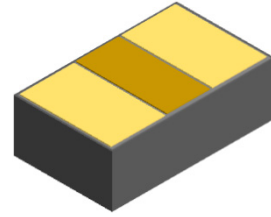


# 1 Channel Ultra-low Capacitance ESD Protection

## Feature

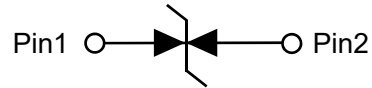
- Ultra-Low capacitance:0.05pF(typ.)
- Low leakage current(<0.1μA)
- Fast response time(<1ns)
- Bi-directional, single line protection
- Transient protection for data lines to IEC 61000-4-2(ESD) 25kV(air), 15kV(contact);



**Bottom View**

## Applications

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



**Circuit Diagram**

## Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Operating Temperature Range	T <sub>OPEN</sub>	-55~+125	°C
Storage Temperature Range	T <sub>STG</sub>	-55~+125	°C
Maximum Lead Temperature for Soldering During 10s	T <sub>L</sub>	260	°C
ESD Protection-Contact Discharge	V <sub>ESD</sub>	15	kV
ESD Protection-Air Discharge	V <sub>ESD</sub>	25	kV

## Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Continuous Operating Voltage	V <sub>DC</sub>	-	-	-	12	V
Trigger Voltage	V <sub>T</sub>	V <sub>ESD</sub> = 8kV	-	300	-	V
Clamping Voltage	V <sub>C</sub>	V <sub>ESD</sub> = 8kV	-	35	-	V
Leakage Current	I <sub>L</sub>	V <sub>DC</sub> = 12V	-	0.01	0.1	μA
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 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 10μA.

## Typical Characteristics

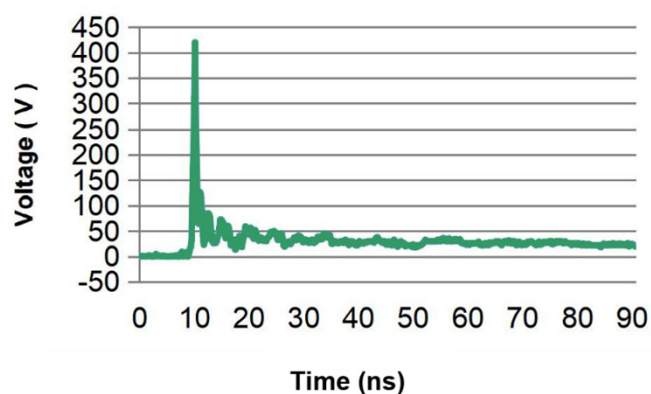


Fig.1 Typical ESD Response  
(IEC 61000-4-2, 8kV contact discharge)

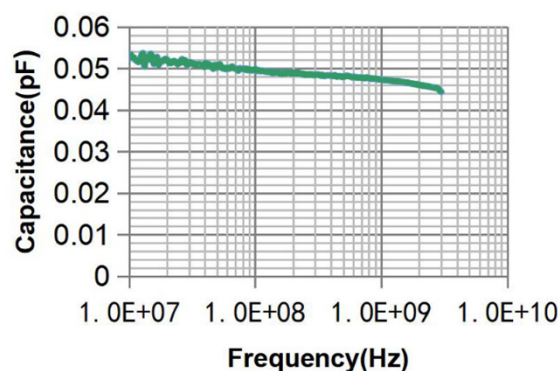
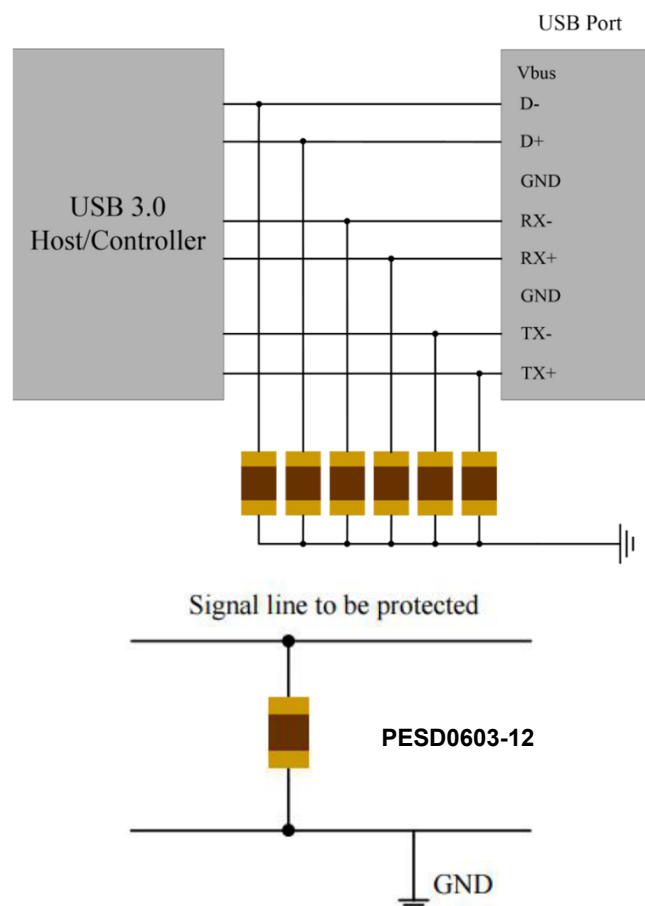


Fig.2 Typical Device Capacitance VS. Frequency

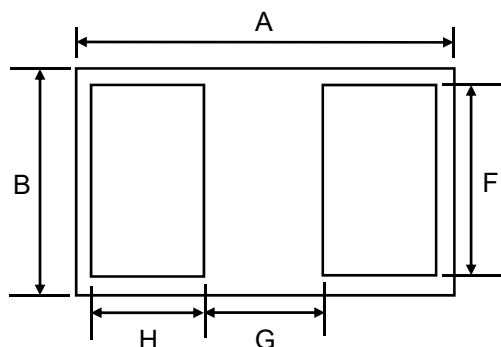
## ESD Protection for Signal Line

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

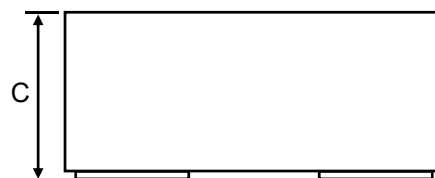
- Place the PESD as close to the input terminal or connector as possible.
- Minimize the path length between the PESD and the protected signal line.
- Use ground planes whenever possible.



## Product dimension (0603)

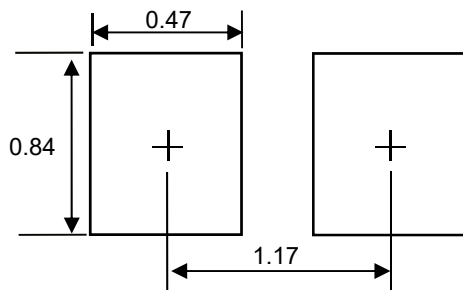


Bottom View



Side View

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.067
B	0.70	0.90	0.028	0.035
C	0.32	0.40	0.013	0.016
H	0.345	0.385	0.014	0.015
F	0.715	0.755	0.028	0.030
G	0.78	0.82	0.031	0.032



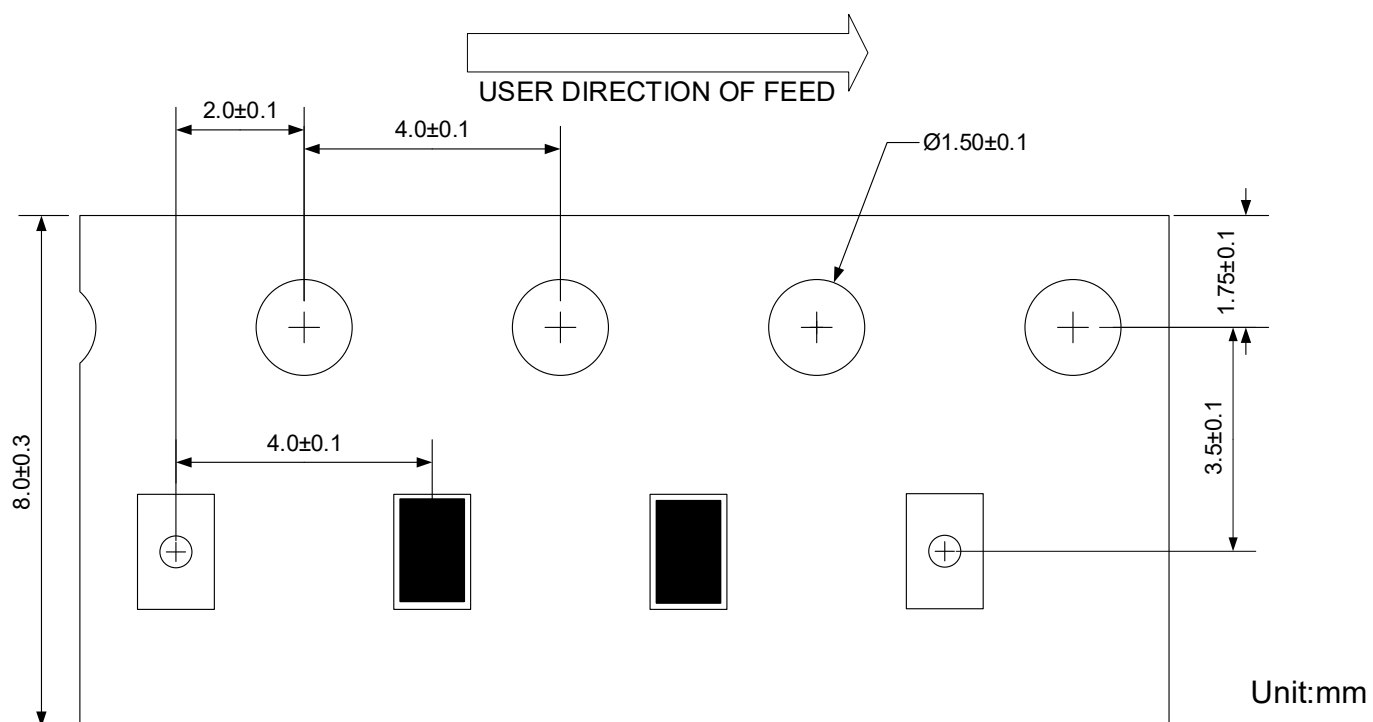
Unit:mm

Suggested PCB Layout


## Ordering information

Device	Package	Reel	Shipping
PESD0603-12	0603	7"	5000 / Tape & Reel

## Load with information




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