1. Description

The PESD5V0C2UMYL(ES) is an ultra-low capacitance TVS (Transient Voltage Suppressor) designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge). The PESD5V0C2UMYL(ES) may be used to provide ESD protection up to ±20kV (contact discharge) according to IEC61000-4-2, and withstand peak pulse current up to 8.0A (8/20μs) according to IEC61000-4-5.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±20kV Contact Discharge
  - ±20kV Air Discharge
- 30W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 3.3/5.0V
- Low leakage current
- RoHS compliant
- ESD protection of two lines
- Junction capacitance: 0.42pF Typ.

3. Applications

- USB & HDMI Interfaces
- Portable electronics
- Servers, notebooks, and desktop PCs
- Display Port 1.3, eSATA
- Digital Visual Interface (DVI)
- PoE

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
PESD5V0C2UMYL(ES)	DFN1006-3L	|L	Halogen free	Tape & Reel	10,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

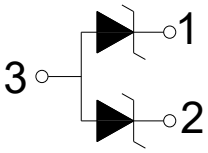
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		
3	GND	Connect to GND		

Table-2 Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	30	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		8	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±20	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±20	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

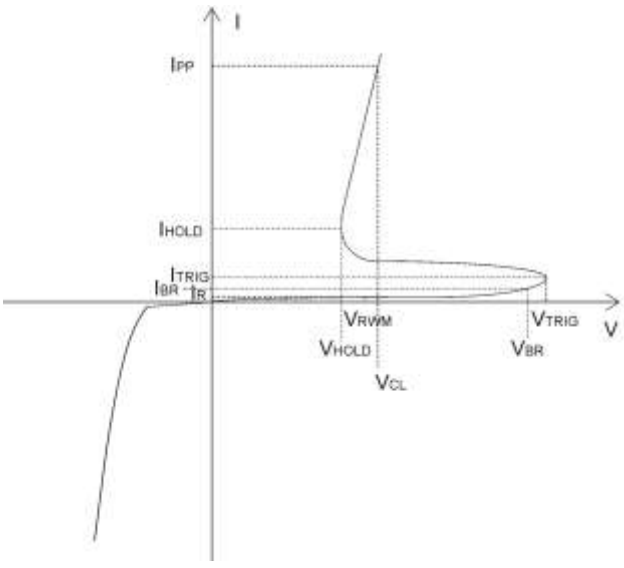
6.2. Electrical Characteristics

At TA = 25℃ unless otherwise noted

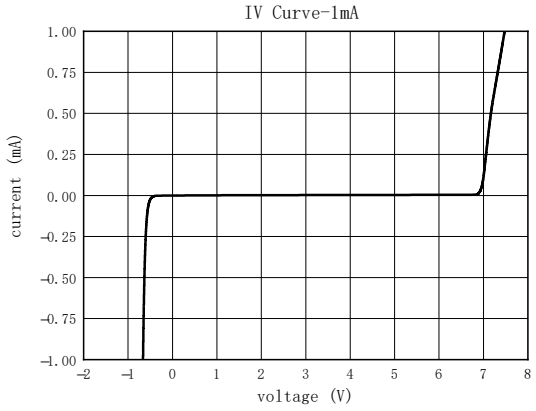
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			3.3	5.0	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA，IO-GND	6.0	7.5		V
Reverse Leakage Current	I_R	V_{RWM}=3.3V			100	nA
Clamping Voltage	V_{CL}	I_{PP}=3.0A; tp=8/20us		2.0	3.0	V
Clamping Voltage	V_{CL}	I_{PP}=8.0A; tp=8/20us		3.5	4.0	V
Clamping Voltage	V_C	I_{PP}=16A; tp=10/100ns		4.3	5.3	V
Junction Capacitance	C_J	VR=0V; f=1MHz		0.42	0.50	pF

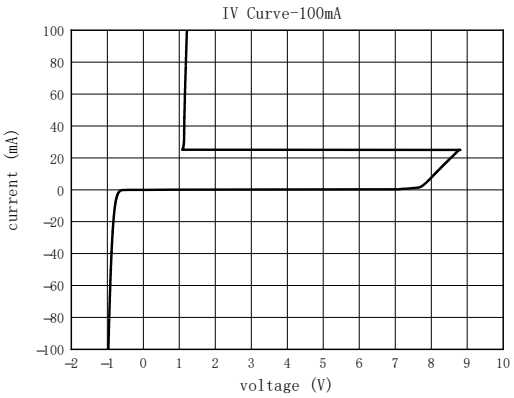
Table-4 Electrical Characteristics

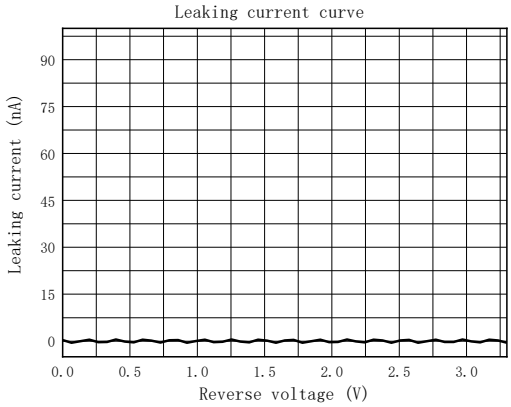
Symbol	Parameters
V_{RWM}	Reverse stand-off voltage
I_R	Reverse leakage current
V_{BR}	Reverse breakdown voltage
I_{BR}	Reverse breakdown current
V_{CL}	Clamping voltage
V_{TRIG}	Reverse trigger voltage
I_{TRIG}	Reverse trigger current
V_{HOLD}	Reverse holding voltage
I_{HOLD}	Reverse holding current
I_{PP}	Peak pulse current

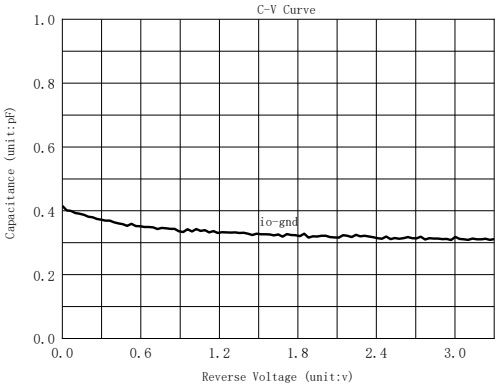


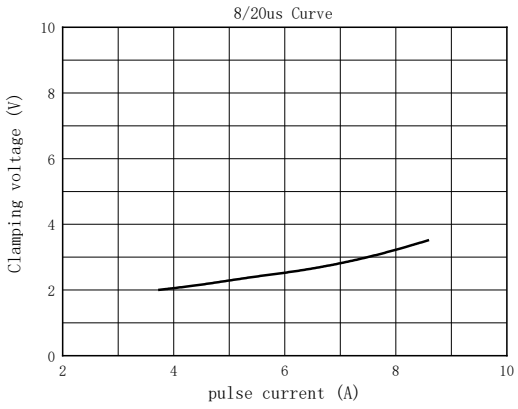
7. Typical Characteristic

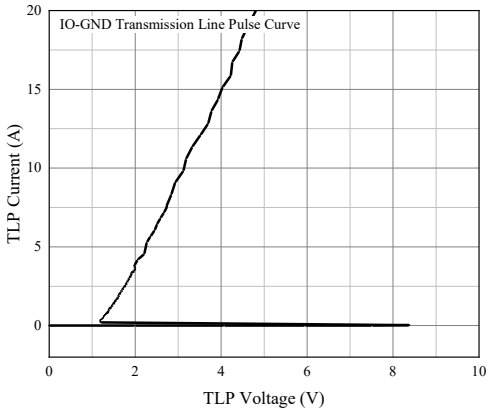


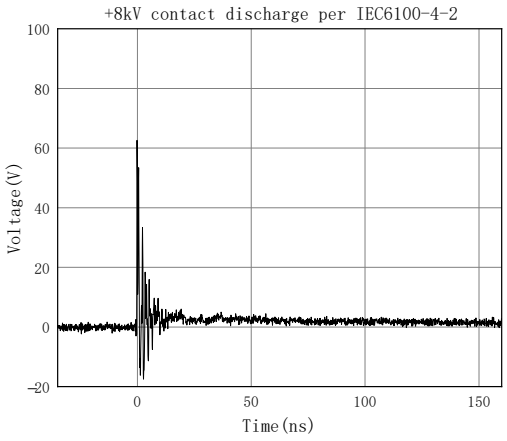


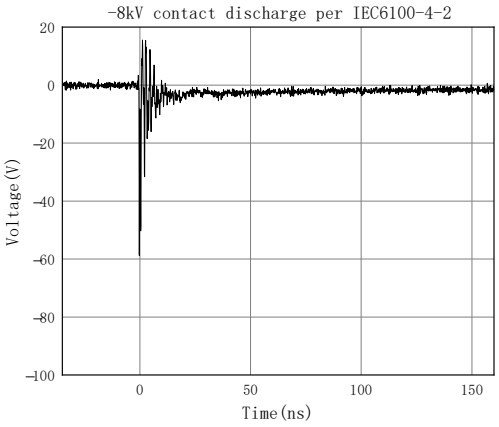




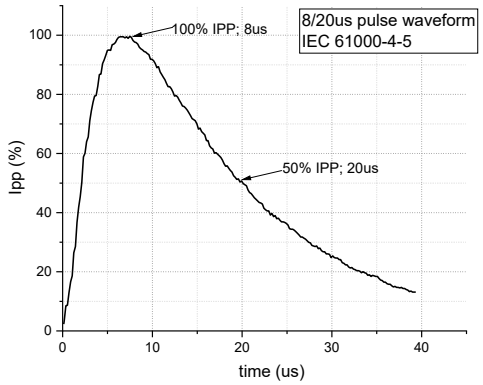


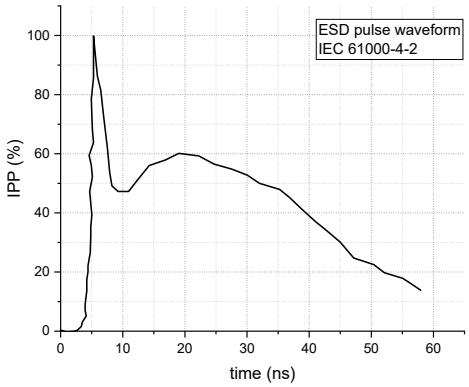






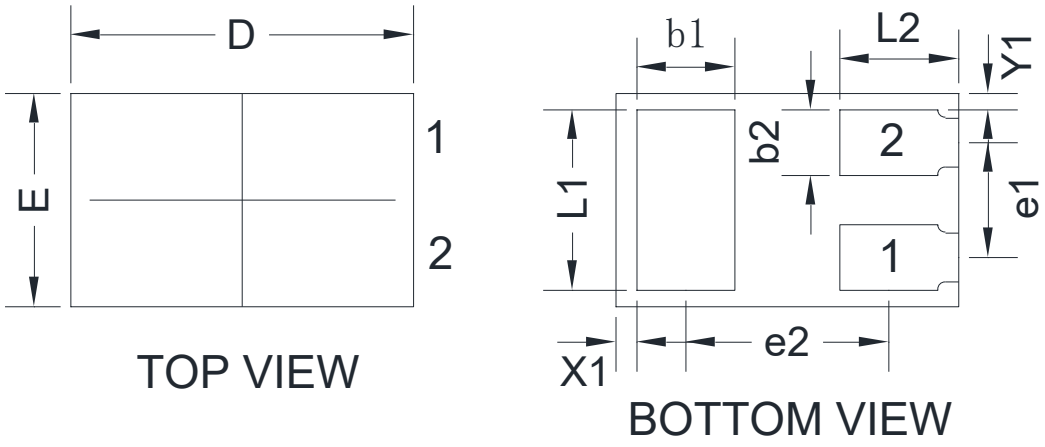
Measurement Wave According to IEC Standard

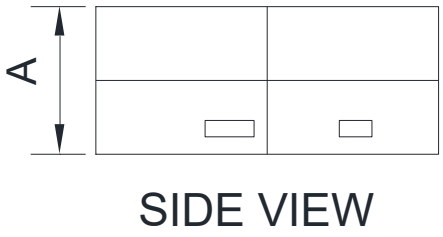




8. Dimension (DFN1006-3L)

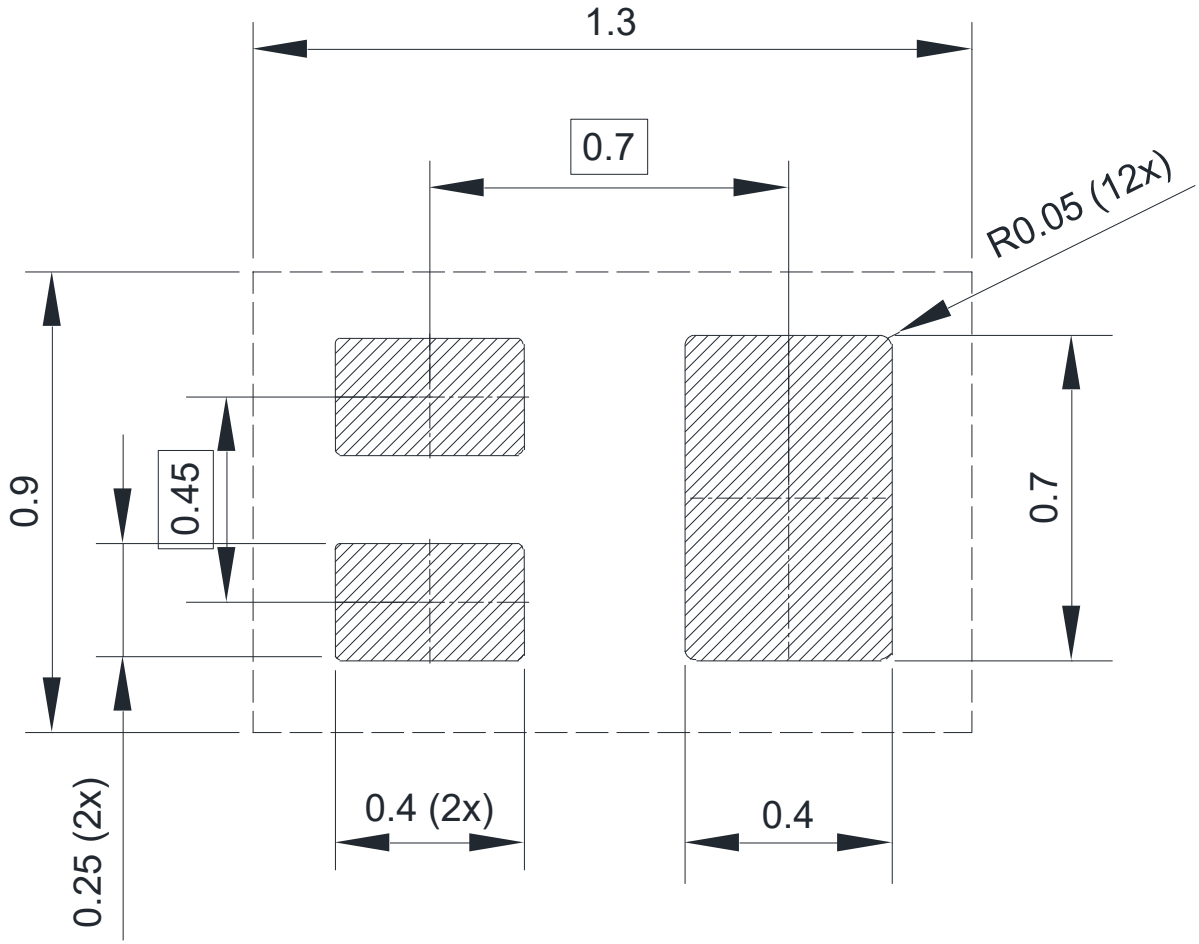
POD (H)





Symbol	Millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b1	0.20	0.25	0.30
b2	0.10	0.15	0.20
L1	0.45	0.50	0.55
L2	0.25	0.30	0.35
X1	0.025		0.065
Y1	0.025		0.065
e1	0.350 BSC		
e2	0.675 BSC		

9. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

DISCLAIMER

ELECSUPER PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with ElecSuper products. You are solely responsible for
(1) selecting the appropriate ElecSuper products for your application;
(2) designing, validating and testing your application;
(3) ensuring your application meets applicable standards, and any other safety, security, or other requirements.
These resources are subject to change without notice. ElecSuper grants you permission to use these resources only for development of an application that uses the ElecSuper products described in the resource. Other reproduction and display of these resources are prohibited. No license is granted to any other ElecSuper intellectual property right or to any third party intellectual property right. ElecSuper disclaims responsibility for, and you will fully indemnify ElecSuper and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources. ElecSuper’s products are provided subject to ElecSuper’s Terms of Sale or other applicable terms available either on www.elecsuper.com or provided in conjunction with such ElecSuper products. ElecSuper’s provision of these resources does not expand or otherwise alter ElecSuper’s applicable warranties or warranty disclaimers for ElecSuper products.