

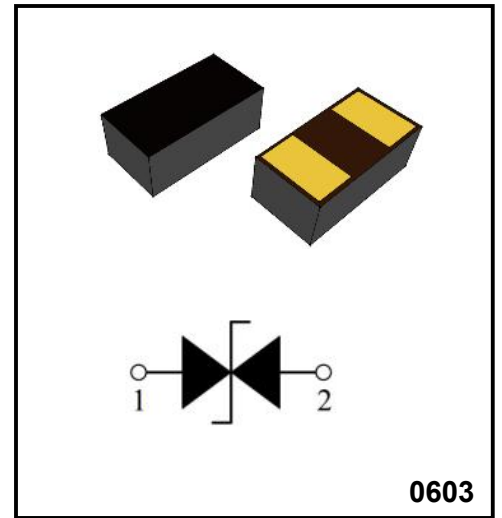
**1 Channel Ultra-low Capacitance  
ESD Protection Diode**

**Features**

- ◆ Ultra-Low capacitance: 0.05pF (typ.)
- ◆ Low leakage current (<100nA)
- ◆ Fast response time (<1ns)
- ◆ Bi-directional, single line protection
- ◆ IEC 61000-4-2 (ESD Air): 15kV
- ◆ IEC 61000-4-2 (ESD Contact): 8kV

**Application**

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



**Order Information**

Part Number	Package	Size (mm)	Delivery Form	Delivery Quantity
PESD0603B30	0603	1.60x0.80x0.40	7" T&R	5000PCS/Tape

**Limiting Values (TA = 25 °C, unless otherwise specified)**

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>ESD</sub>	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	8	kV
		IEC 61000-4-2; Air Discharge	-	15	kV
T <sub>A</sub>	Operating Temperature Range	-	-40	90	°C
T <sub>stg</sub>	Storage Temperature Range	-	-55	125	°C

**Electrical Characteristics (TA = 25 °C unless otherwise specified)**

Symbol	Parameter	conditions	Min	Typ.	Max	Unit
V <sub>DC</sub>	Continuous Operating Voltage		-	-	30.0	V
V <sub>T</sub>	Trigger Voltage	IEC61000-4-2 8kV contact discharge	-	450	-	V
V <sub>C</sub>	Clamping Voltage	IEC61000-4-2 8kV contact discharge	-	40	-	V
I <sub>L</sub>	Leakage Current	DC 30V shall be applied on component	-	-	100	nA
C <sub>J</sub>	Capacitance	Measured at 10MHz	-	0.05	-	pF

**Typical Characteristics**

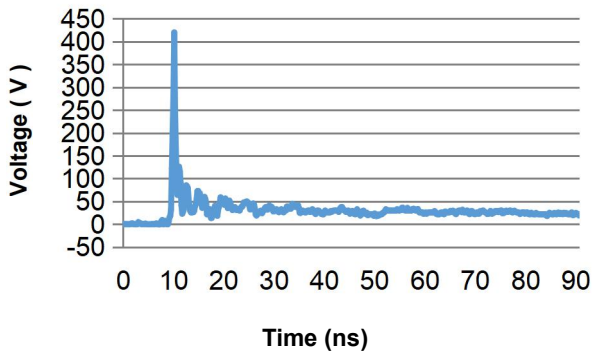


Fig.1 Typical ESD Response  
(IEC 61000-4-2, 8kV contact discharge)

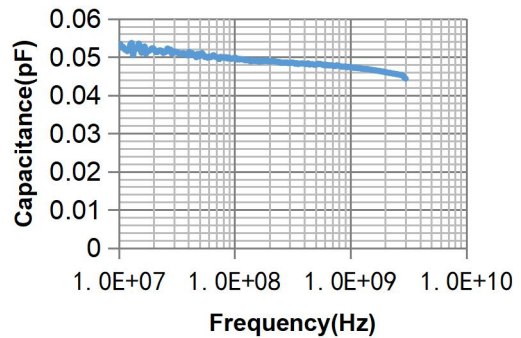
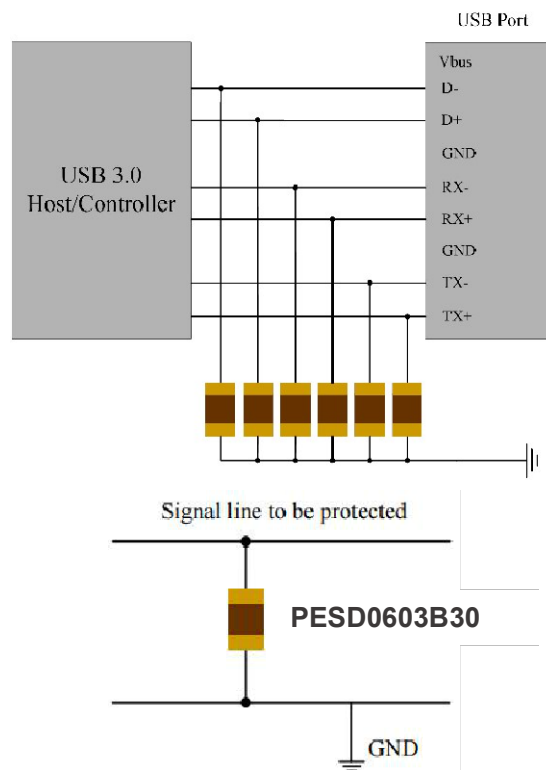


Fig.2 Typical Device Capacitance VS. Frequency

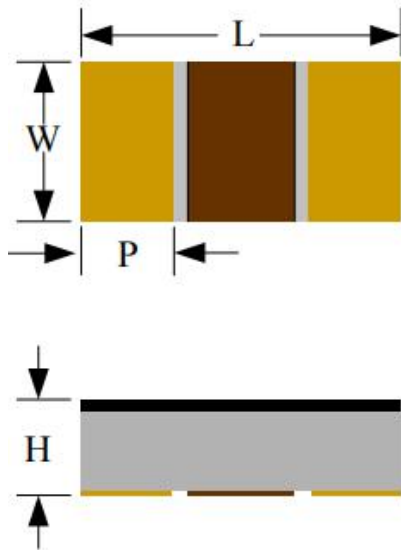
**ESD Protection for Signal Line**

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

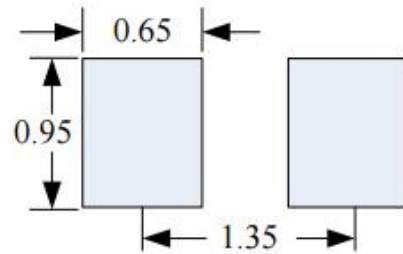
- Place the PESD as close to the input terminal or connector as possible.
- Minimize the path length between the PESD and the protected signal line.
- Use ground planes whenever possible.



Package Dimension



Recommended Solder Pad Footprint



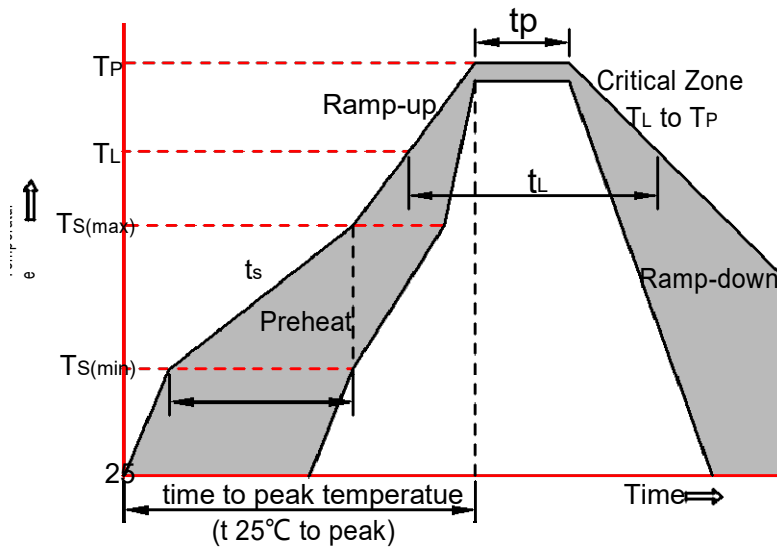
**\*Sizes in mm**

Notes:

This solder pad layout is for reference purposes only.

Dimension	Unit: Millimeters	
	Min.	Max.
L	1.45	1.75
W	0.70	0.95
P	0.20	0.50
H	0.26	0.46

Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts(max) to TL - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(tL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C

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