SuperESD - AOZ8S212UD4-03(ES)

1. Description

The AOZ8S212UD4-03(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 lighting. All pins are rated to withstand 15kV ESD pulses using the IEC61000-4-2 air discharge method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±15kV Contact Discharge
  - ±15kV Air Discharge
- 30W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- RoHS compliant
- Protecting 4 unidirectional lines
- Ultra Low Junction capacitance: 0.22pF TYP. (IO-GND)

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
AOZ8S212UD4-03(ES)	DFN2510-10L	.3V4UD	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7inches

Table-1 Ordering information

5. Pin Configuration and Functions

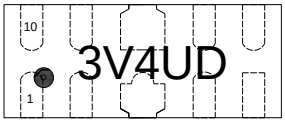
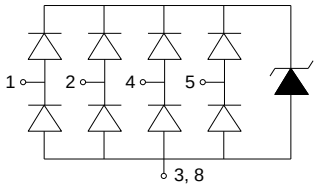
Pin	Name	Description	Outline	Circuit Diagram
1,2,4,5	IO	Connect to IO		
3,8	GND	Connect to GND		
Others	NC	No Connection		

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}		5	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±15	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±15	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

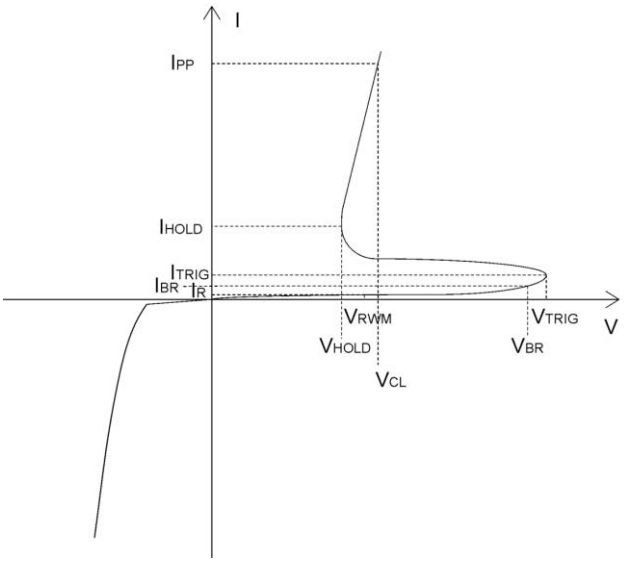
6.2. Electrical Characteristics

At TA = 25˚C unless otherwise noted

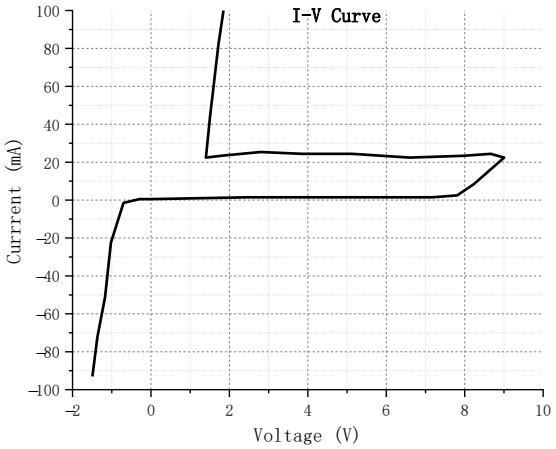
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			3.3	5.0	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA，IO-GND	5.5	7.6		V
Reverse Breakdown Voltage	V_{BR}	IT=1mA，IO-IO	6.0	8.1		V
Reverse Leakage Current	I_R	V_{RWM}=3.3V			100	nA
Clamping Voltage	V_{CL}	I_{PP}=3.0A; tp=8/20us，IO-GND		2.3		V
Clamping Voltage	V_{CL}	I_{PP}=5.0A; tp=8/20us，IO-GND		3.3		V
Junction Capacitance	C_J	VR=1.5V; f=1MHz；IO-GND		0.22	0.25	pF
		VR=0V; f=1MHz；IO-IO		0.10	0.15	

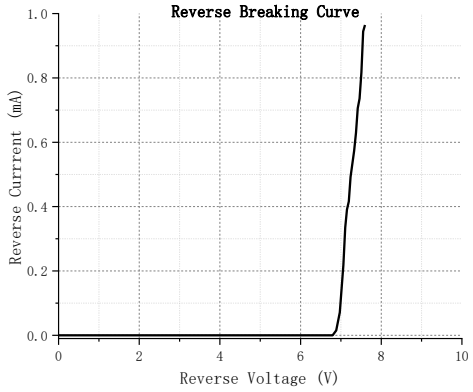
Table-4 Electrical Characteristics

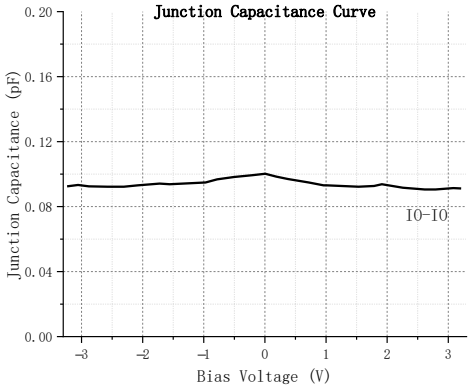
Symbol	Parameters
V_{RWM}	Reverse stand-off voltage
I_R	Reverse leakage current
V_{BR}	Reverse breakdown voltage
I_{BR}	Reverse breakdown current
V_{CL}	Clamping voltage
V_{TRIG}	Reverse trigger voltage
I_{TRIG}	Reverse trigger current
V_{HOLD}	Reverse holding voltage
I_{HOLD}	Reverse holding current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

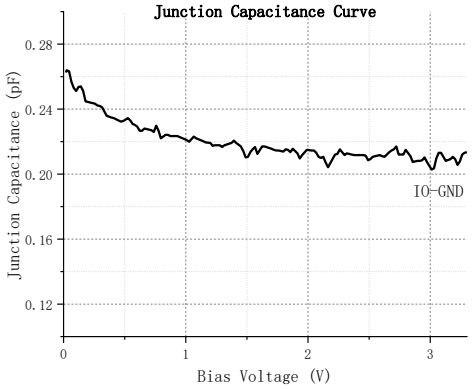


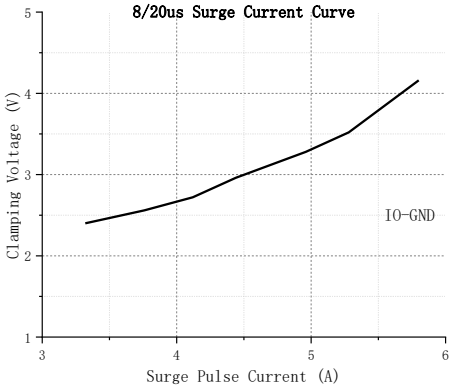
7. Typical Characteristic

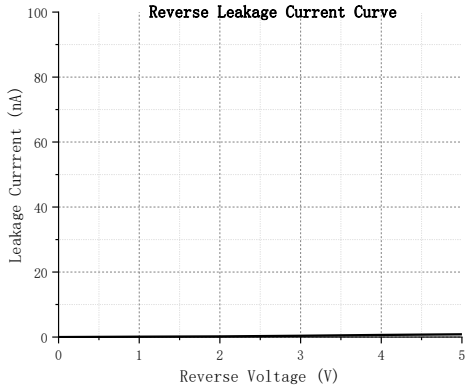


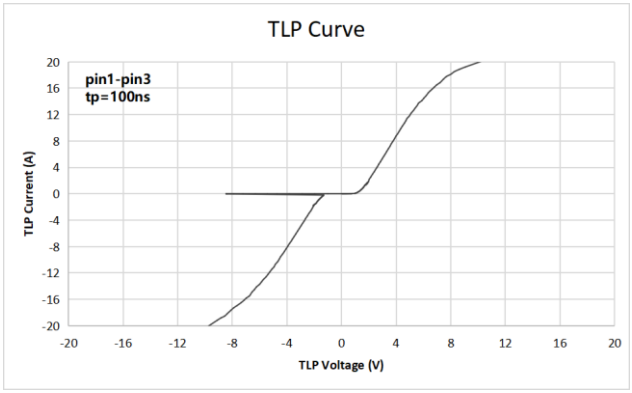


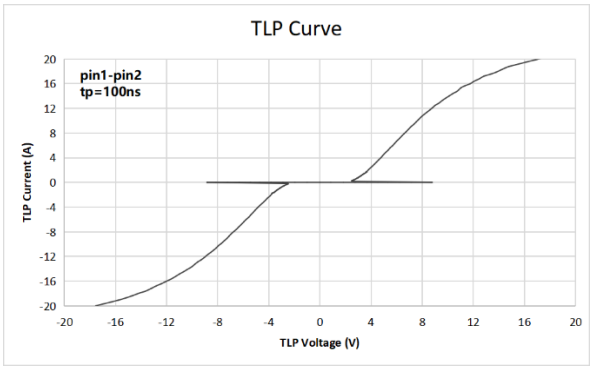




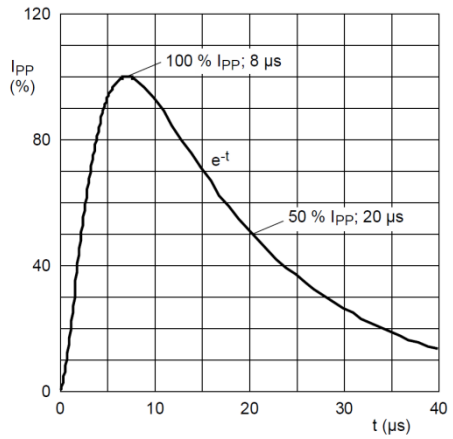
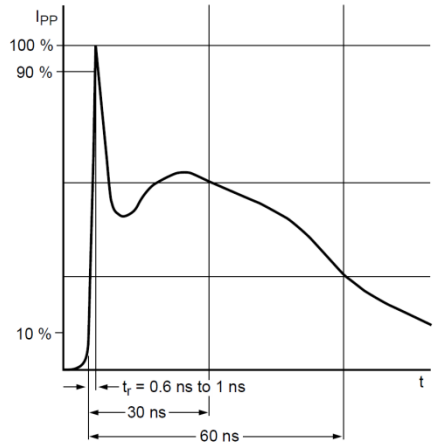






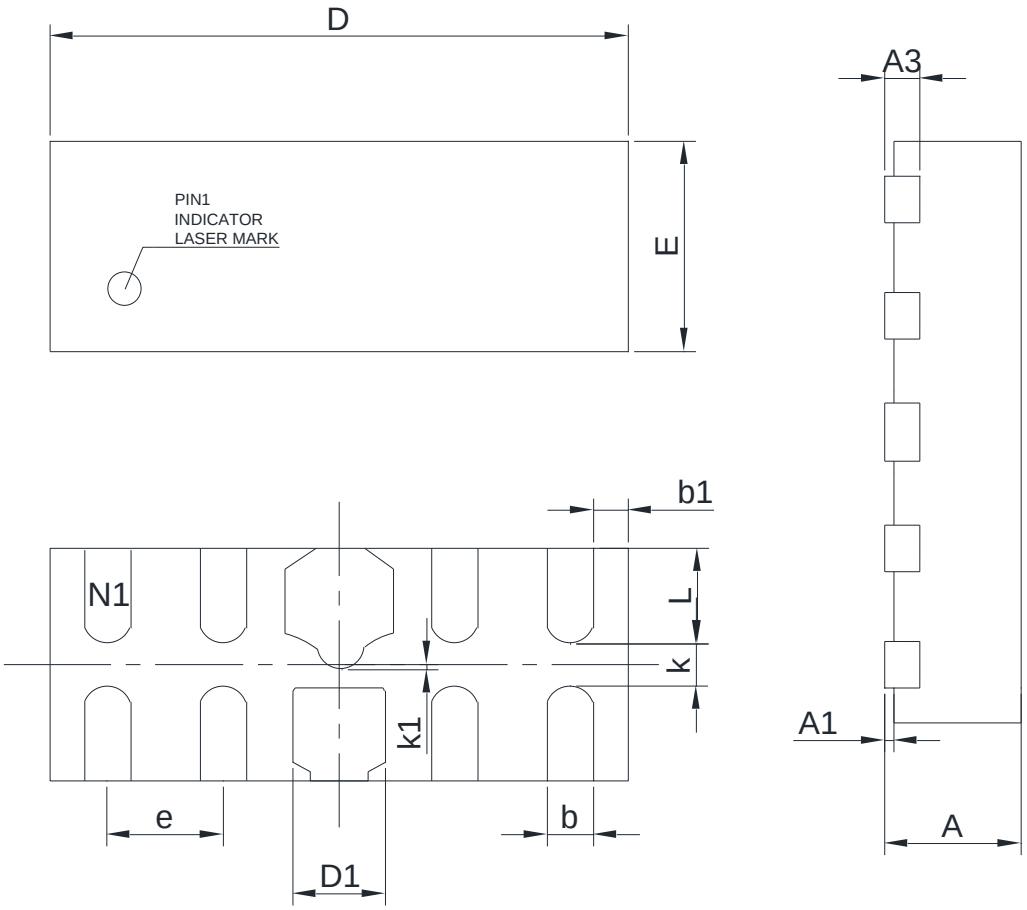


Measurement Wave According to IEC Standard

	
8/20 µs pulse waveform according to IEC 61000-4-5	ESD pulse waveform according to IEC 61000-4-2

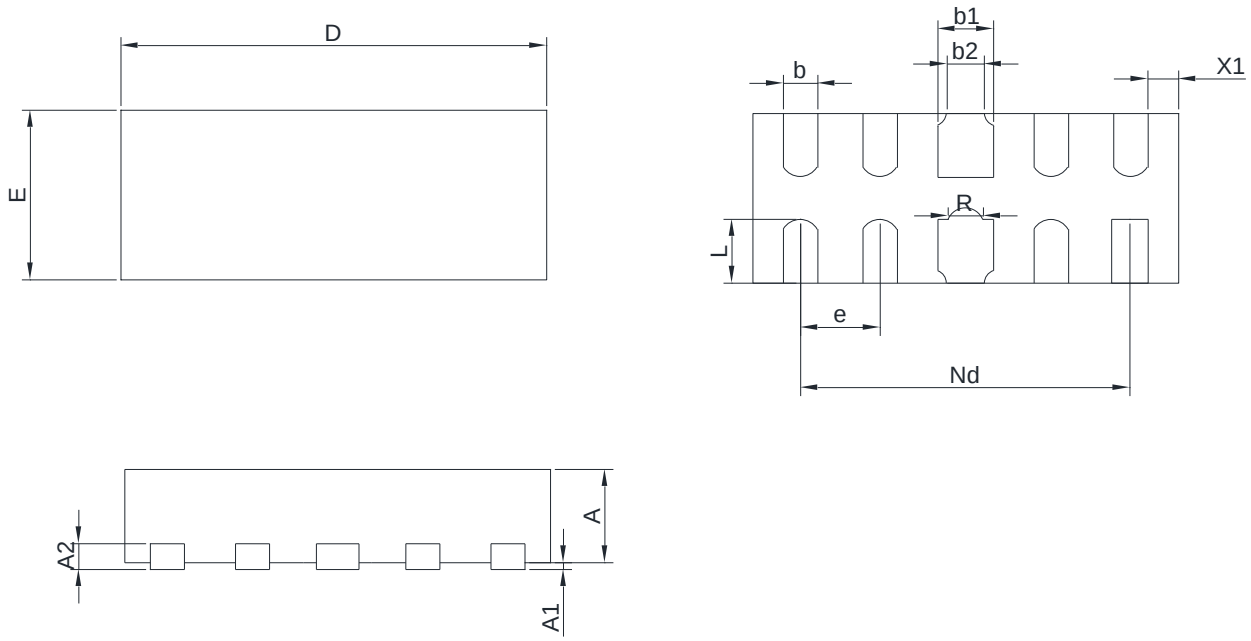
8. Dimension (DFN2510-10L)

POD A(C)



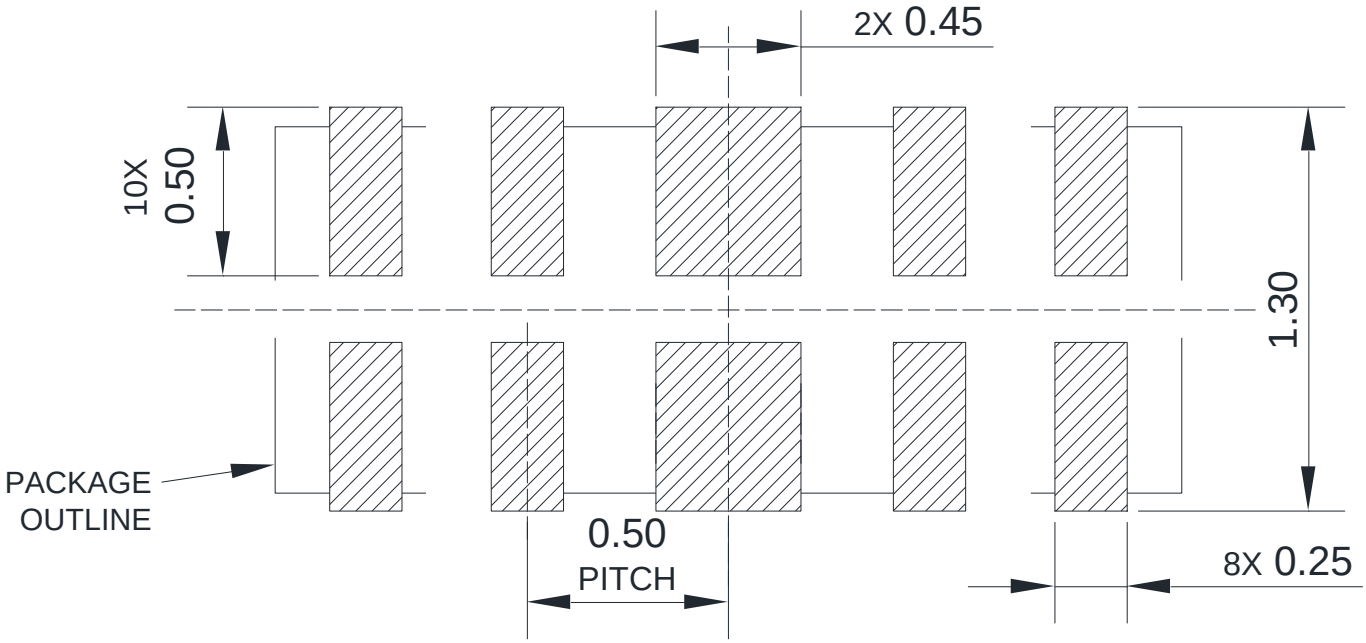
Dimensions in Millimeter							
Symbol	Min.	Nom.	Max.	Symbol	Min.	Nom.	Max.
A	0.450	0.500	0.550	D	2.450	2.500	2.550
A1	0.000	0.025	0.050	E	0.950	1.000	1.050
A3	0.110 REF			e	0.500 TYP		
b	0.180	0.220	0.260	k1	0.060	0.080	0.100
b1	0.100	0.150	0.200	L	0.350	0.400	0.450
D1	0.350	0.400	0.450	K	0.210	0.220	0.230

POD B(A)



Dimensions in Millimeter(mm)					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	0.50	0.60	b2	0.20REF	
A1	0.00	0.05	D	2.45	2.55
A2	0.15REF		E	0.95	1.05
b	0.15	0.25	L	0.33	0.43
b1	0.35	0.45	e	0.50BSC	
Nd	2.00BSC		X1	0.22	0.28

9. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

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