

Surface Mount Polymeric ESD Suppressor

PE0603N05G01B

Description

PE0603N05G01B 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).

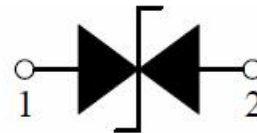
(EIA Size) 0603



Features

- ◆ Ultra-low capacitance:0.05pF(typ.).
- ◆ Low leakage current(<10nA).
- ◆ Fast response time(<1ns).
- ◆ 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	-55 to +125	°C
Storage Temperature	-40 to +85	°C

Surface Mount Polymeric ESD Suppressor

PE0603N05G01B

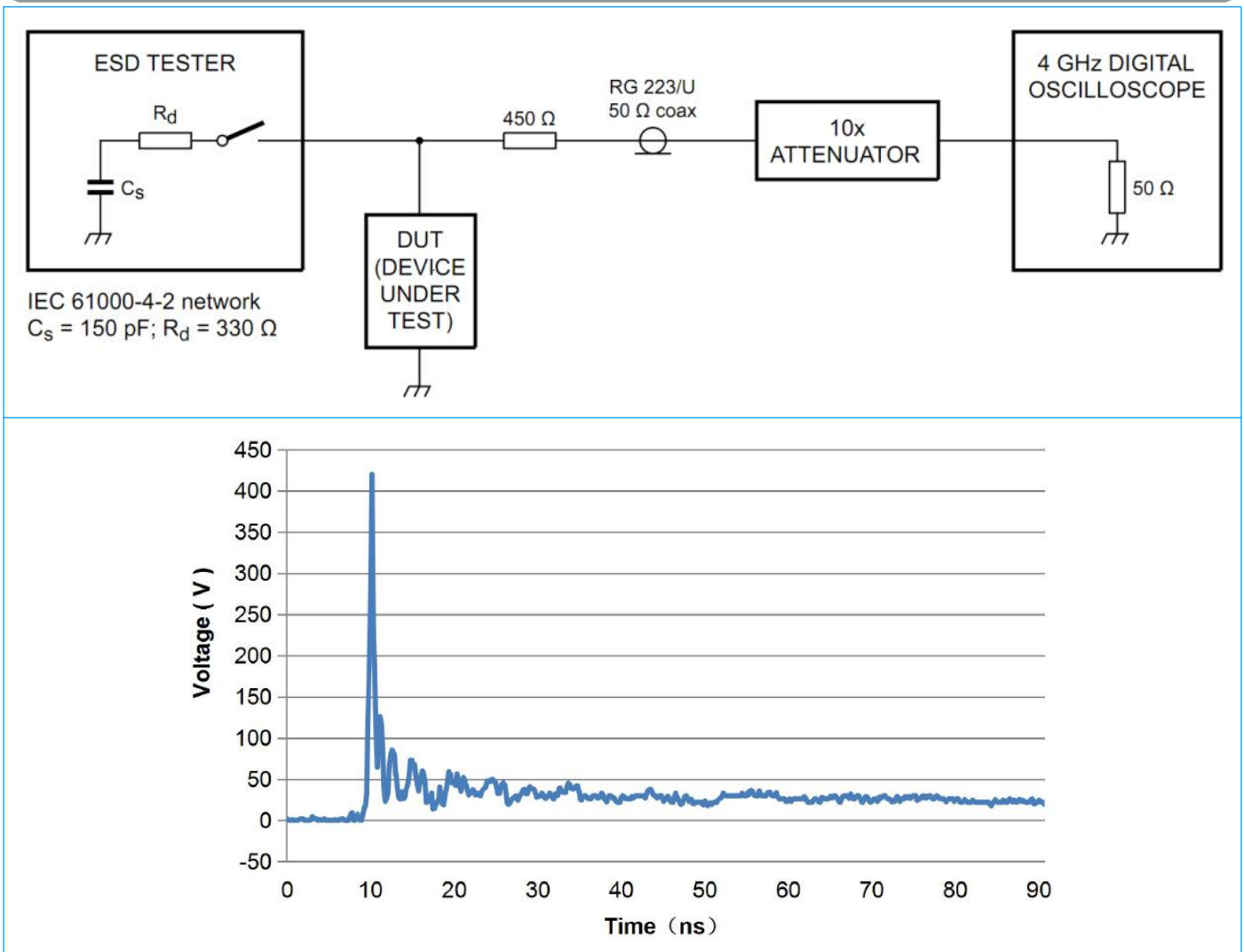
Electrical Characteristics (T_A = 25°C)

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.

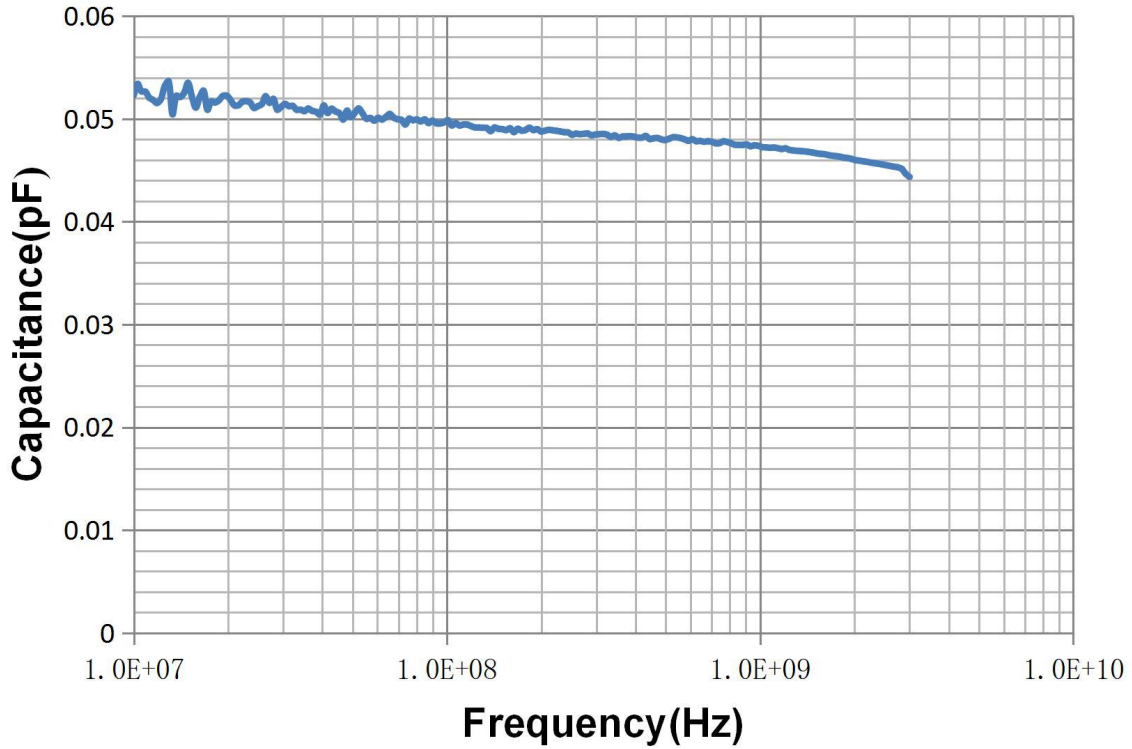
Typical ESD Response (IEC 61000-4-2, 8KV contact discharge)



Surface Mount Polymeric ESD Suppressor

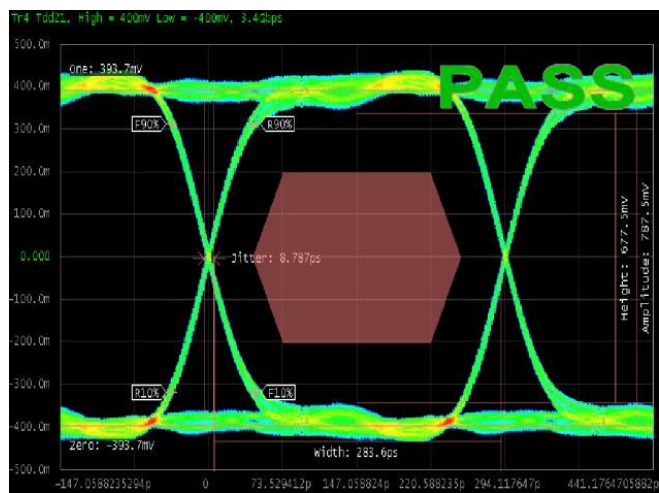
PE0603N05G01B

Typical Device Capacitance VS. Frequency

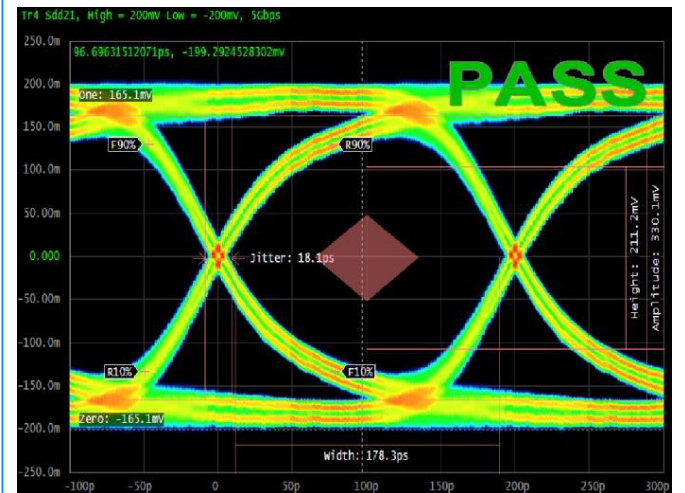


Eye Diagram Measurement

HDMI Mask at 3.4 Gbps



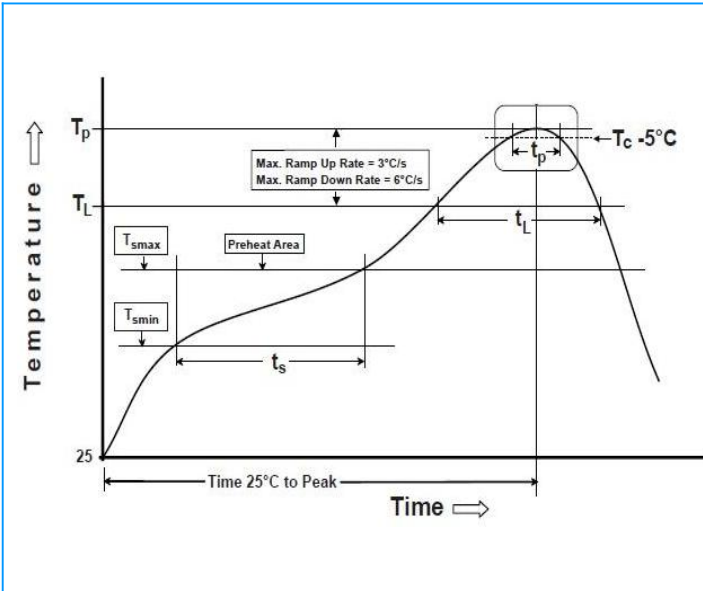
USB3.0 Mask at 5.0 Gbps



Surface Mount Polymeric ESD Suppressor

PE0603N05G01B

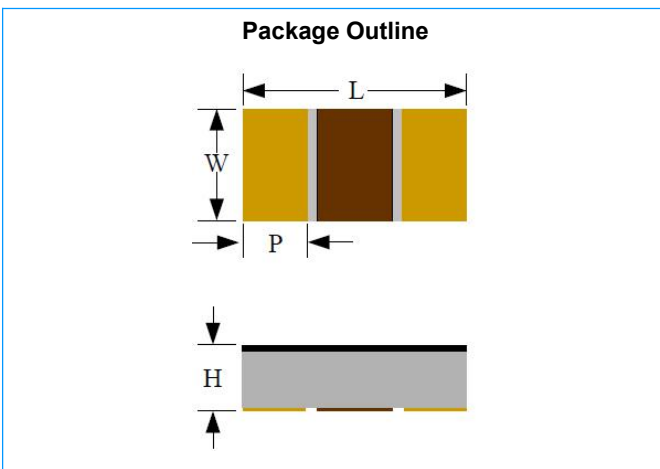
Soldering Parameters



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

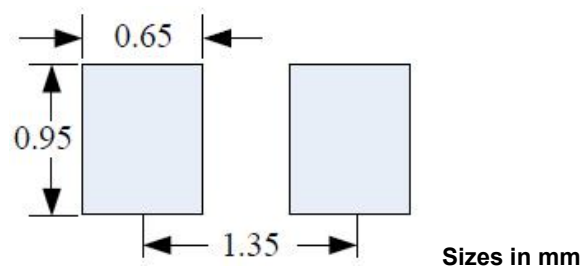
* Tolerance for peak profile temperature (T_P) is defined as a supplier minimum and a user maximum.

Package Dimension



Dimension	Unit: Millimeters		
	Min.	Typ.	Max.
L	1.45	1.60	1.75
W	0.70	0.83	0.95
P	0.20	0.35	0.50
H	0.26	0.36	0.46

Recommended Solder Pad Footprint



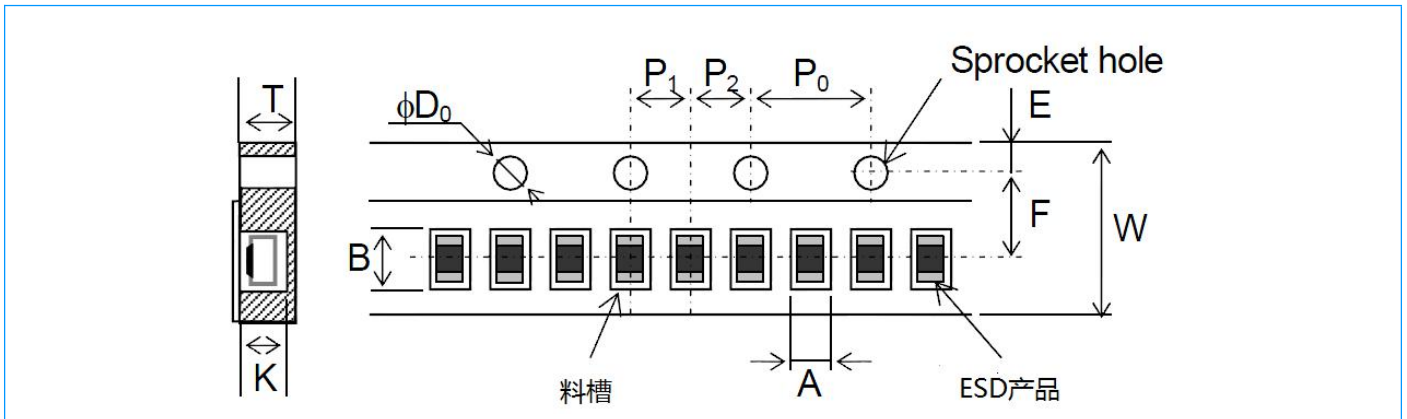
Notes:

This solder pad layout is for reference purposes only.

Surface Mount Polymeric ESD Suppressor

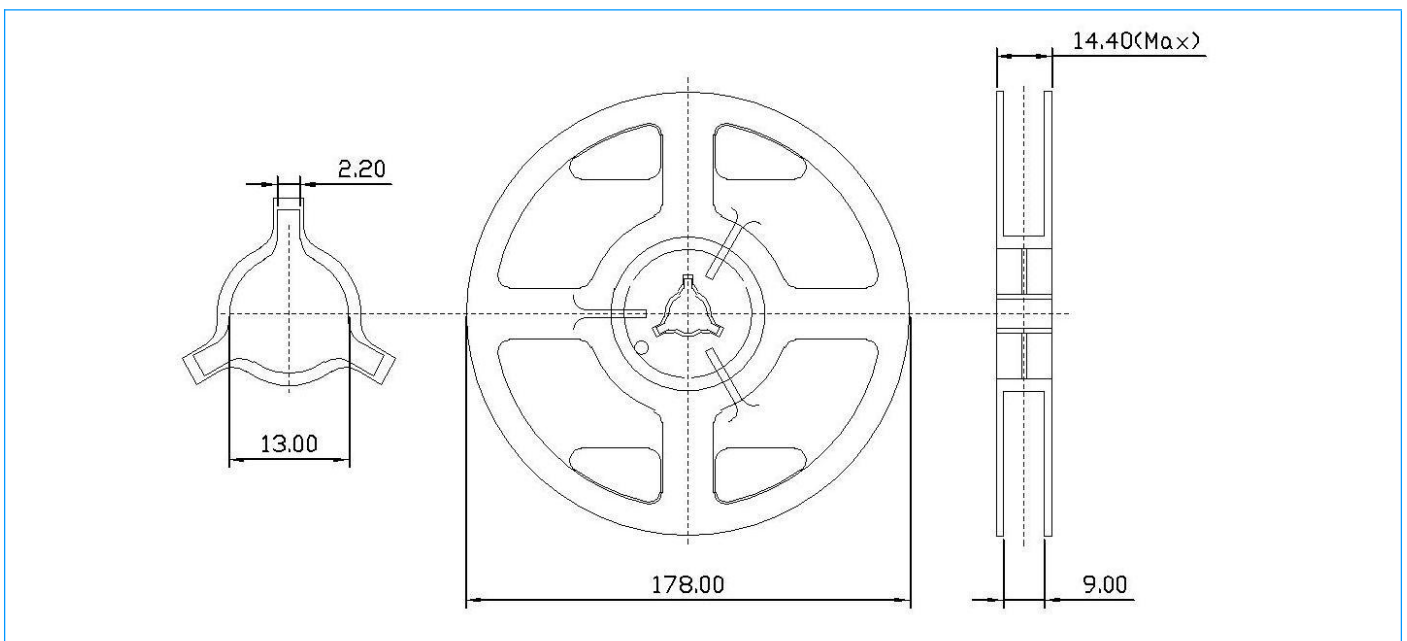
PE0603N05G01B

Tape Specification (Unit: mm)



A	B	W	F	E	P1	P2	P0	ϕD_0	K	T
1.00	1.90	8.00	3.50	1.75	2.00	2.00	4.00	1.55	0.43	0.45
± 0.03	± 0.03	± 0.10	± 0.05	± 0.10	± 0.05	± 0.05	± 0.10	± 0.05	± 0.03	± 0.05

Reel Dimension (Unit: mm)



Order Information

Device	Package	Net Weight	Carrier	Quantity
PE0603N05G01B	(EIA Size) 0603	0.12 mg	Tape & Reel	15,000pcs/reel