

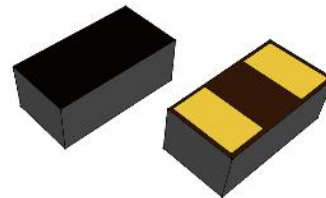
Surface Mount Polymeric ESD Suppressor

PE0201N06G01B

Description

PE0201N06G01B 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).

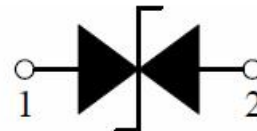
(EIA Size) 0201



Features

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

Schematic Diagram



Applications

- ◆ USB 3.0/3.1
- ◆ HDMI 1.3/1.4/2.0
- ◆ RF Antenna
- ◆ SATA and eSATA Interface

Limiting Values ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{ESD}	Contact Discharge Voltage Per IEC61000-4-2	8	KV
	Air Discharge Voltage Per IEC61000-4-2	15	KV
T_A	Operating Temperature Range	-40 to +85	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Continuous Operating Voltage	V_{DC}	--	--	--	6	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 12V shall be applied on component	--	--	10	nA
Capacitance	C_J	Measured at 10MHz	--	0.05	--	pF

Typical Characteristics

Fig1. Typical ESD Response

IEC 61000-4-2, 8kV contact discharge

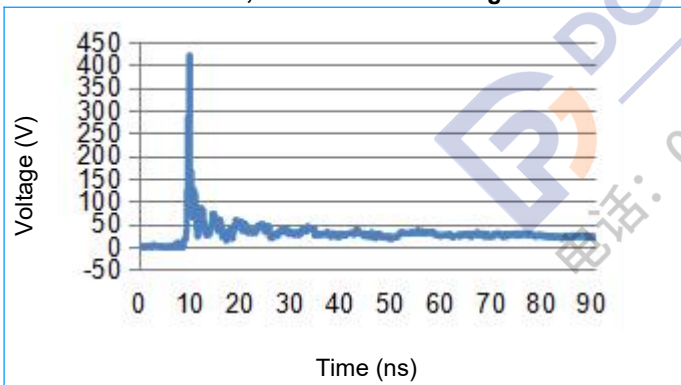
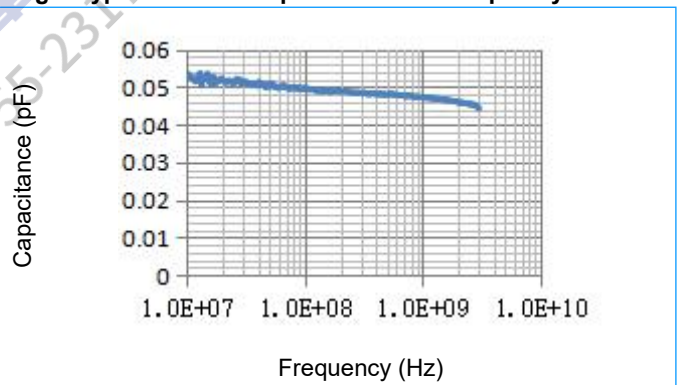
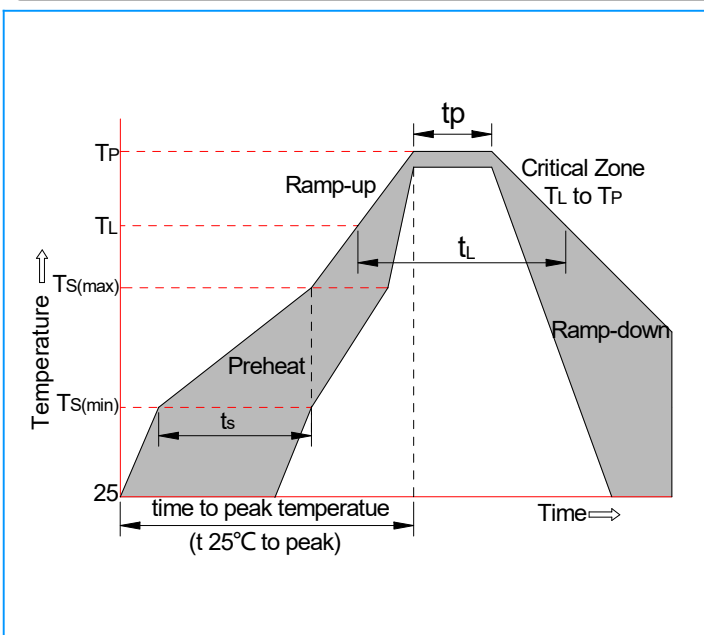


Fig2. Typical Device Capacitance VS. Frequency



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})	60-180 seconds
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/second max.
$T_{s(max)}$ to T_L - Ramp-up Rate		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 max.
Ramp-down Rate (T_P to T_L)		6°C/second max.
Time 25°C to peak Temperature		8 minutes Max
Do not exceed		+260°C

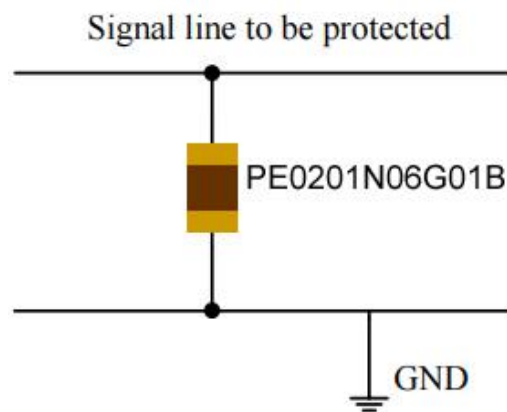
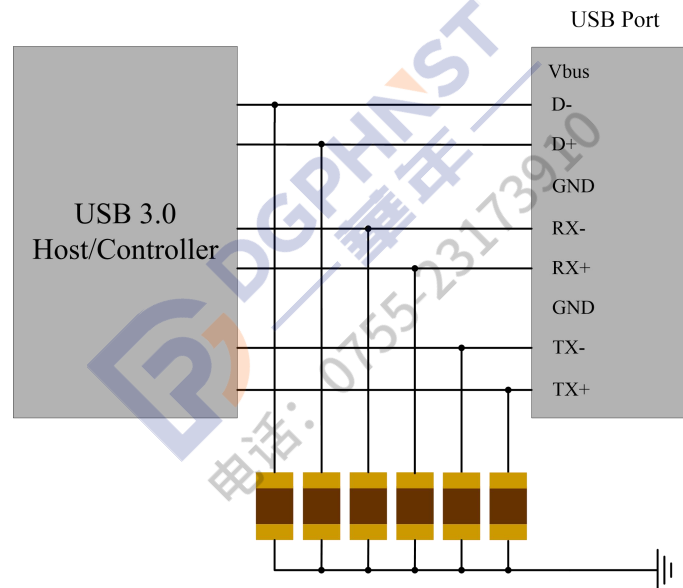
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ESD Protection for Signal Line

The PESD is designed for the protection of one bidirectional data line from ESD damage.

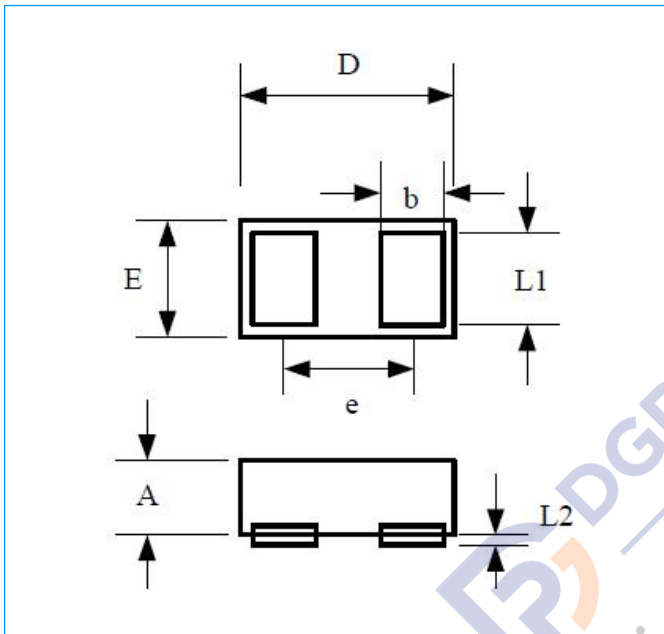
- ◆ Place the PESD as close to the input terminal or connector as possible.
- ◆ Minimize the path length between the PESD and the protected signal line.
- ◆ Use ground planes whenever possible.



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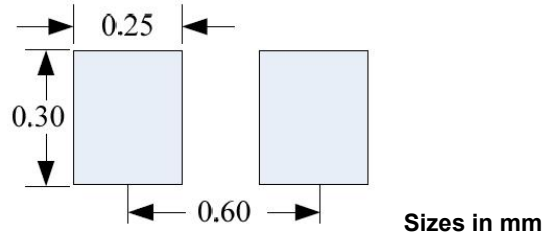
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Package Dimensions



Dimension	Unit: Millimeters	
	Min.	Max.
A	0.25	0.40
b	0.15	0.20
D	0.50	0.70
E	0.25	0.35
e	0.45BSC	
L1	0.20	0.30
L2	0.00	0.05

Recommended Solder Pad Footprint


Notes:

This solder pad layout is for reference purposes only.

Order Information

Device	Package	Size (mm)	Delivery Form	Delivery Quantity
PE0201N06G01B	0201	0.60x0.30x0.32	7" T&R	15,000 PCS