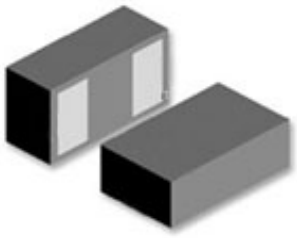
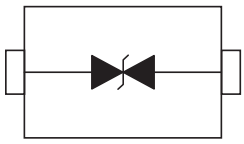
# GSEPA5B0006
# Polymer ESD Suppressor

## Description

This device is an ultra low capacitance ESD product designed to protect high speed data interfaces. GSEPA5B0006 has a typical capacitance of 0.05pf (I/O to GND), and meets the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).



**Package: 0201**



**Schematic Diagram**

## Features

- 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
- Extremely low capacitance
- Low leakage current
- Fast response time
- Ideal for high frequency, low voltage applications

## Applications

- 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

**Caution:**

This component is designed for signal line protection only.Not intended to be used under bias, not for application with a power line.

## 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 | $T_{OPER}$ | -55 To +125 | °C |
| Maximum Storage Temperature | $T_{STG}$ | -55 To +125 | °C |
| Maximum Lead Temperature for Soldering During 10s | $T_L$ | 260 | °C |

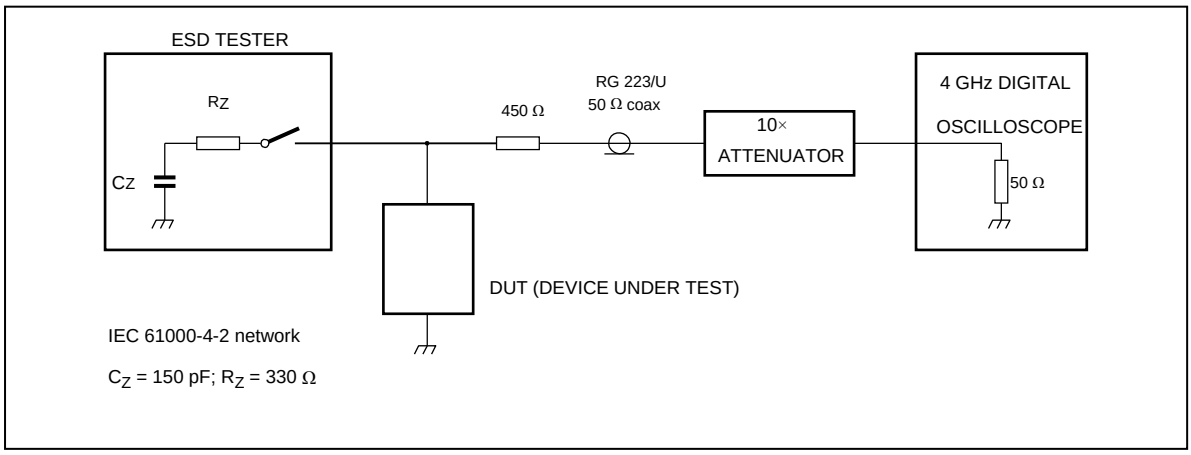
## Electrical Characteristics ($T_A$=25°C)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Rated Voltage | $V_R$ | - | - | - | 6 | V |
| Trigger Voltage | $V_T$ | IEC61000-4-2 8KV contact discharge | - | 300 | - | V |
| Clamping voltage | $V_C$ | IEC61000-4-2 8KV contact discharge | - | 35 | - | V |
| Leakage Current | $I_L$ | DC 6V shall be applied on component | - | 0.01 | 0.1 | μA |
| Capacitance | $C_P$ | $V_R$=0V, f=1MHz | - | 0.05 | - | pF |

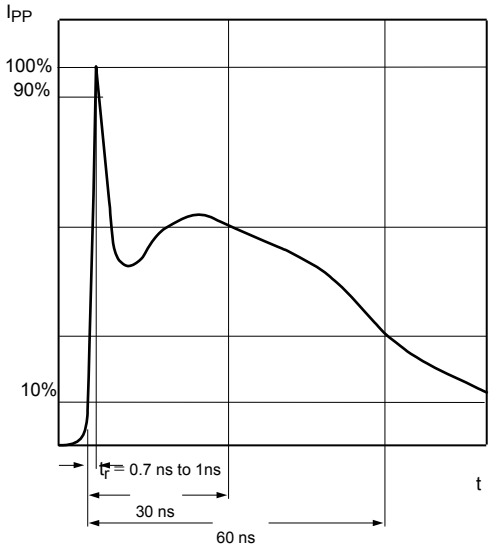
**Note:**

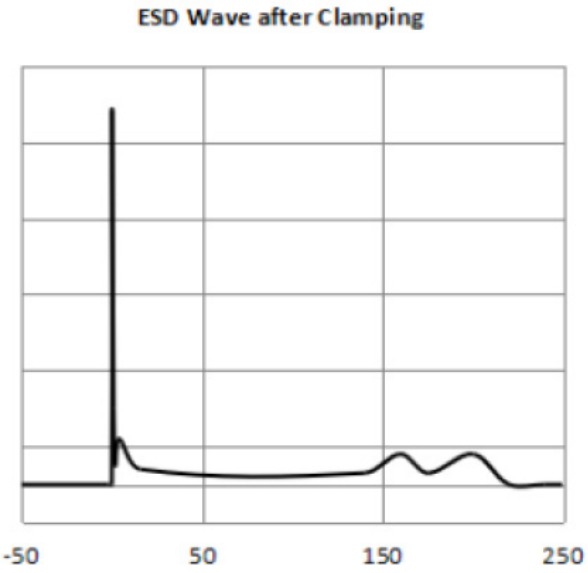
1. Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.
2. After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

## ESD Clamping Test

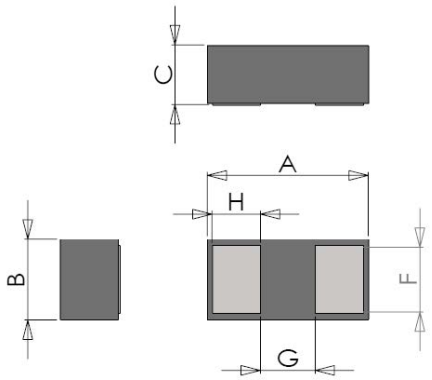


## ESD Clamping Test Waveforms



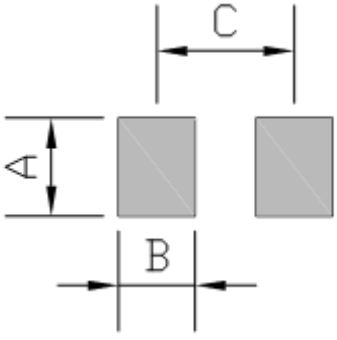




## Product Dimensions




| Symbol | Dimension | | | Unit |
|---|---|---|---|---|
| | Min | Typ | Max | |
| A | 0.55 | 0.60 | 0.65 | mm |
| B | 0.25 | 0.30 | 0.35 | |
| C | 0.25 | 0.30 | 0.35 | |
| H | 0.18 | 0.20 | 0.22 | |
| F | 0.255 | 0.275 | 0.295 | |
| G | 0.16 | 0.18 | 0.20 | |

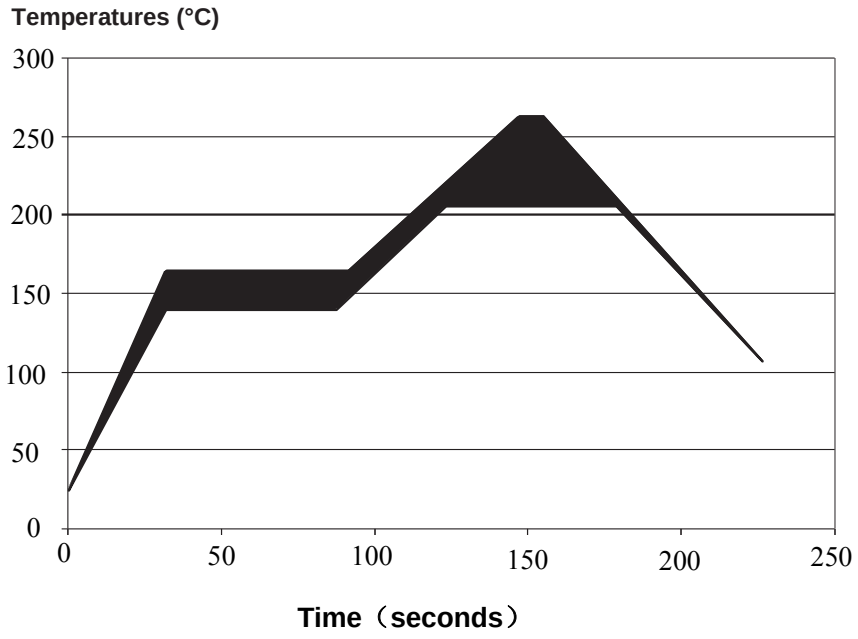
## Pad Dimensions



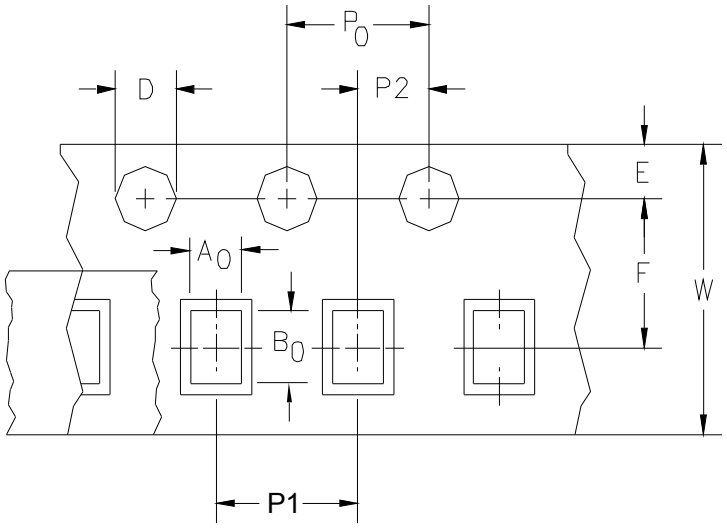

Solder thickness 0.08mm

| Symbol | Dimension | Unit |
|---|---|---|
| A | 0.30 | mm |
| B | 0.25 | |
| C | 0.60 | |

## Solder Reflow Recommendations




## Package Information




| Dimension | Typical | Unit |
|---|---|---|
| A0 | 0.38 | mm |
| B0 | 0.68 | |
| D | 1.55 | |
| P0 | 4.00 | |
| P1 | 2.00 | |
| P2 | 2.00 | |
| E | 1.75 | |
| F | 3.50 | |
| W | 8.00 | |