PESD1263U005

Single-Channel ESD Protection Device in 0603 Package

1 Feature

- Ultra-low capacitance,0.05pF(typ.)
- Low leakage current(<10nA)
- Fast response time(<1ns)
- **Bi-directional, single line protection**

2 Description

PESD1263U005 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).

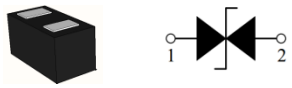
3 Application

- Smart phone/Mobile internet device
- Laptop/Desktop computer
- Antennas (Cell Phones, GPS…)
- USB 3.0, USB 3.1 and high speed interface

4 Device Information

Model	Package	Size
PESD1263U005	0603-2	1.60 mm × 0.80 mm × 0.30 mm

5 Pin Description



6 General Characteristics

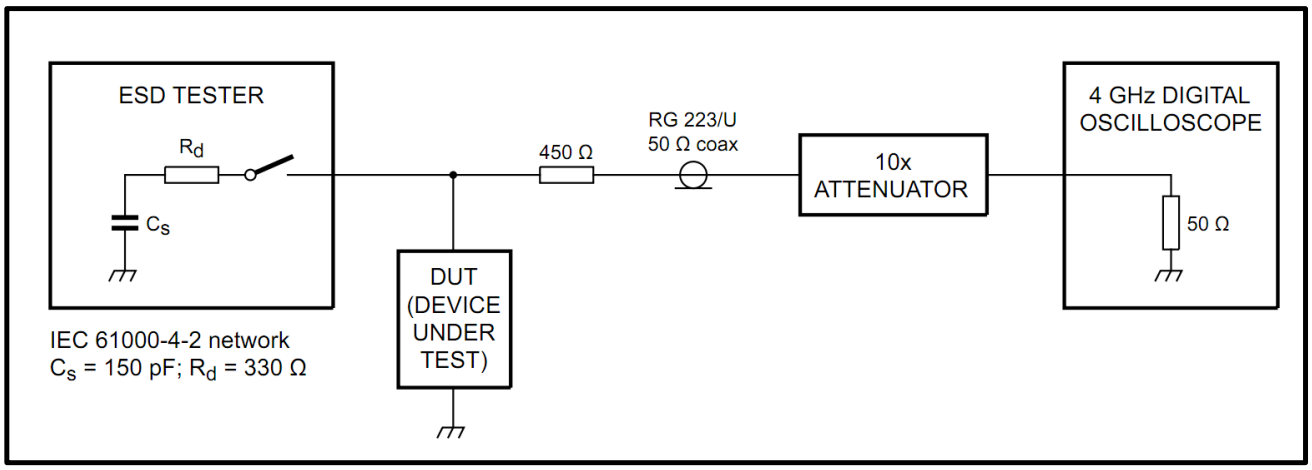
Parameter	Value	Unit
Contact Discharge Voltage Per IEC61000-4-2	8K	V
Air Discharge Voltage Per IEC61000-4-2	15K	V
Operating Temperature	-55 to +125	℃
Storage Temperature	-40 to +85	℃

7 Electrical Characteristics（T_A =25°C）

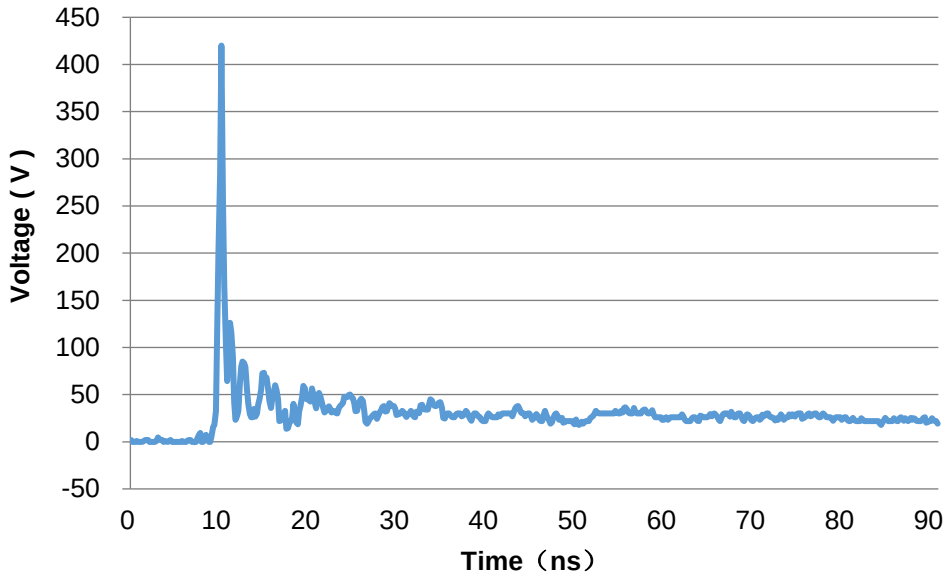
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Continuous Operating Voltage	V_{DC}	---	---	---	12	V
Trigger Voltage	V_T	IEC61000-4-2 8KV contact discharge	---	450	---	V
Clamping Voltage	V_C	IEC61000-4-2 8KV contact discharge	---	40	---	V
Leakage Current	I_L	DC 12V shall be applied on component	---	---	10	nA
Capacitance	C_P	Measured at 10MHz	---	0.05	---	pF
ESD Pulse Withstand	Pulses	IEC61000-4-2 8KV contact discharge	1000	---	---	---

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

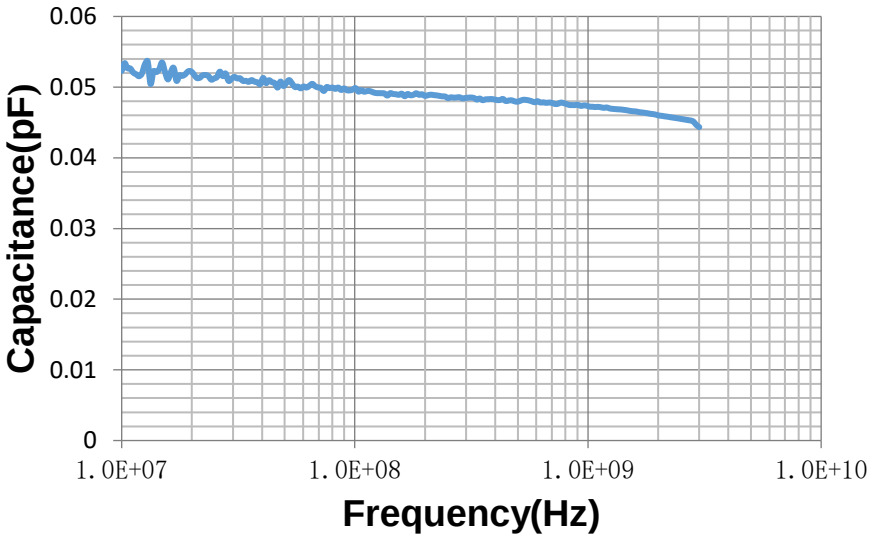
8 Typical ESD Response（IEC 61000-4-2, 8KV contact discharge）



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

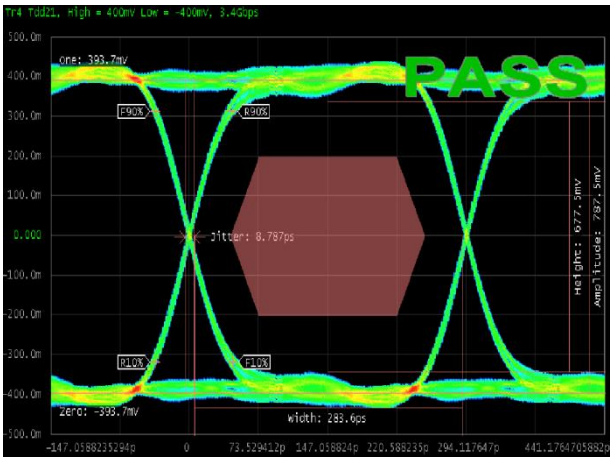


10 Typical Device Capacitance VS. Frequency



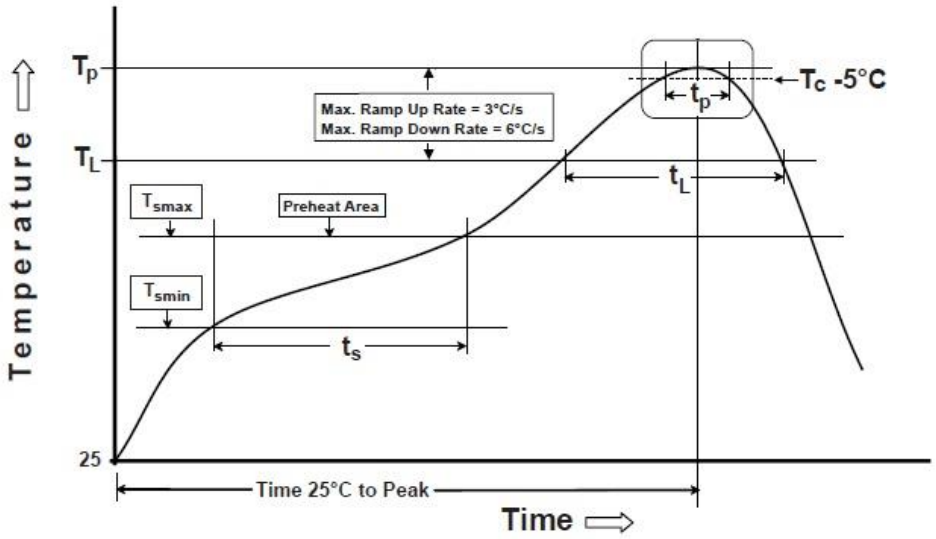
11 Eye Diagram Measurement

HDMI Mask at 3.4 Gbps



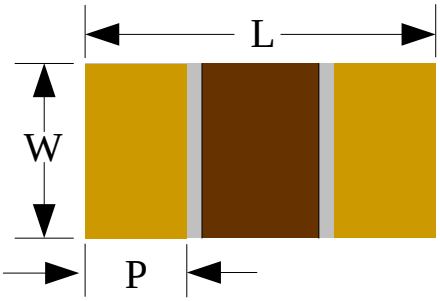
USB3.0 Mask at 5.0 Gbps

12 Soldering Parameters



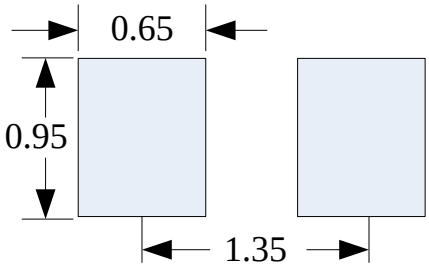
Profile Feature	Pb-Free Assembly
Pre Heat Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	 150 °C 200 °C 60-120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max.
Liquidus temperature (T_L) Time (t_L) maintained above T_L	217 °C 60-150 seconds
Peak package 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.	

13 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

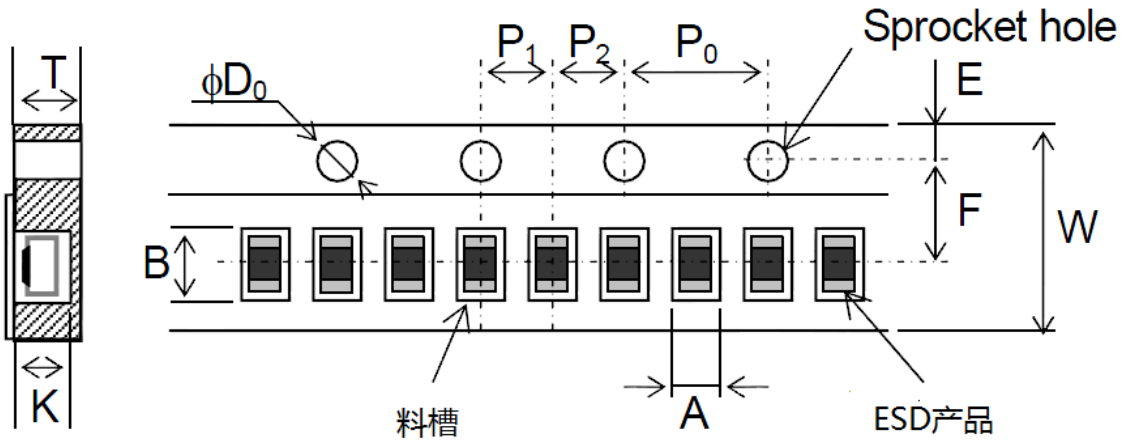


***Sizes in mm**

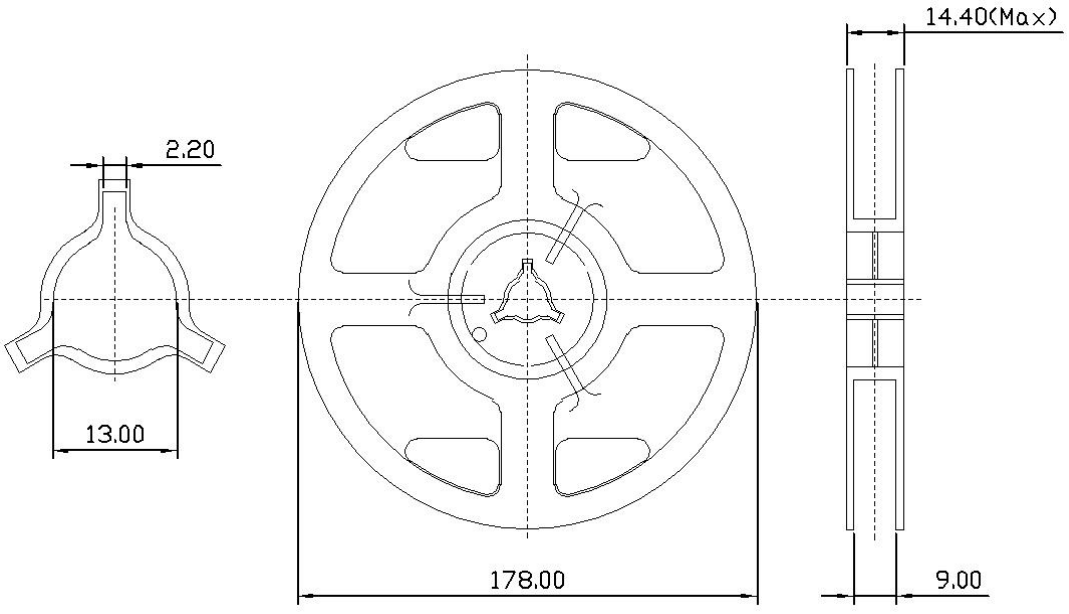
Notes：

This solder pad layout is for reference purposes only.

14 Taping Specification



Tape Dimension	A	B	W	F	E	P_1	P_2	P_0	ΦD0	K	T
	1.00±0.03	1.9±0.03	8.00±0.10	3.50±0.05	1.75±0.10	2.00±0.05	2.00±0.05	4.00±0.10	1.55±0.05	0.43±0.03	0.43±0.03



15 Ordering & Contact Information

Device	Package	Net Weight	Carrier	Quantity
PESD1263U005	0603-2L	0.12 mg	Tape & Reel	15,000pcs/reel

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