | — | pF |

## Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

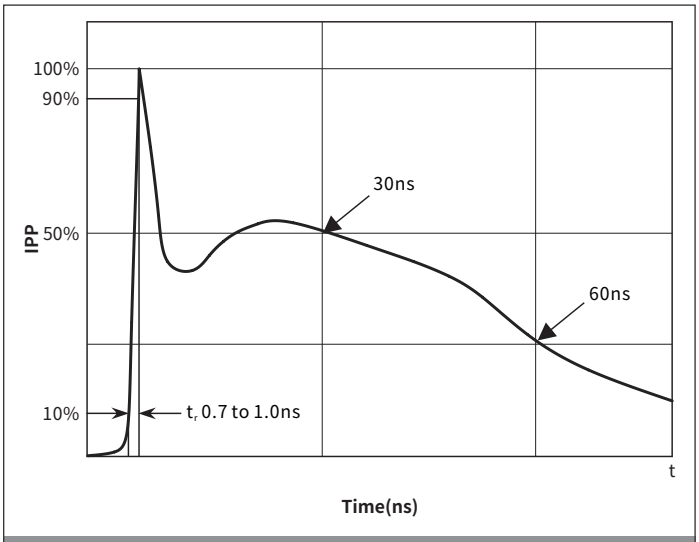



Fig.1 ESD Clamping Test Waveform

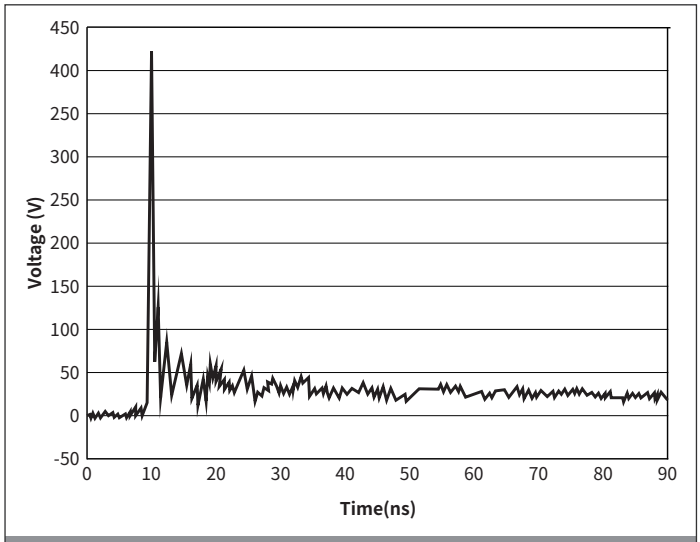



Fig.2 ESD Waveform after Clamping

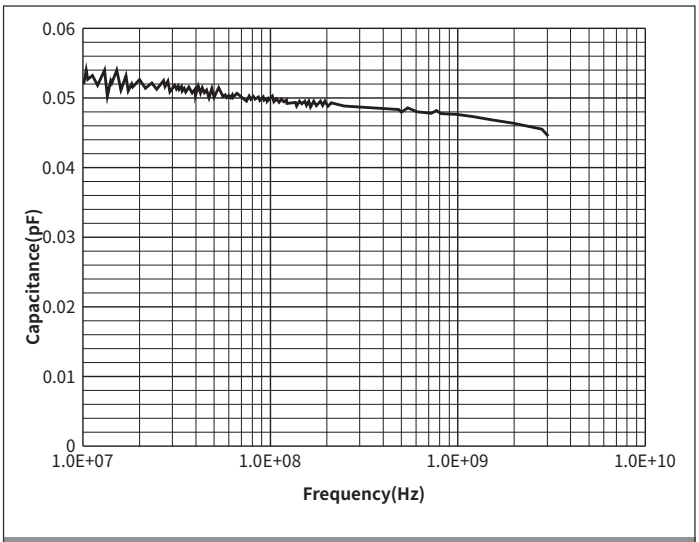
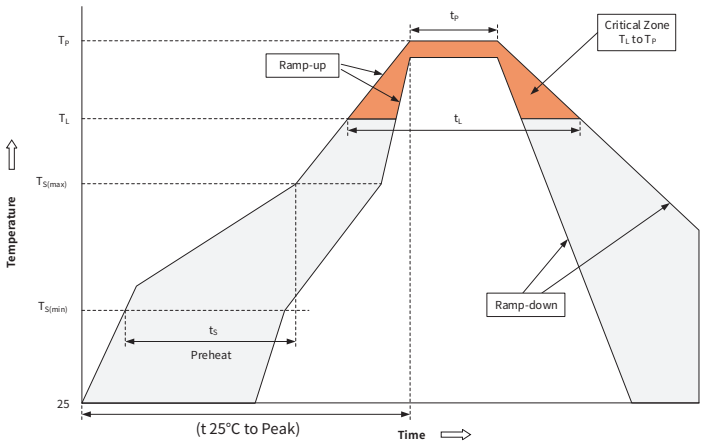



Fig.3 Capacitance VS Frequency

## Ordering Information

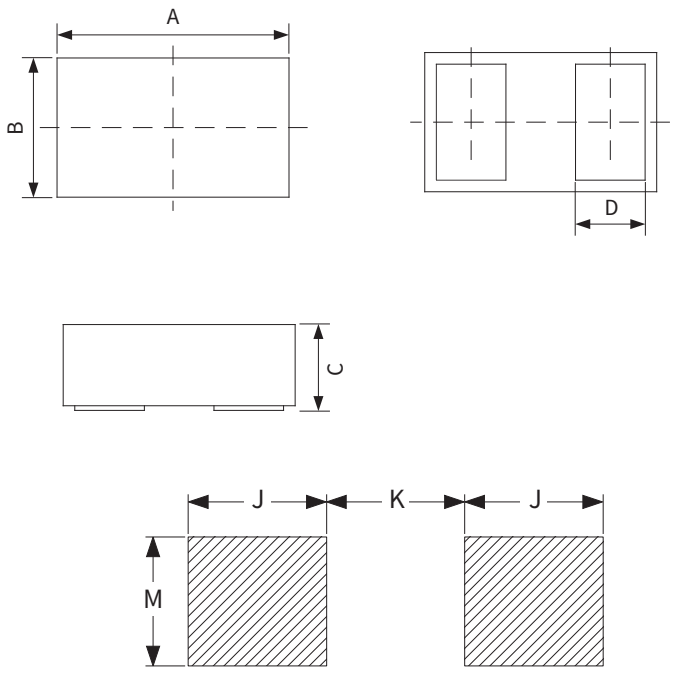
| PREFERED P/N | PACKAGE | SIZE(mm) | DELIVERY MODE | MPQ(PCS) |
|---|---|---|---|---|
| PESD0402-30 | 0402 | 1.00×0.52×0.38 | 7'' REEL | 10,000 |

## Recommended Soldering Conditions




| Profile Feature | | Pb-Free Assembly |
|---|---|---|
| Pre-heat | Temperature Min ($T_{S(min)}$) | +150°C |
| | Temperature Max($T_{S(max)}$) | +200°C |
| | Time (Min to Max) ($t_S$) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3°C /sec. Max |
| $T_{S(max)}$ to $T_L$ - Ramp-up Rate | | 3°C /sec. Max |
| Reflow | Temperature($T_L$)(Liquid us) | +217°C |
| | Temperature($t_L$) | 60-150 secs. |
| Peak Temp ($T_P$) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp ($t_P$) | | 20-40secs |
| Ramp-down Rate | | 6°C /sec. Max |
| Time 25°C to Peak Temp ($T_P$) | | 8 min. Max |
| Do not exceed | | +260°C |

## Package Outline Dimensions (0402 package)




Notes:
This solder pad layout is for reference purposes only.

| Symbol | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min | Max | Min | Max |
| A | 0.90 | 1.10 | 0.035 | 0.043 |
| B | 0.42 | 0.62 | 0.016 | 0.024 |
| C | 0.25 | 0.45 | 0.010 | 0.018 |
| D | 0.15 | 0.35 | 0.006 | 0.014 |
| J | 0.50 | | 0.020 | |
| K | 0.40 | | 0.016 | |
| M | 0.65 | | 0.026 | |