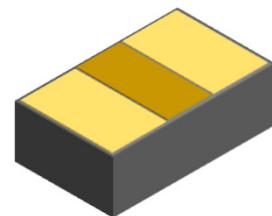


## 1 Channel Ultra-low Capacitance ESD Protection

### Feature

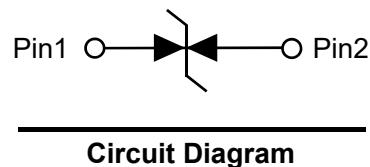
- Ultra-Low capacitance:0.05pF(typ.)
- Low leakage current(<0.1μA)
- Fast response time(<1ns)
- Bi-directional, single line protection
- Transient protection for data lines to IEC 61000-4-2(ESD) 25kV(air), 15kV(contact);



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	$T_{OPEN}$	-55~+125	°C
Storage Temperature Range	$T_{STG}$	-55~+125	°C
Maximum Lead Temperature for Soldering During 10s	$T_L$	260	°C
ESD Protection-Contact Discharge	$V_{ESD}$	15	kV
ESD Protection-Air Discharge	$V_{ESD}$	25	kV

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Continuous Operating Voltage	$V_{DC}$	-	-	-	12	V
Trigger Voltage	$V_T$	$V_{ESD} = 8kV$	-	300	-	V
Clamping Voltage	$V_C$	$V_{ESD} = 8kV$	-	35	-	V
Leakage Current	$I_L$	$V_{DC} = 12V$	-	0.01	0.1	μA
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$	-	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 10μA.

## Typical Characteristics

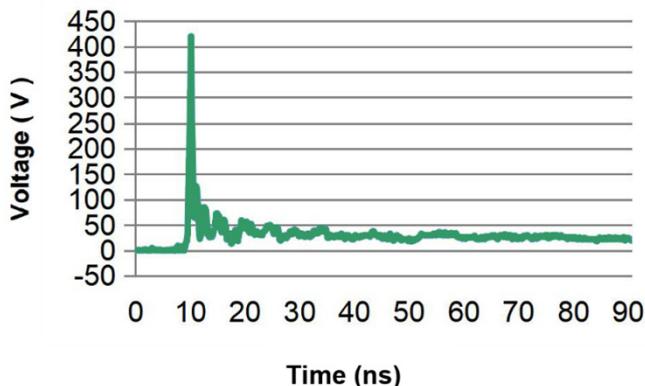


Fig.1 Typical ESD Response  
(IEC 61000-4-2, 8kV contact discharge)

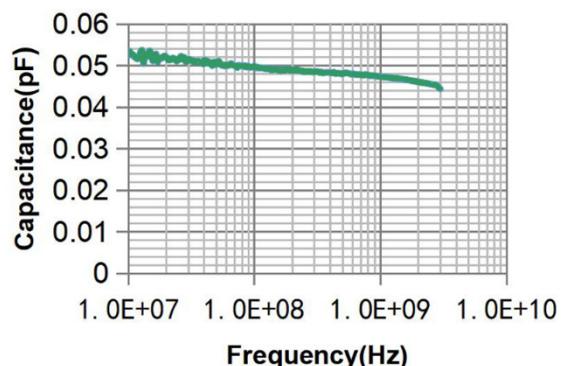
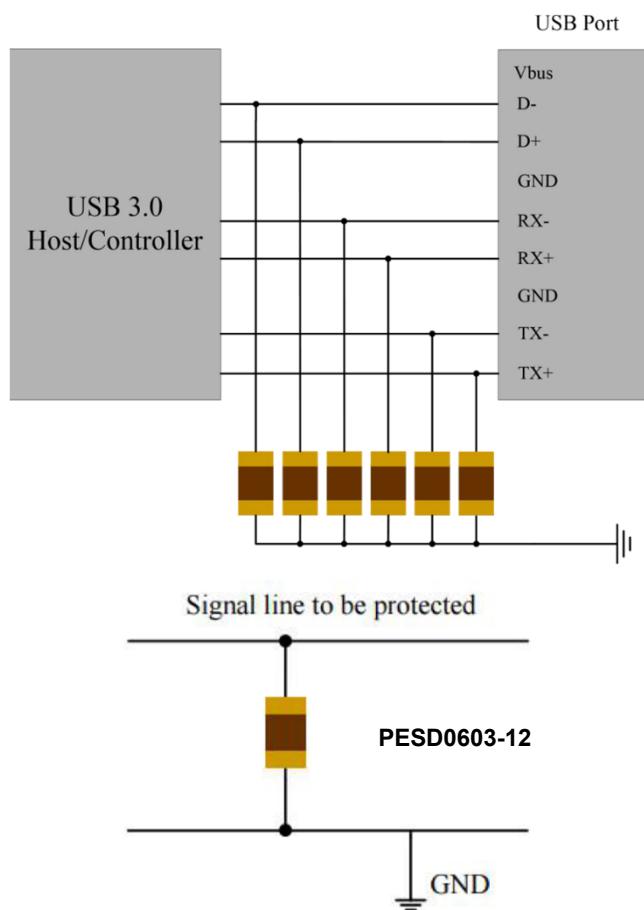


Fig.2 Typical Device Capacitance VS. Frequency

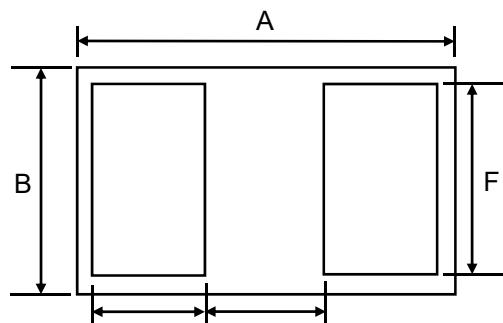
## ESD Protection for Signal Line

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

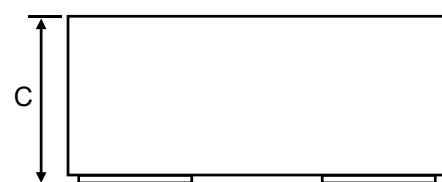
- Place the PESD as close to the input terminal or connector as possible.
- Minimize the path length between the PESD and the protected signal line.
- Use ground planes whenever possible.



## Product dimension (0603)

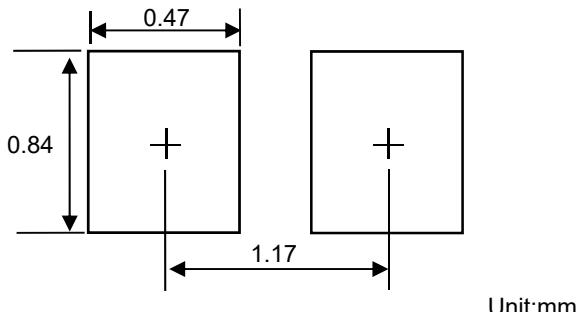


Bottom View



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



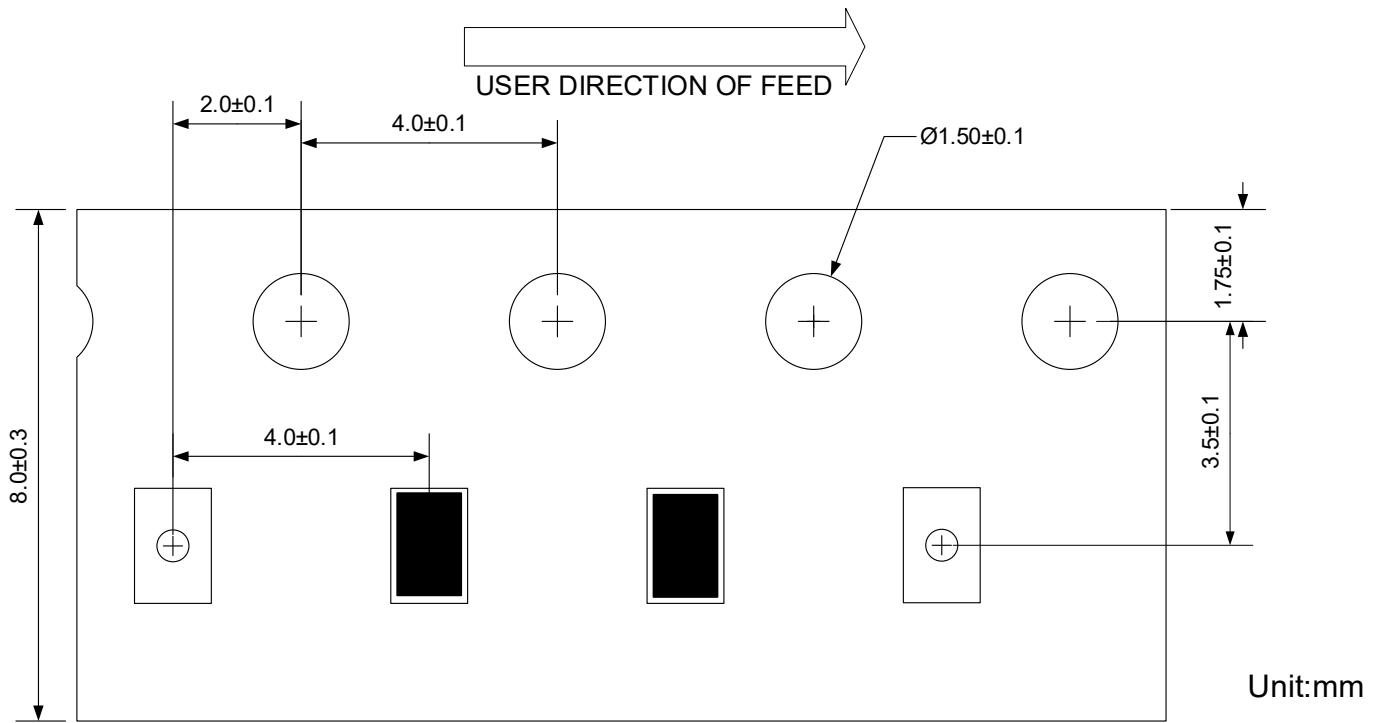
Unit:mm

Suggested PCB Layout

## Ordering information

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

## Load with information



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