SuperESD - PESD5V0L1BA-ES

1. Description

The PESD5V0L1BA-ES is Transient Voltage Suppressor that designed to protect components which are connected to data and transmission lines against electrostatic discharge (ESD), electrical fast transient (EFT), and lightning. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 250W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- RoHS compliant
- Protecting one bi-directional line
- Junction capacitance: 30pF Typ.

3. Applications

- Control & monitoring systems
- Portable electronics
- Servers, notebooks, and desktop PCs
- Set-top box
- Communication systems

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
PESD5V0L1BA-ES	SOD-323	||||E6	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

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5. Pin Configuration and Functions

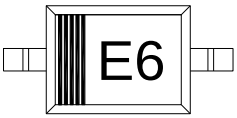
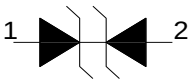
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		

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}	-	250	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		18	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	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

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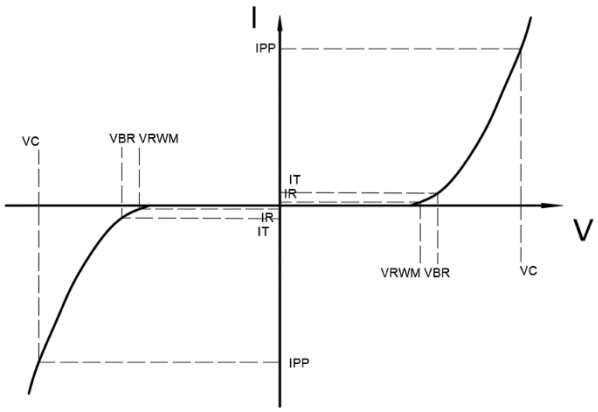
6.2. Electrical Characteristics

At TA = 25℃ unless otherwise noted

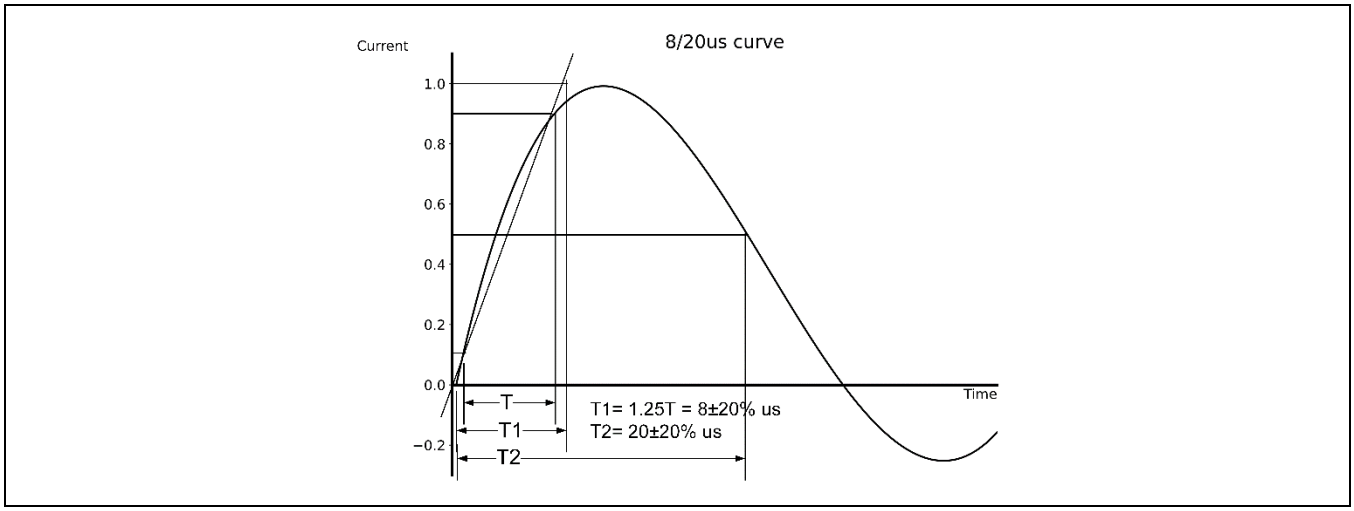
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	5.5			V
Reverse Leakage Current	I_R	V_{RWM}=5V			1.0	uA
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us		7.0	8.0	30
Clamping Voltage	V_C	I_{PP}=18A; tp=8/20us		10.0	12.0.	V
Junction Capacitance	C_J	I/O to GND; VR=0V; f=1MHz		30	45	pF

Table-4 Electrical Characteristics

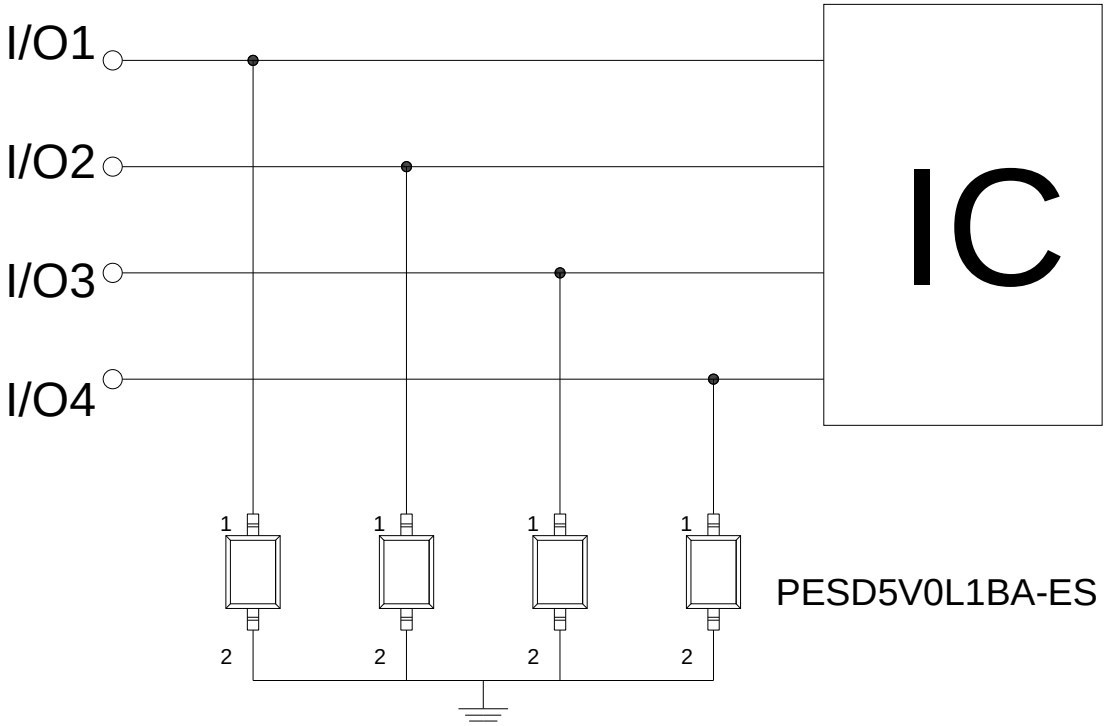
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



7. Typical Characteristic



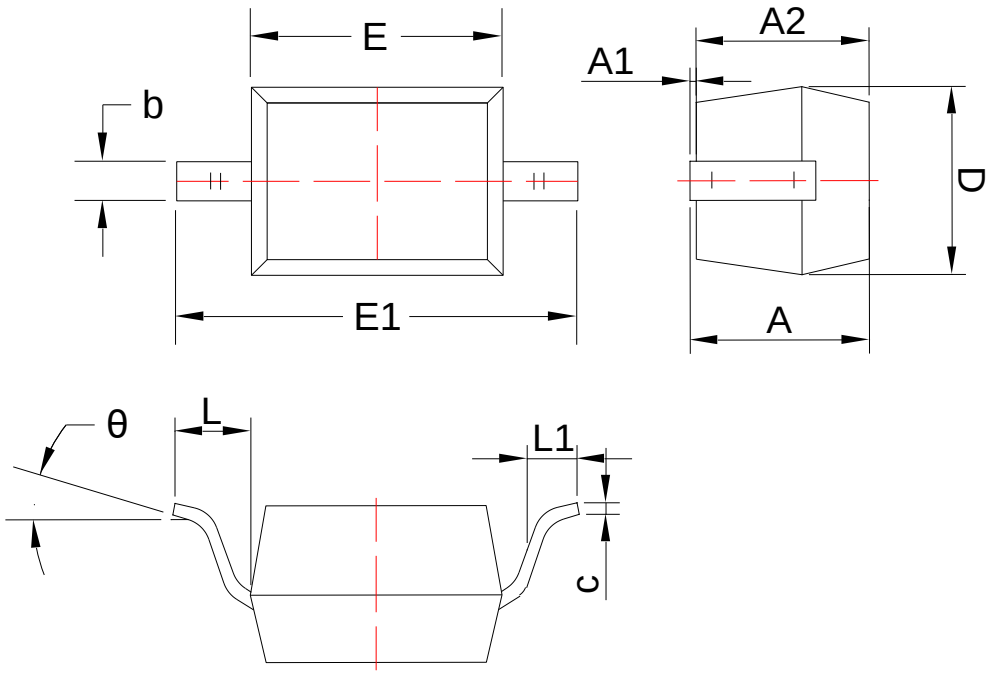
8. Typical Application



Typical Interface Application

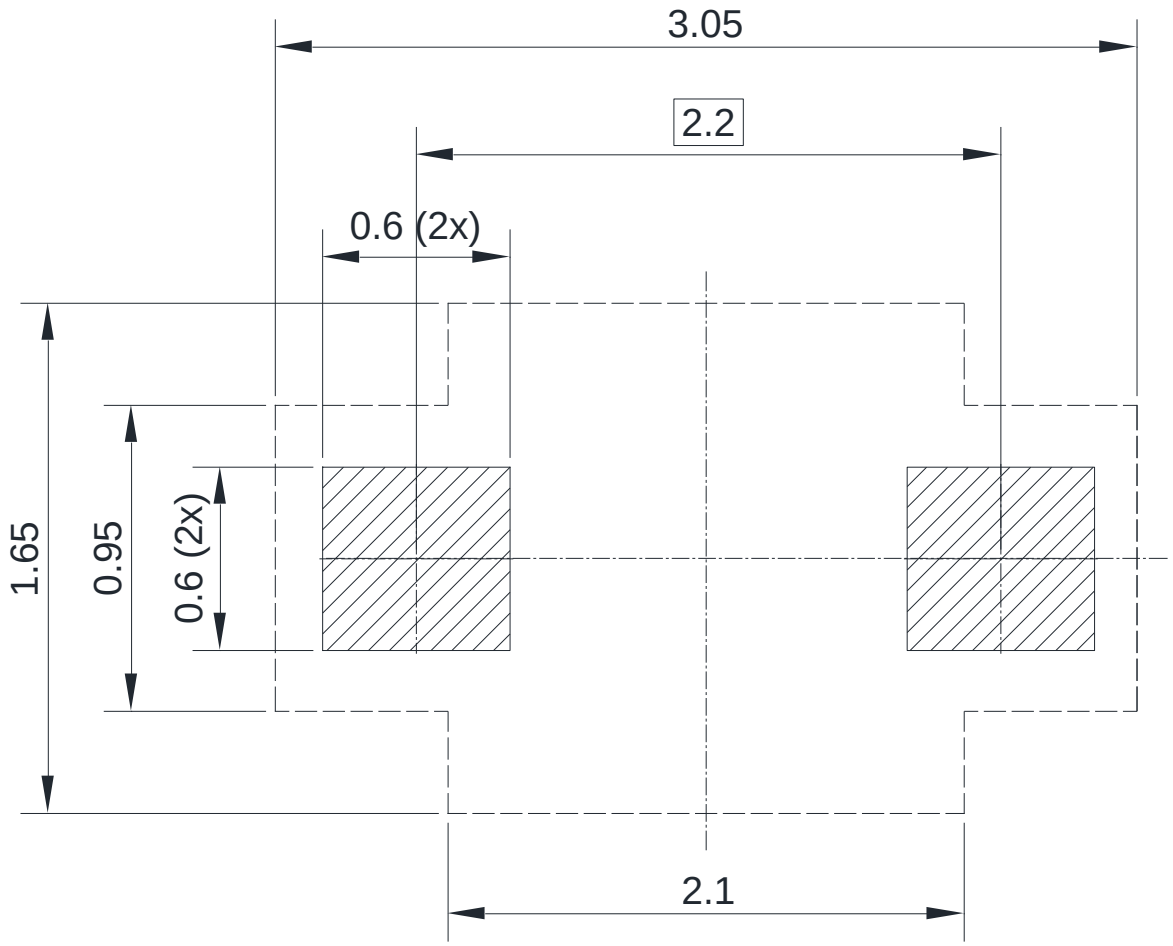
9. Dimension (SOD-323)

POD(Z)



Symbol	Dimensions in Millimeters	
	Min.	Max.
A	0.80	1.00
A1	0.00	0.14
A2	0.66	0.97
b	0.25	0.35
c	0.08	0.18
D	1.20	1.40
E	1.55	1.80
E1	2.50	2.80
L	0.475REF	
L1	0.25	0.40
θ	0°	8°

10. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

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