AOZ8850ADI

Single Channel Unidirectional TVS

General Description

The AOZ8850ADI is a single channel transient voltage suppressor designed to protect high speed data lines and voltage sensitive electronics from high transient conditions and ESD.

This device incorporates one unidirectional TVS diode in an ultra-small 0201 footprint package. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (±15 kV air, ±8 kV contact discharge).

The AOZ8850ADI comes in an RoHS compliant package and is rated over a -40°C to +125°C ambient temperature range.

The ultra-small 0.6 mm x 0.3 mm 0201 footprint package makes the AOZ8850ADI ideal for applications where PCB space is a premium. The small size and high ESD protection makes it ideal for protecting voltage sensitive electronics from high transient conditions and ESD.

Features

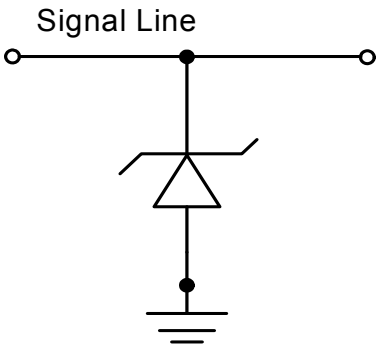
- IEC61000-4-2 (ESD) immunity:
  - Air discharge: ±15 kV
  - Contact discharge: ±8 kV
- IEC61000-4-5 (Surge 8/20 µs)
- Human Body Model (HBM): ±8 kV
- Bidirectional TVS
- Low capacitance: 0.5 pF
- Low clamping voltage
- Low operating voltage: 3.3, 5 V

Applications

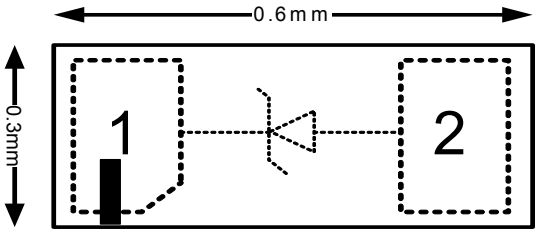
- Mobile phone
- Notebook computers
- Portable devices

Green Product

Typical Application



Pin Configuration



(Top View)

Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8850ADI-03	-40 °C to +125 °C	DFN0.6 x 0.3_2L	Green Product
AOZ8850ADI-05			

AOS Green Products use reduced levels of Halogens, and are also RoHS compliant.
Please visit www.aosmd.com/media/AOSGreenPolicy.pdf for additional information.

Absolute Maximum Ratings

Exceeding the Absolute Maximum Ratings may damage the device.

Parameter	Rating	
	AOZ8850ADI-03	AOZ8850ADI-05
Pin 1 to Pin 2	3.3 V	5 V
Peak Pulse Current (I_{PP}), t_P = 8/20µs	4 A	4 A
Peak Pulse Power (P_{PP}), t_P = 8/20µs	18 W	18 W
Storage Temperature (T_S)	-65°C to +150°C	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact(1)	±20 kV	±20 kV
ESD Rating per IEC61000-4-2, Air(1)	±25 kV	±25 kV
ESD Rating per Human Body Model(2)	±8 kV	±8 kV

Notes:

1. IEC 61000-4-2 discharge with $C_{Discharge}$ = 150 pF, $R_{Discharge}$ = 330 Ω.
2. Human Body Discharge per MIL-STD-883, Method 3015 $C_{Discharge}$ = 100 pF, $R_{Discharge}$ = 1.5 kΩ.

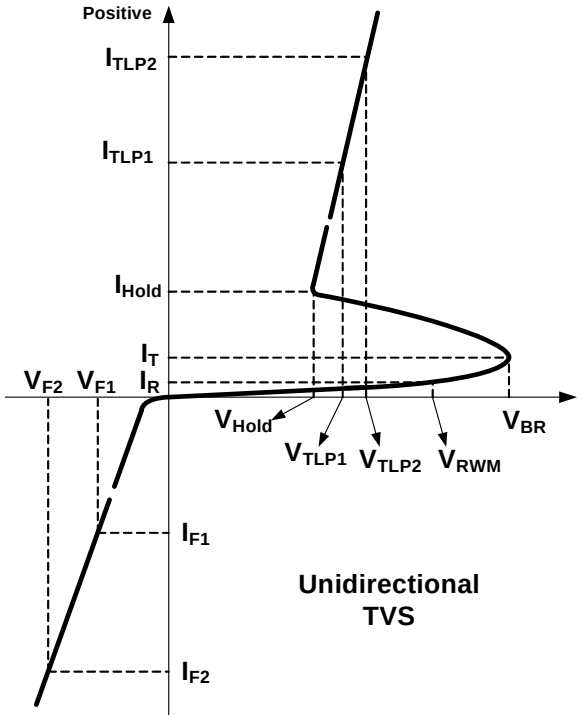
Maximum Operating Conditions

The device is not guaranteed to operate beyond the Maximum Operating Conditions.

Parameter	Rating
Junction Temperature (T_J)	-40°C to +125°C

Electrical Characteristics

T_A = 25°C unless otherwise specified.



AOZ8851ADI-05

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage				5	V
V_{BR}	Reverse Breakdown Voltage	I_T = 100µA	6	9.5	12	V
I_R	Reverse Leakage Current	Max. V_{RWM}		1	50	nA
V_F	Forward Voltage	I_F=15mA		0.85		
V_{HOLD}	Holding Voltage of Snapback(3)	I_T=15mA	0.9			
V_{CL}	Clamping Voltage(3,4) (100ns Transmission Line Pulse)	I_{TLP}=1A		1.2	2.0	V
		I_{TLP}=-1A		-2	-3.5	
		I_{TLP}=16A		5.5	6.5	
		I_{TLP}=-16A		-11	-13	
	Clamping Voltage(3) (IEC61000-4-5 Surge 8/20µs)	I_{PP}=1A		2	3	
		I_{PP}=-1A		-3	-4	
		I_{PP}=4A		3.7	4.7	
		I_{PP}=-4A		-9	-11	
R_{DNY}	Dynamic Resistance(3,4)	I_{TLP}=4 to 16A		0.28		Ω
		I_{TLP}=-4 to -16A		0.35		
C_J	Junction Capacitance	$V_{I/O}$=0V, f=1MHz		0.5	0.65	pF

AOZ8851ADI-03

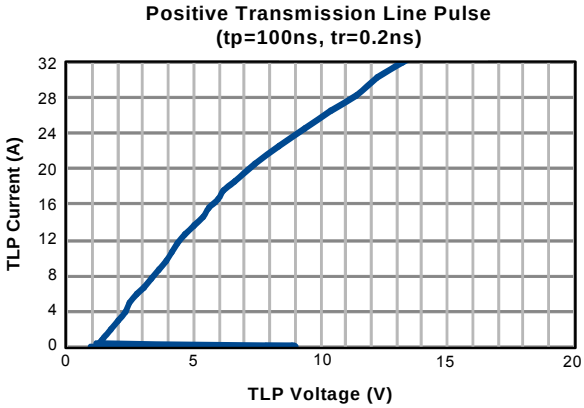
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 100µA	5	9.5	12	V
I_R	Reverse Leakage Current	Max. V_{RWM}		1	50	nA
V_F	Forward Voltage	I_F=15mA		0.85		
V_{HOLD}	Holding Voltage of Snapback(3)	I_T=15mA	0.9			
V_{CL}	Clamping Voltage(3,4) (100ns Transmission Line Pulse)	I_{TLP}=1A		1.2	2.0	V
		I_{TLP}=-1A		-2	-3.5	
		I_{TLP}=16A		5.5	6.5	
		I_{TLP}=-16A		-11	-13	
	Clamping Voltage(3) (IEC61000-4-5 Surge 8/20µs)	I_{PP}=1A		2	3	
		I_{PP}=-1A		-3	-4	
		I_{PP}=4A		3.7	4.7	
		I_{PP}=-4A		-9	-11	
R_{DNY}	Dynamic Resistance(3,4)	I_{TLP}=4 to 16A		0.28		Ω
		I_{TLP}=-4 to -16A		0.35		
C_J	Junction Capacitance	$V_{I/O}$=0V, f=1MHz		0.5	0.65	pF

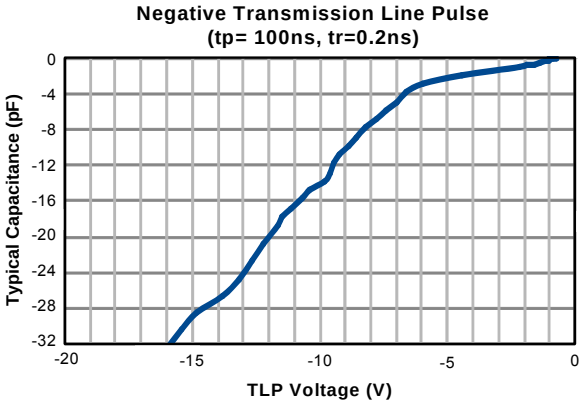
Notes:

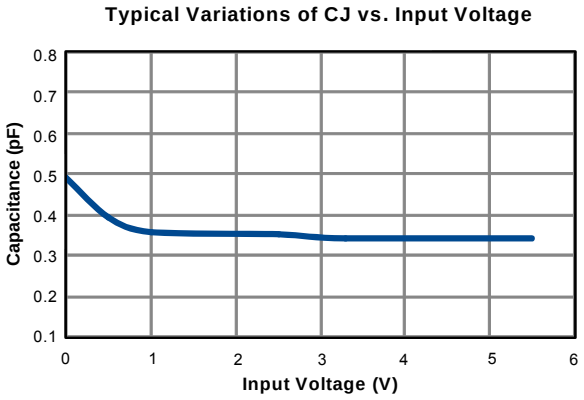
3. These specifications are guaranteed by design and characterization.

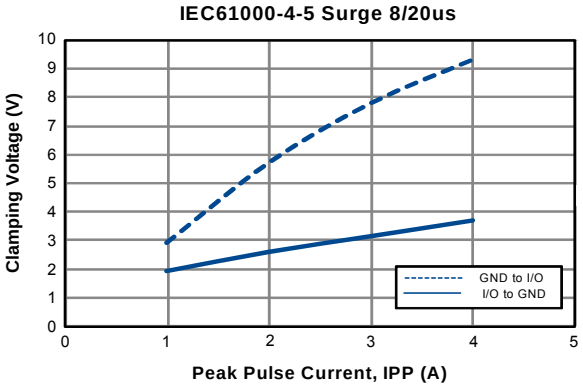
4. Measurements performed using a 100ns Transmission Line Pulse (TLP) system.

Typical Performance Characteristics

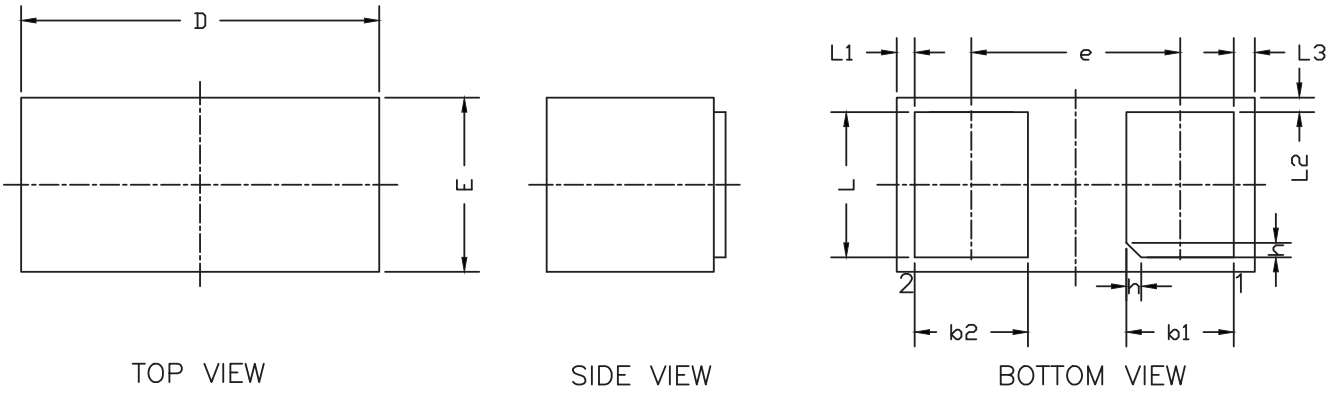




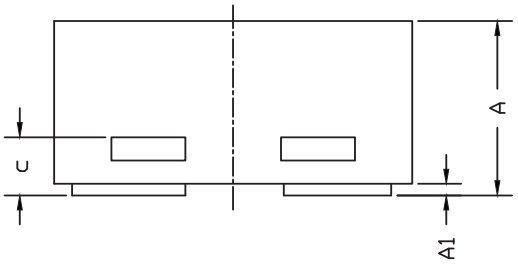




Package Dimensions, DFN0.6x0.3-2L



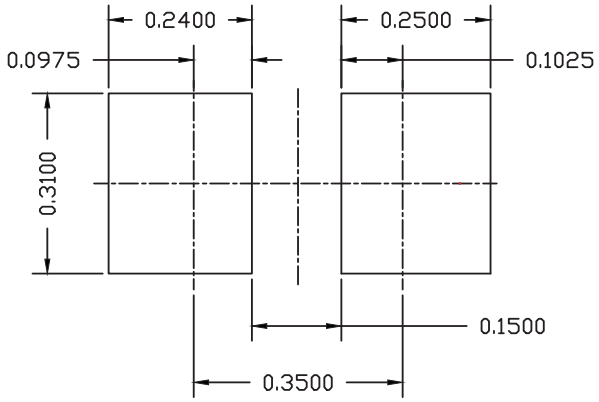
TOP VIEW SIDE VIEW BOTTOM VIEW



SIDE VIEW

SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.28	0.30	0.32	0.011	0.012	0.013
A1	0.00	0.02	0.05	0.000	0.001	0.002
b1	0.13	0.18	0.23	0.005	0.007	0.009
b2	0.14	0.19	0.24	0.006	0.007	0.009
c	0.05	0.10	0.15	0.002	0.004	0.006
D	0.55	0.60	0.65	0.022	0.024	0.026
E	0.25	0.30	0.35	0.010	0.012	0.014
e		0.35 BSC			0.014 BSC	
h	0.00	0.05	0.10	0.000	0.002	0.004
L	0.20	0.25	0.30	0.008	0.010	0.012
L1		0.030 BSC			0.001 BSC	
L2		0.025 BSC			0.001 BSC	
L3		0.035 BSC			0.001 BSC	

RECOMMEND LAND PATTERN

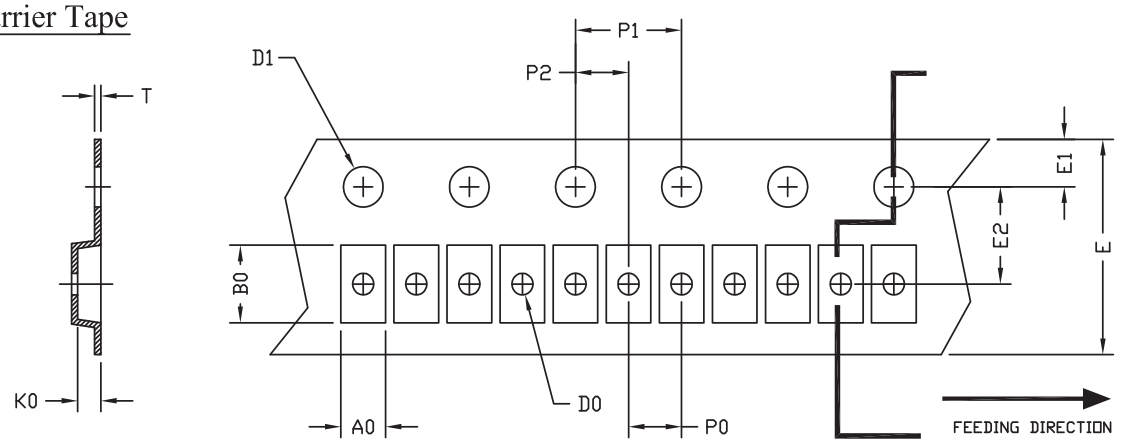


unit:mm

NOTE
1. ALL DIMENSIONS ARE IN MILLMETERS.
2. DIMENSIONS ARE INCLUSIVE OF PLATING.
3. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
   MOLD FLASH AT THE NON-LEAD SIDES SHOULD BE LESS THAN 6MIL EACH.
4. CONTROLLING DIMENSION IS MILLIMETER.
   CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.
5. PADDLE EXPOSED ON BOTTOM.

Tape and Reel Dimensions, DFN0.6x0.3-2L

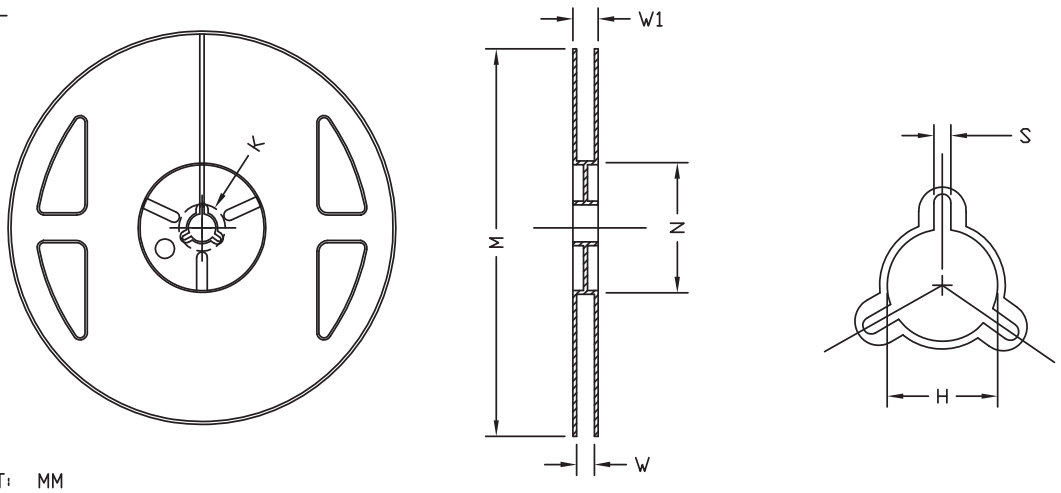
Carrier Tape



UNIT: MM

PACKAGE	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
DFN0.6x0.3 (8 mm)	0.42 ±0.05	0.72 ±0.05	0.57 ±0.15	0.20 ±0.05	1.50 $^{+0.1}_{-0.0}$	8.00 ±0.10	1.75 ±0.10	3.50 ±0.03	2.00 ±0.05	4.00 ±0.05	2.00 ±0.05	0.20 ±0.05

Reel

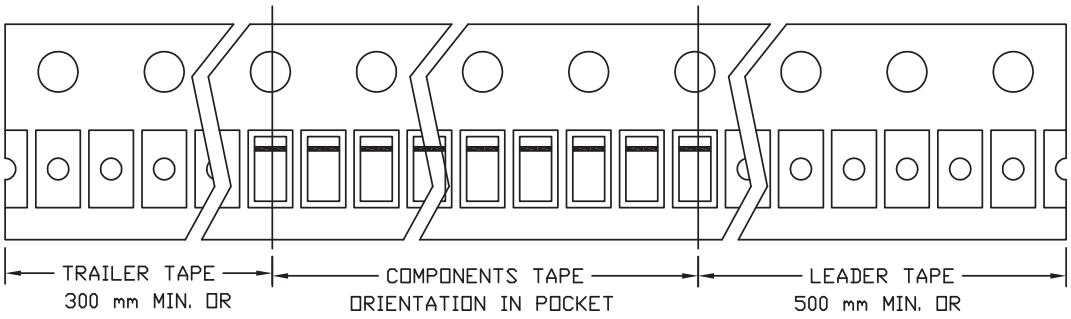


UNIT: MM

TAPE SIZE	REEL SIZE	M	N	W	W1	H	K	S
8 mm	Ø180	Ø180 $^{+0}_{-3}$	Ø60 $^{+1}_{-0}$	9.0 ±0.3	11.4 ±1.0	Ø13.0 ±0.2	Ø21.0 ±0.5	2.0 ±0.5

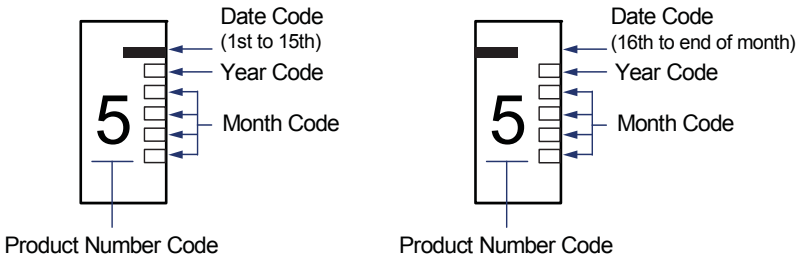
Tape

Leader / Trailer & Orientation



Part Marking

AOZ8850ADI
(DFN0.6x0.3)



Part Number	Marking Code
AOZ8850ADI-03	5
AOZ8850ADI-05	6

单击下面可查看定价，库存，交付和生命周期等信息

>>AOS(万代)