

### Features

- ESD protection for high speed data lines to IEC61000-4-2 ESD contact discharge typical 8KV, max 15KV IEC61000-4-2 ESD air discharge typical 15KV, max 25KV
- Multilayer structure
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency, low voltage applications

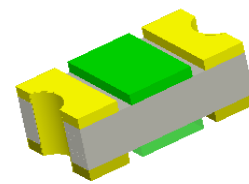
### Description

This device is an ultra low capacitance PESD product designed to protect very high speed data interfaces. PESD05123 has a typical capacitance of only 0.05pf(I/O to GND) , and it can be used to meet the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).

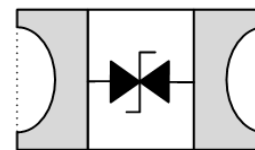
### Applications

- 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.**



1608 Size



Schematic Diagram

### Part Number Code

<b>P</b>	<b>E</b>	<b>S</b>	<b>D</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>2</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

Product Type	
PESD	TSK Multilayer Polymer ESD

Reverse Working Voltage (V)	
05	5V
12	12V
24	24V

Trigger voltage	
2	200V
3	300V

Line	
1	1-Line
2	2-Line
3	3-Line

Size	
2	0402
3	0603

### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)

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	$T_{\text{OPER}}$	-40 to +90	$^\circ\text{C}$
Maximum Storage temperature	$T_{\text{STG}}$	-55 to +125	$^\circ\text{C}$
Maximum lead temperature for soldering during 10s	$T_{\text{L}}$	260	$^\circ\text{C}$

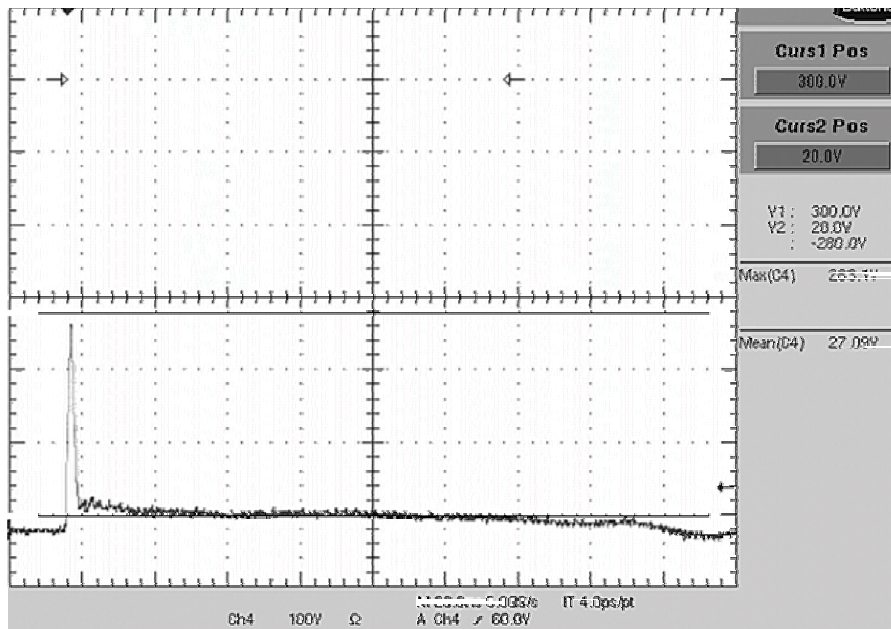
### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Electrical Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Continuous operating voltage	$V_{\text{DC}}$	---	---	---	5	V
Trigger voltage	$V_{\text{T}}$	IEC61000-4-2 8KV contact discharge	---	200	---	V
Clamping voltage	$V_{\text{C}}$	IEC61000-4-2 8KV contact discharge	---	20	---	V
Leakage current	$I_{\text{L}}$	DC 5V shall be applied on component	---	0.10	100	nA
Capacitance	$C_{\text{P}}$	$V_{\text{R}} = 0\text{V}$ , $f = 1\text{MHz}$	---	0.05	0.30	pF
ESD pulse withstand	Pulses	IEC61000-4-2 8KV contact discharge	100	---	---	---

Notes: 1, Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.

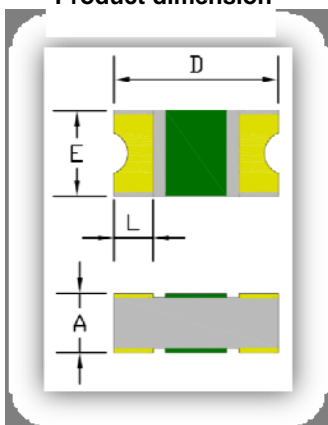
2, After reliability tests such as high Temp storage, Temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.

Typical PESD clamping for +8KV pulse per IEC61000-4-2



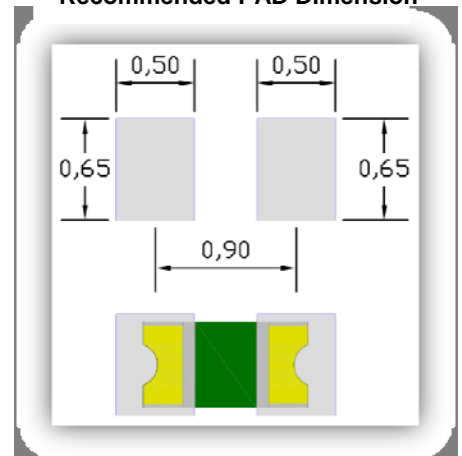
Product & PAD Dimension

Product dimension



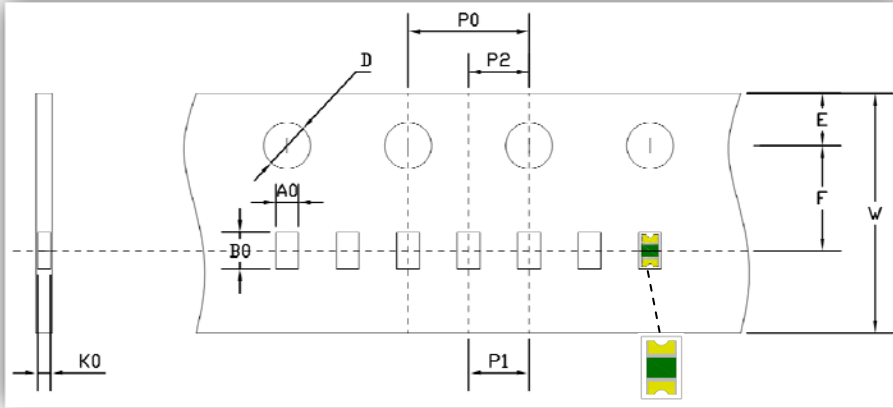
Dimension	Unit: Millimeters		
	Min	Typ	Max
D	0.90	1.05	1.20
E	0.45	0.55	0.65
L	0.15	0.25	0.35
A	0.25	0.36	0.45

Recommended PAD Dimension



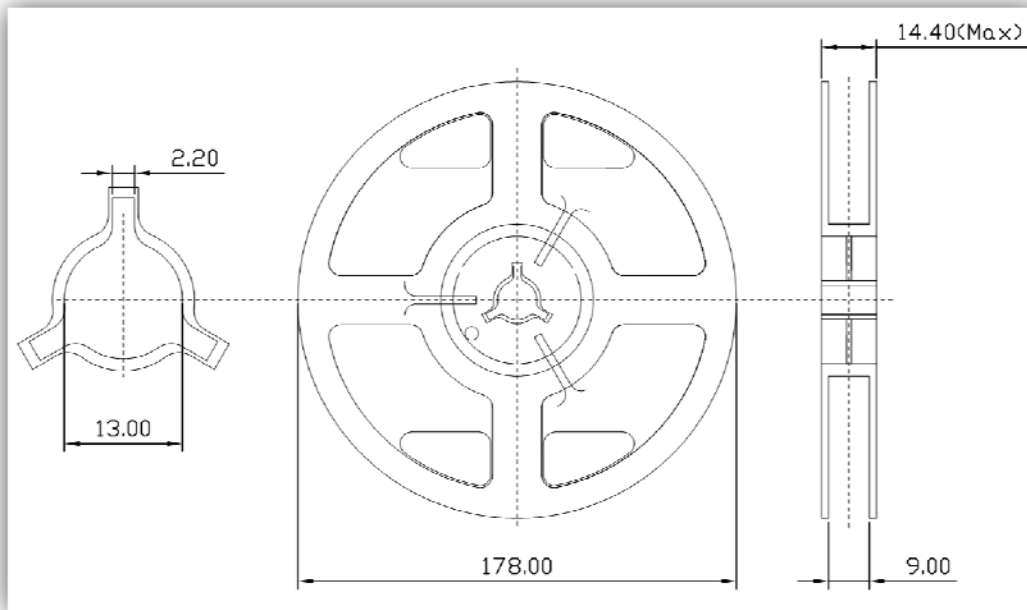
Package Information

Tape Dimension



Dimension	Typical	Unit
A0	0.75	mm
B0	1.22	
K0	0.43	
D	1.55	
P0	4.00	
P1	2.00	
P2	2.00	
E	1.75	
F	3.50	
W	8.00	

Reel Dimension



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
PESD05123	1005	0.44 mg	Tape & Reel	10,000pcs/reel	RoHS compliant