

Surface Mount Polymeric ESD Suppressor

PE0402N05G01B

Description

PE0402N05G01B polymeric ESD suppressor help protect sensitive electronic equipment against electrostatic discharge (ESD) without distorting data signals. This protection is a result of its ultra-low capacitance of only 0.05 pF (I/O to GND), and it can be used to help equipment to pass IEC61000-4-2 level 4 test (15KV air, 8KV contact discharge).

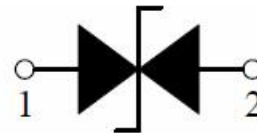
(EIA Size) 0402



Features

- ◆ Ultra low capacitance,0.05pF(typ.).
- ◆ Fast response time(<1ns).
- ◆ Low leakage current(<10nA).
- ◆ Bi-directional, single line protection.
- ◆ IEC61000-4-2(Contact): 8KV, IEC61000-4-2(Air) :15KV.

Equivalent Circuit



Applications

- ◆ Smart Phone/Mobile Internet Device.
- ◆ Laptop/Desktop Computer.
- ◆ Antennas (Cell Phones, GPS...).
- ◆ USB 3.0,USB 3.1 and high speed interface.

General Characteristics

| Parameter | Max | Unit |
|--|-------------|------|
| Contact Discharge Voltage Per IEC61000-4-2 | 8 | KV |
| Air Discharge Voltage Per IEC61000-4-2 | 15 | KV |
| Operating Temperature | -40 to +85 | °C |
| Storage Temperature | -55 to +125 | °C |

Surface Mount Polymeric ESD Suppressor

PE0402N05G01B

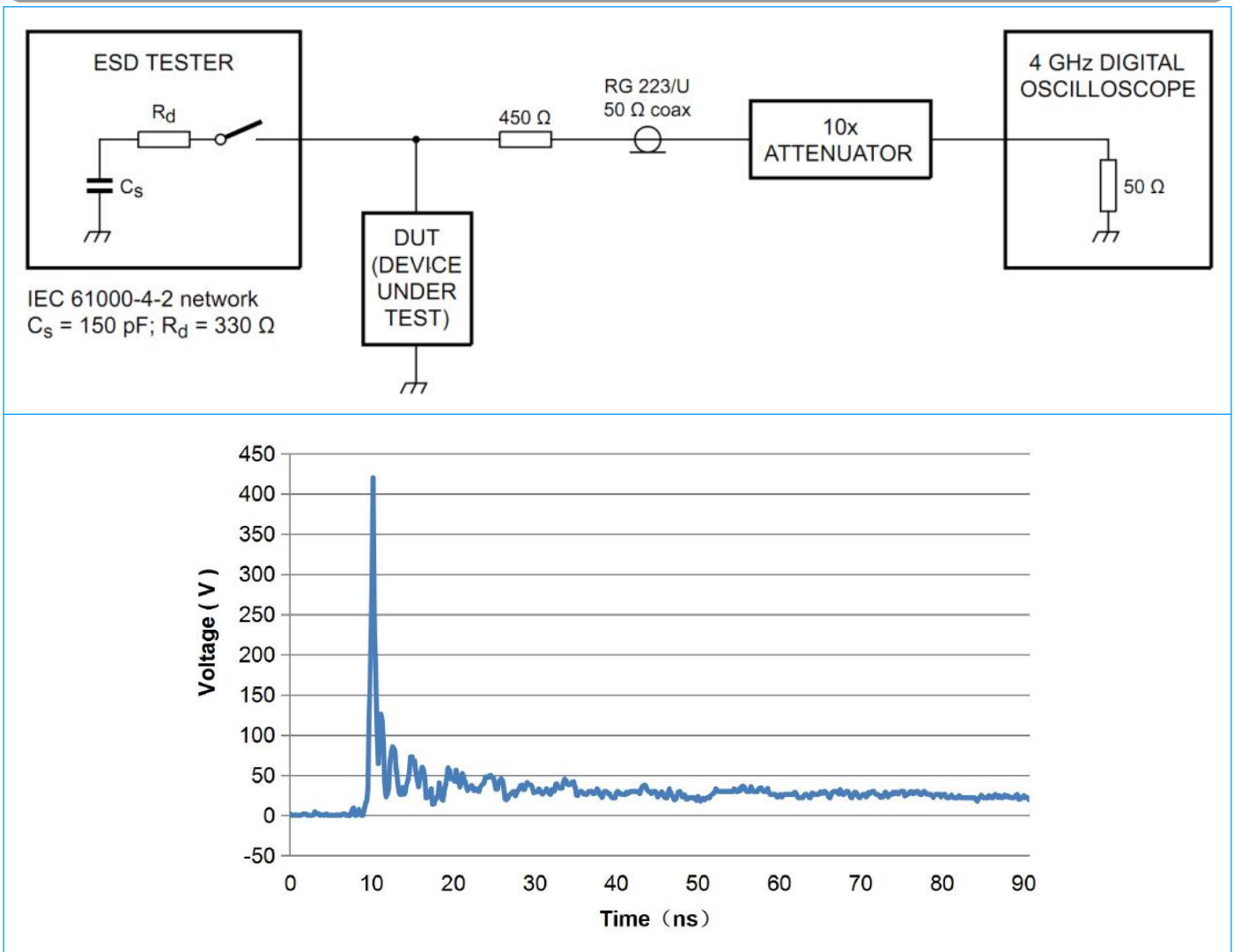
Electrical Characteristics ($T_A = 25^\circ\text{C}$)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|------------------------------|----------|-------------------------------------|------|------|------|-------|
| Continuous Operating Voltage | V_{DC} | -- | -- | -- | 5 | V |
| Trigger Voltage | V_T | IEC61000-4-2 8KV contact discharge | -- | 450 | -- | V |
| Clamping Voltage | V_C | IEC61000-4-2 8KV contact discharge | -- | 40 | -- | V |
| Leakage Current | I_L | DC 5V shall be applied on component | -- | -- | 10 | nA |
| Capacitance | C_P | Measured at 10MHz | -- | 0.05 | -- | pF |
| ESD Pulse Withstand | Pulses | IEC61000-4-2 8KV contact discharge | 1000 | -- | -- | -- |

Note:

Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.

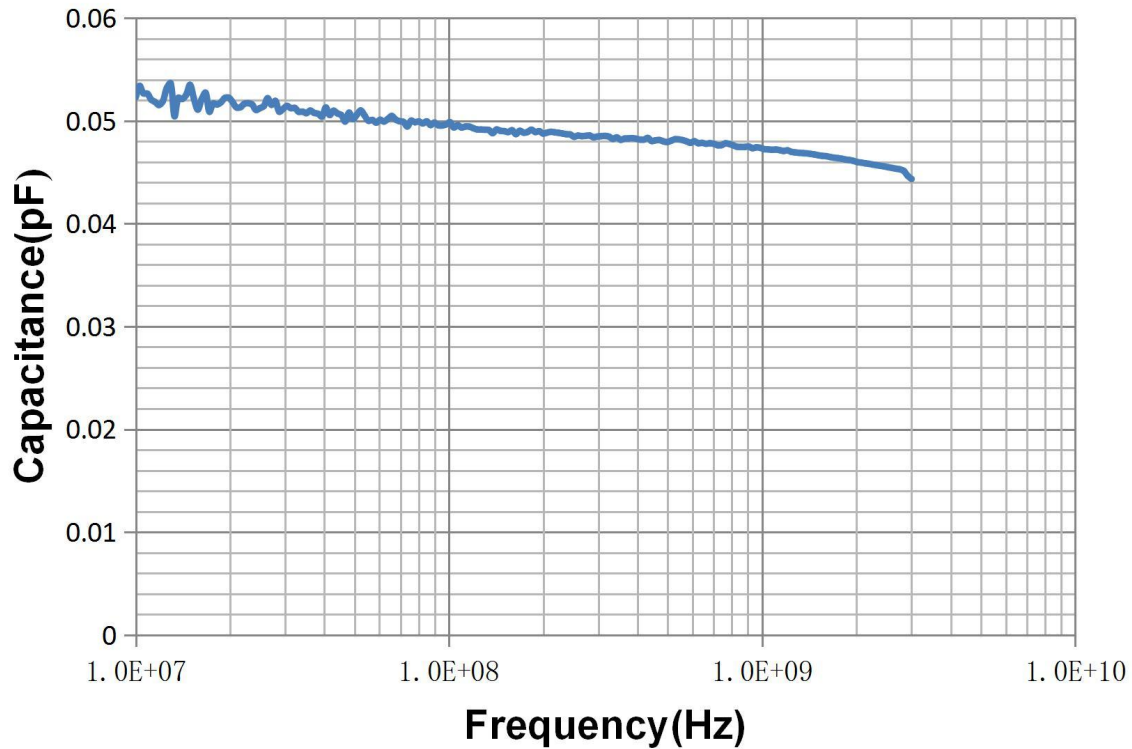
Typical ESD Response (IEC 61000-4-2, 8KV contact discharge)



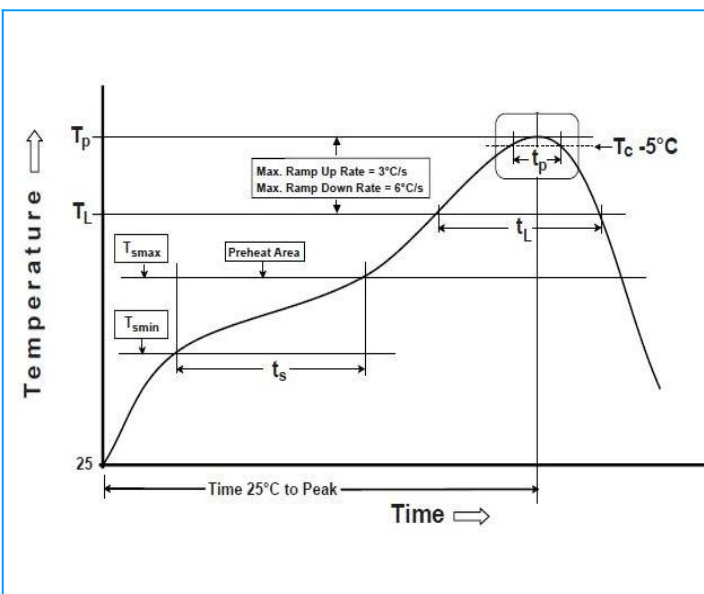
Surface Mount Polymeric ESD Suppressor

PE0402N05G01B

Typical Device Capacitance VS. Frequency



Soldering Parameters

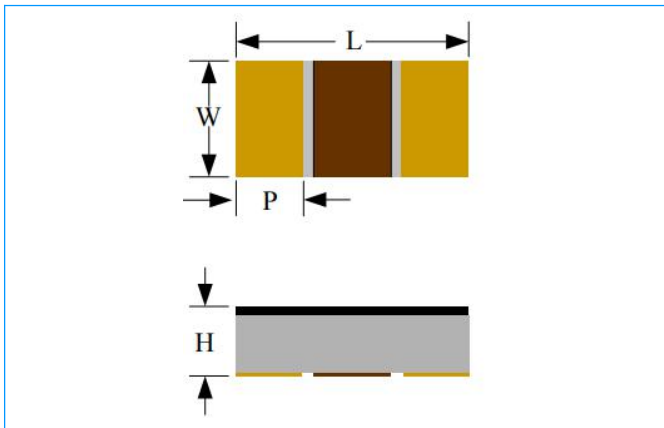


| Profile Feature | | Pb-Free Assembly |
|---|--|-------------------------|
| Pre Heat | Temperature Min (T_{smin}) | 150°C |
| | Temperature Max (T_{smax}) | 200°C |
| | Time (T_s) from (T_{smin} to T_{smax}) | 60-120 seconds |
| Ramp-up Rate (T_L to T_P) | | 3°C/second max. |
| Liquidus Temperature (T_L) | | 217°C |
| Time (t_L) maintained above T_L | | 60-150 seconds |
| Peak Package Body Temperature (T_P) | | 260 ^{+0/-5} °C |
| Time (t_p)* within 5°C of the Specified Classification Temperature (T_c) | | 30* seconds |
| Ramp-down Rate (T_P to T_L) | | 6°C/second max. |
| Time 25°C to peak Temperature | | 8 minutes Max |
| * Tolerance for peak profile temperature (T_P) is defined as a supplier minimum and a user maximum. | | |

Surface Mount Polymeric ESD Suppressor

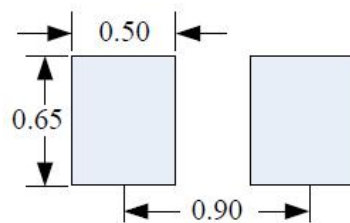
PE0402N05G01B

Package Dimension



| Dimension | Unit: Millimeters | |
|-----------|-------------------|------|
| | Min. | Max. |
| L | 0.90 | 1.10 |
| W | 0.42 | 0.62 |
| P | 0.15 | 0.35 |
| H | 0.25 | 0.45 |

Recommended Solder Pad Footprint



Sizes in mm

Notes:

This solder pad layout is for reference purposes only.

Order Information

| Device | Package | Net Weight | Carrier | Quantity |
|---------------|-----------------|------------|-------------|----------------|
| PE0402N05G01B | (EIA Size) 0402 | 0.12 mg | Tape & Reel | 10,000pcs/reel |