AOZ8350DI-04

1-Channel Unidirectional High Surge TVS

General Description

The AOZ8350DI-04 is a 1-channel unidirectional high surge transient voltage suppressor designed to protect power rails such as battery and Vbus from damaging ESD or surge events.

This device consists of a unidirectional TVS diode in a single package. During transient events, the diode directs the transient to either the positive side of the power supply line or to ground.

The AOZ8350DI-04 provides a typical line-to-ground capacitance of 1200 pF and low clamping voltage making it ideally suited for power rail protection in mobile and computing devices.

The AOZ8350DI-04 comes in a RoHS compliant and Halogen Free 2.0 mm x 1.25 mm x 0.5 mm package and is rated for -40°C to +125°C junction temperature range.

Features

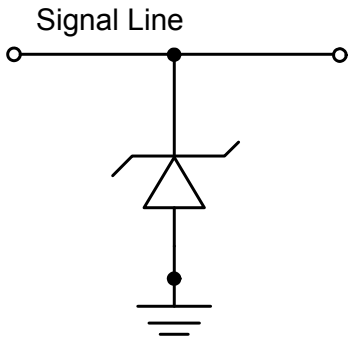
- ESD protection for high-speed data lines:
  - IEC 61000-4-2 (ESD immunity):
    - Air discharge: ±30 kV
    - Contact discharge: ±30 kV
  - IEC61000-4-5 (Lightning, 8/20 µs): 160 A
- Capacitance between I/O to GND: 1200 pF
- Low clamping voltage
- Reverse Working Voltage: 4.8 V

Applications

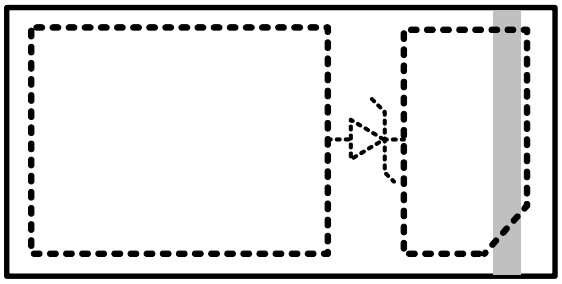
- Battery
- Mobile devices
- Notebook computers

Green Product

Typical Application



Pin Configuration



DFN2.0x1.25_2L

Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8350DI-04	-40°C to +125°C	DFN2x1.25-2L	Green Product

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
Storage Temperature (T_S)	-65°C to +150°C
ESD Rating per IEC61000-4-2, contact(1)	±30kV
ESD Rating per IEC61000-4-2, air(1)	±30kV
8/20µs Surge IEC61000-4-5	±160A

Notes:

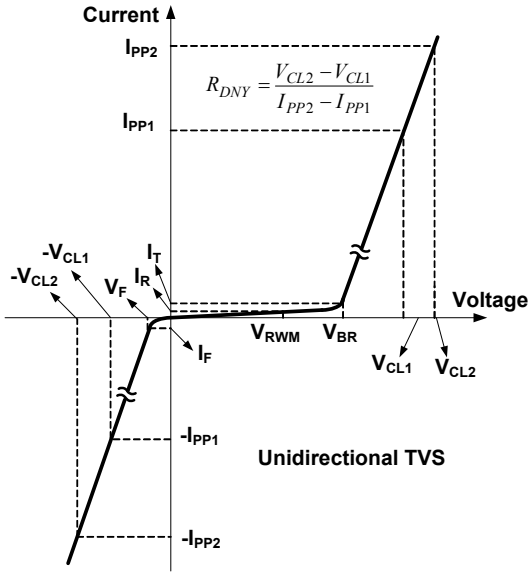
1. IEC 61000-4-2 discharge with $C_{Discharge}$ = 150pF, $R_{Discharge}$ = 330Ω.
2. Human Body Discharge per MIL-STD-883, Method 3015 $C_{Discharge}$ = 100pF, $R_{Discharge}$ = 1.5kΩ.

Maximum Operating Ratings

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

Electrical Characteristics

T_A = 25°C unless otherwise specified.



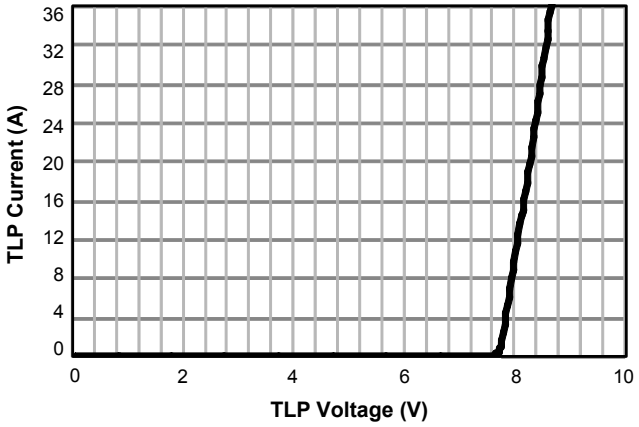
Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage				4.8	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	6	7	8.5	V
I_R	Reverse Leakage Current	V_T=Max. V_{RWM}		0.1	0.5	µA
V_F	Forward Voltage	I_F = 15mA		0.85		V
V_{CL}	Clamping Voltage(3) IEC61000-4-5 Surge 8/20µs	I_{PP} = 1A		7.5	8.5	V
		I_{PP} = 100A		12	13.5	V
		I_{PP} = 160A		14	15.5	V
R_{DNY}	Dynamic Resistance(3)	I_{PP} = 1A to 160A		0.04		Ω
C_J	Junction Capacitance	$V_{I/O}$ = 0V, f = 1MHz,		1200		pF

Note:

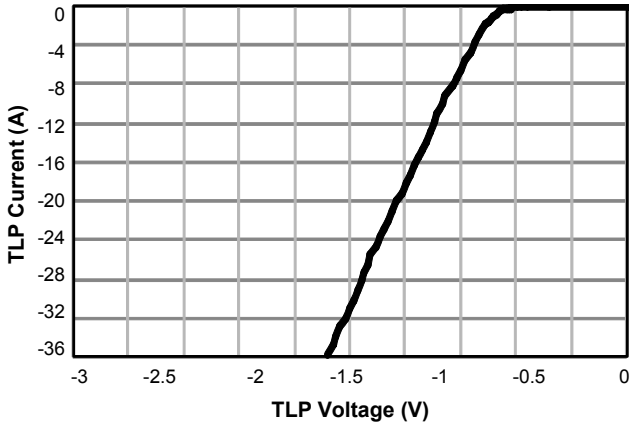
3. These specifications are guaranteed by design and characterization.

Typical Characteristics

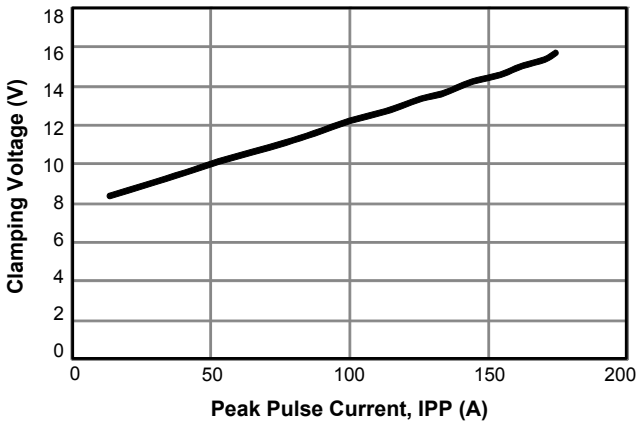
Positive Transmission Line Pulse (tp=100ns, tr=0.2ns)



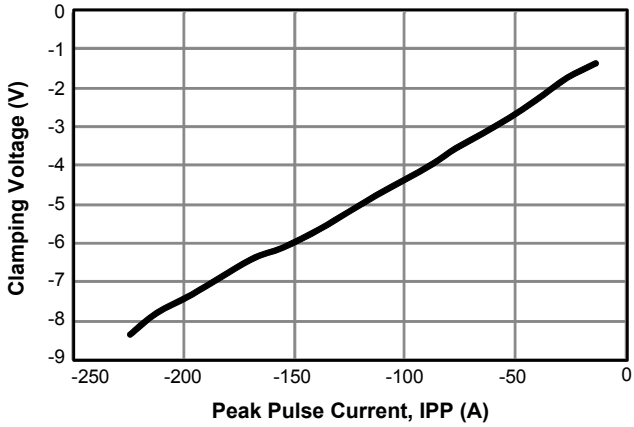
Negative Transmission Line Pulse (tp=100ns, tr=0.2ns)



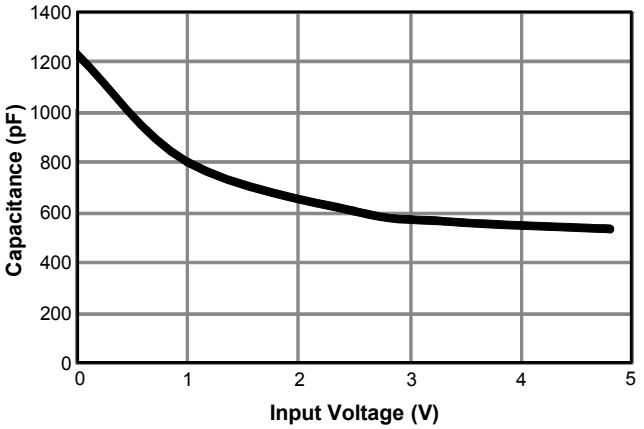
Positive IEC61000-4-5 Surge 8/20us



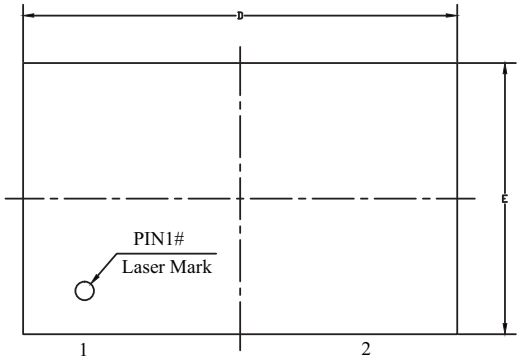
Negative IEC61000-4-5 Surge 8/20us



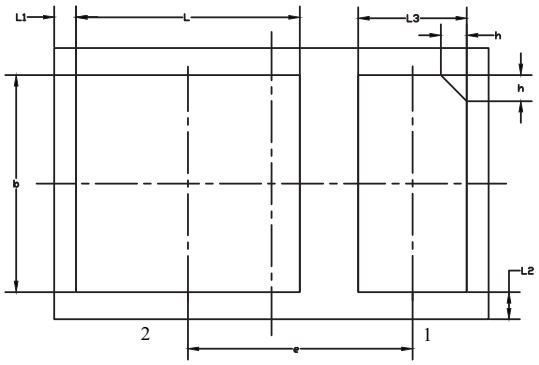
Typical Variations of CJ vs. Input Voltage



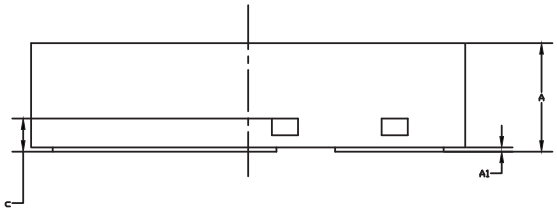
Package Dimensions, DFN2.0x1.25-2L, EP2_S



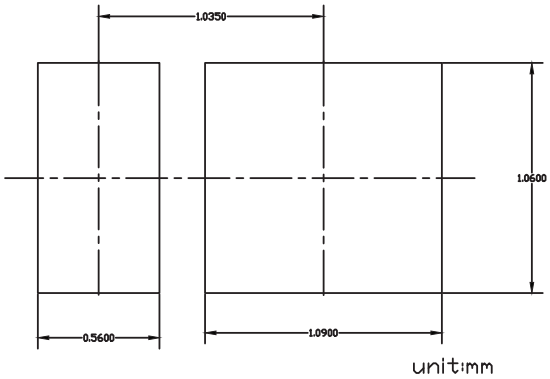
Top View



Bottom View



Side View



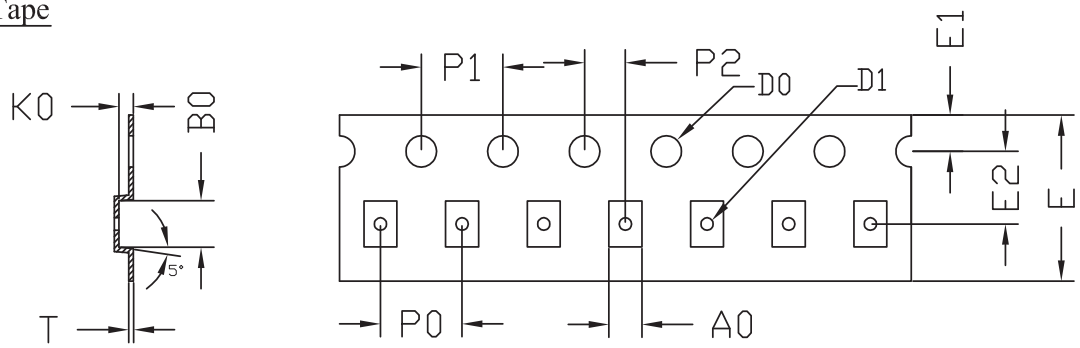
RECOMMEND LAND PATTERN

SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.450	0.500	0.550	0.0177	0.0197	0.0217
A1	0.000	0.020	0.050	0.0000	0.0008	0.0020
b	0.950	1.000	1.050	0.0374	0.0394	0.0413
c	0.152REF			0.0060REF		
D	1.900	2.000	2.100	0.0748	0.0787	0.0827
e	1.035BSC			0.0407BSC		
E	1.200	1.250	1.300	0.0472	0.0492	0.0512
L	0.980	1.030	1.080	0.0386	0.0406	0.0425
L1	0.100REF			0.0039REF		
L2	0.130REF			0.0051REF		
L3	0.450	0.500	0.550	0.0177	0.0197	0.0217
h	0.120REF			0.0047REF		

NOTE
1. ALL DIMENSIONS ARE IN MILLIMETERS.
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, DFN2.0x1.25-2L, EP2_S

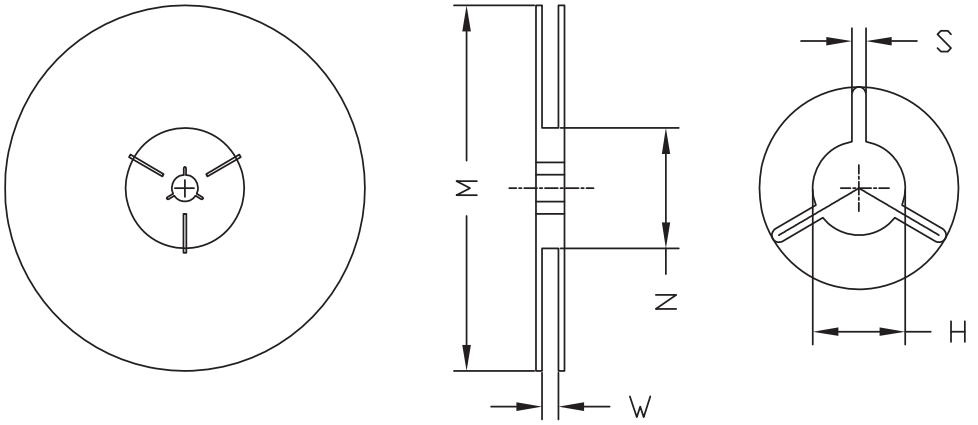
Carrier Tape



UNIT: MM

PACKAGE	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
DFN2.0x1.25	1.61 ±0.05	2.21 ±0.05	0.70 ±0.05	Ø1.50 +0.10 −0.00	Ø0.60 ±0.05	8.00 +0.3 −0.1	1.75 ±0.1	3.50 ±0.05	4.00 ±0.1	4.0 ±0.10	2.0 ±0.05	0.23 ±0.02

REEL



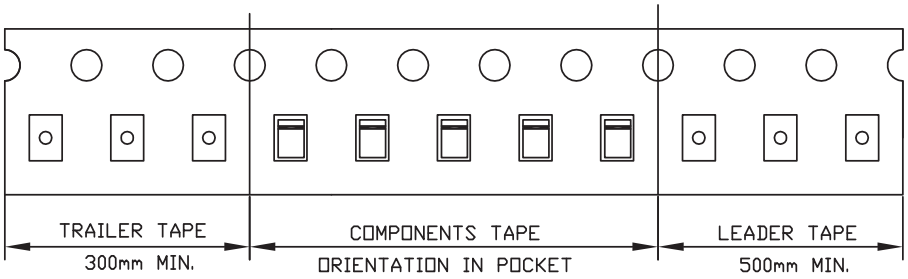
UNIT: MM

TAPE SIZE	REEL SIZE	M	N	W	H	S
8	Ø180	Ø180.0 ±1.0	Ø54.4 ±1.0	8.60 +1.00 −0.00	Ø13.0 +0.5 −0.2	2.00 +0.5 −0.0

TAPE

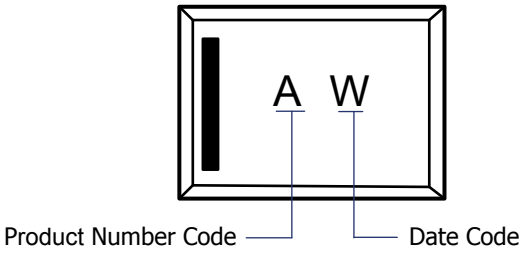
Leader / Trailer & Orientation

Unit Per Reel: 3000pcs



Part Marking

AOZ8350DI-04
(DFN 2.0x1.25-2L)



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