

## General Description

The AOZ8236 is a transient voltage suppressor diode array designed to protect data lines from high transient conditions and ESD. This state-of-the-art device utilizes AOS leading edge Trench Vertical Structure [TVS]<sup>2</sup>™ technology for superior clamping performance.

This device incorporates five TVS diodes in a single package. During transient conditions, the TVS diodes direct the transient to ground. They may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (±15kV air, ±8kV contact discharge).

The AOZ8236 is RoHS compliant. The DFN-6 package is rated over a -40°C to +85°C ambient temperature range.

The very small DFN-6 1.6 x 1.6 x 0.55mm package makes it ideal for applications where PCB space is a premium. The small size and high ESD protection makes it ideal for protecting high speed video and data communication interfaces.

## Features

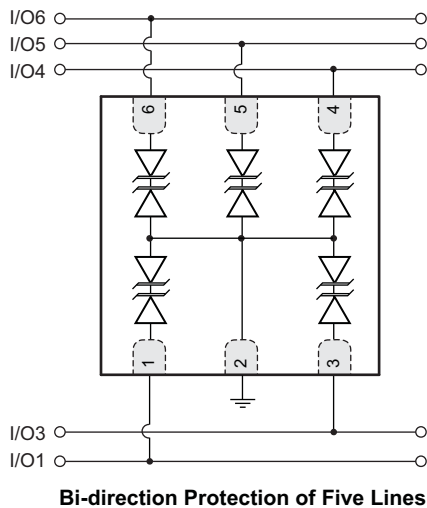
- ESD protection for high-speed data lines:
  - Exceeds: IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
  - Human Body Model (HBM) ±30kV
- Trench Vertical Structure [TVS]<sup>2</sup>™ based technology used to achieve excellent ESD clamping performance
- Low insertion loss
- Protects five bi-directional I/O lines
- Low clamping voltage
- Low operating voltage: 5.0V
- Green product, Pb-free

## Applications

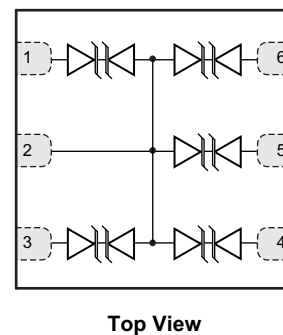
- Portable handheld devices
- Keypads, data lines
- Notebook computers
- Digital Cameras
- Portable GPS
- MP3 players



## Typical Applications



## Pin Configuration



## Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8236DI-05	-40°C to +85°C	DFN 1.6x1.6_6L	Green Product RoHS Compliant



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant.

Please visit [www.aosmd.com/media/AOSGreenPolicy.pdf](http://www.aosmd.com/media/AOSGreenPolicy.pdf) for additional information.

## Absolute Maximum Ratings

Exceeding the Absolute Maximum ratings may damage the device.

Parameter	Rating
Peak Pulse Current ( $I_{PP}$ ), $t_P = 8/20\mu s$	8A
Storage Temperature ( $T_S$ )	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact <sup>(1)</sup>	±30kV
ESD Rating per IEC61000-4-2, Air <sup>(1)</sup>	±30kV
ESD Rating per Human Body Model <sup>(2)</sup>	±30kV

### Notes:

1. IEC 61000-4-2 discharge with  $C_{Discharge} = 150pF$ ,  $R_{Discharge} = 330\Omega$ .

2. Human Body Discharge per MIL-STD-883, Method 3015  $C_{Discharge} = 100pF$ ,  $R_{Discharge} = 1.5k\Omega$ .

## Maximum Operating Ratings

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

## Electrical Characteristics

$T_A = 25^\circ C$  unless otherwise specified.

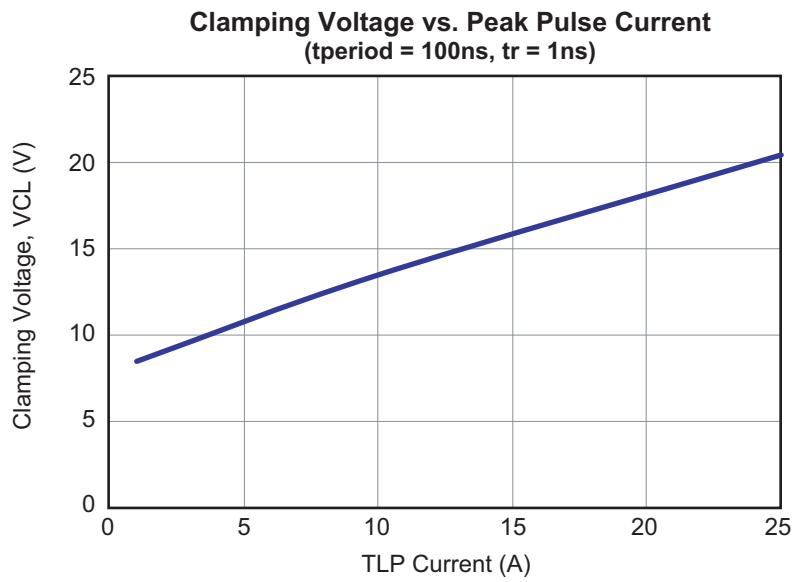
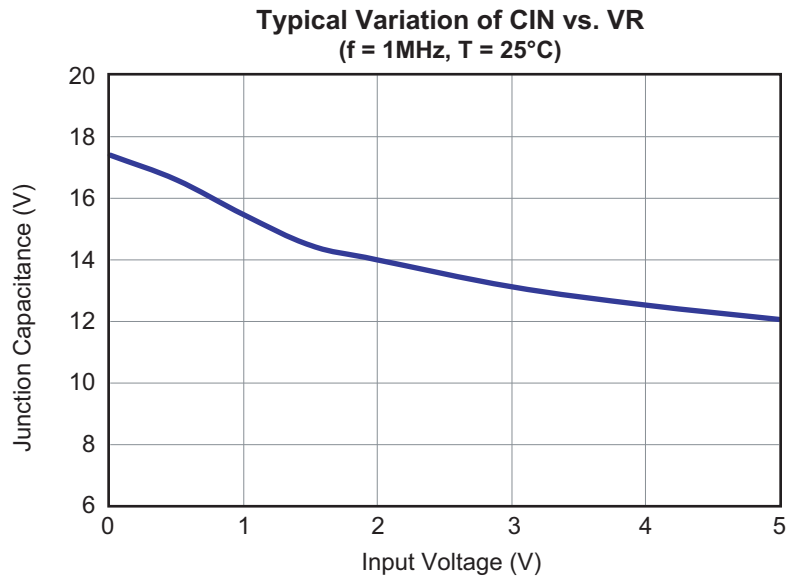
Symbol	Parameter	Diagram
$I_{PP}$	Maximum Reverse Peak Pulse Current	<p>The diagram shows a graph of current (I) versus voltage (V). The curve starts at a low current level for negative voltages, rises sharply at the breakdown voltage (V<sub>BR</sub>), and then levels off at a clamping voltage (V<sub>CL</sub>) for higher reverse voltages. Key points on the graph include V<sub>CL</sub>, V<sub>BR</sub>, V<sub>RWM</sub>, I<sub>R</sub>, and I<sub>PP</sub>.</p>
$V_{CL}$	Clamping Voltage @ $I_{PP}$ (IEC61000-4-5 8/20 $\mu s$ pulse)	
$V_{RWM}$	Working Peak Reverse Voltage	
$I_R$	Maximum Reverse Leakage Current	
$V_{BR}$	Breakdown Voltage	
$I_T$	Test Current	
$P_{pk}$	Peak Power Dissipation (IEC61000-4-5 8/20 $\mu s$ pulse)	
$C_J$	Capacitance @ $V_R = 0$ and $f = 1$ MHz	

Device	Device Marking	$V_{RWM}$ (V) Max.	$V_{BR}$ (V) Min.	$I_R$ ( $\mu A$ ) Max.	$I_{PP}$ (A)	$V_{CL}$ @ $I_{PP}$ 8/20 $\mu s$ <sup>(3)</sup>		$C_J$ (pF) Max.	
						Typ.	Max.	Typ.	Max.
AOZ8236DI-05	H	5	6	0.1	8	13.5	16	17.5	19

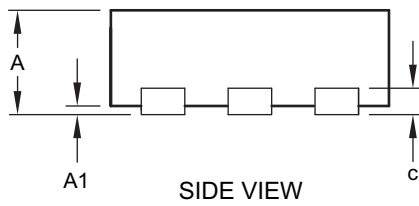
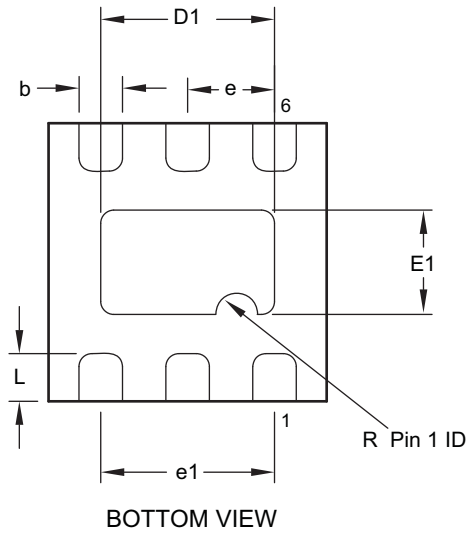
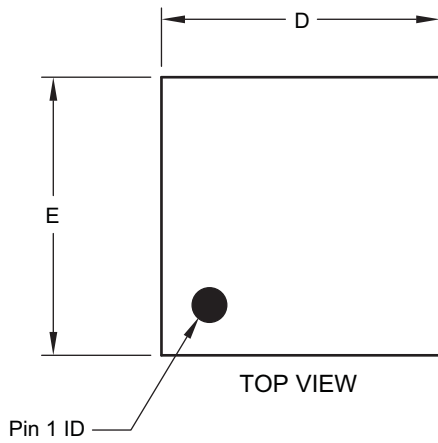
### Notes:

3. These specifications are guaranteed by design and characterization.

## Typical Performance Characteristics



Package Dimensions, DFN 1.6mm x 1.6mm



Dimensions in millimeters

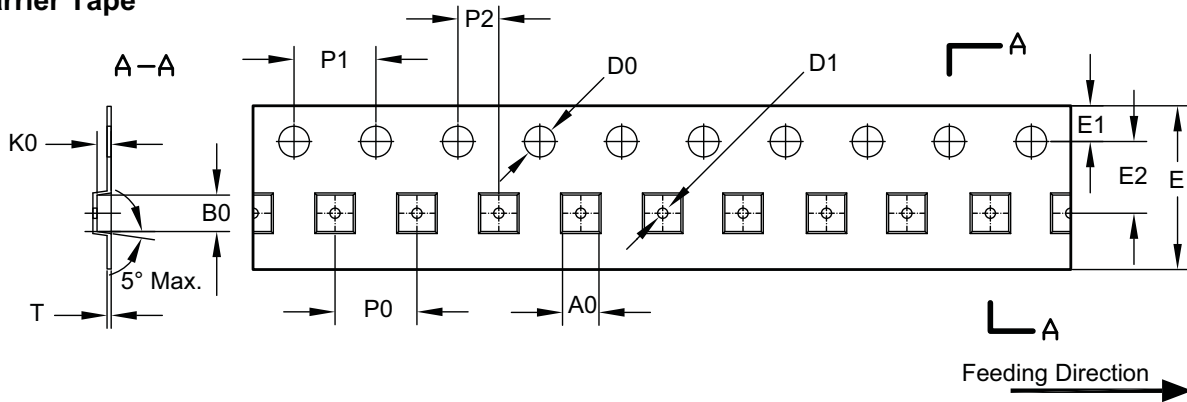
Symbols	Min.	Nom.	Max.
A	0.50	0.55	0.60
A1	0.00	0.02	0.05
b	0.22	0.25	0.28
c	0.152 REF.		
D	1.55	1.60	1.65
D1	0.95	1.00	1.05
E	1.55	1.60	1.65
E1	0.55	0.60	0.65
e	0.50 BSC		
e1	1.0 REF		
L	0.225	0.275	0.325
R	0.20		

Notes:

1. Dimensions and tolerancing conform to ASME Y14.5M-1994.
2. All dimensions are in millimeters.

### Tape and Reel Dimensions, DFN 1.6mm x 1.6mm

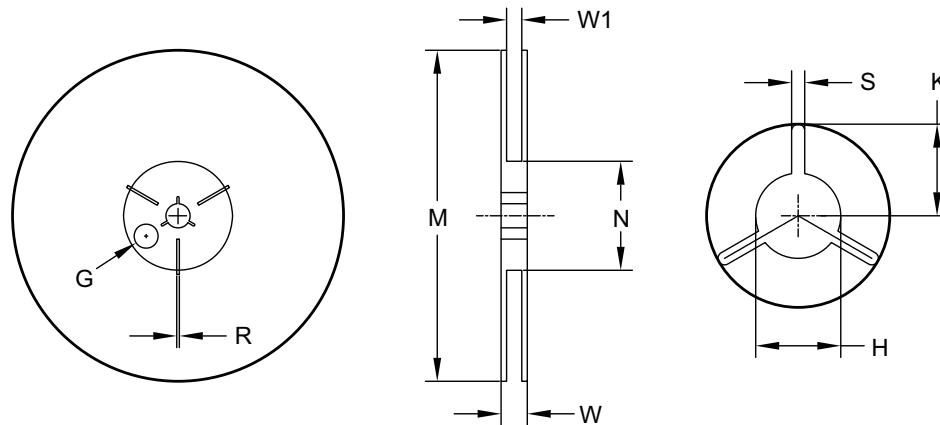
#### Carrier Tape



UNIT: mm

Package	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
DFN 1.6x1.6	1.78 ±0.05	1.78 ±0.05	0.69 ±0.05	∅1.50 ±0.10	∅0.50 ±0.05	8.00 +0.30 / -0.10	1.75 ±0.10	3.50 ±0.05	4.00 ±0.10	4.00 ±0.10	2.00 ±0.05	0.20 ±0.02

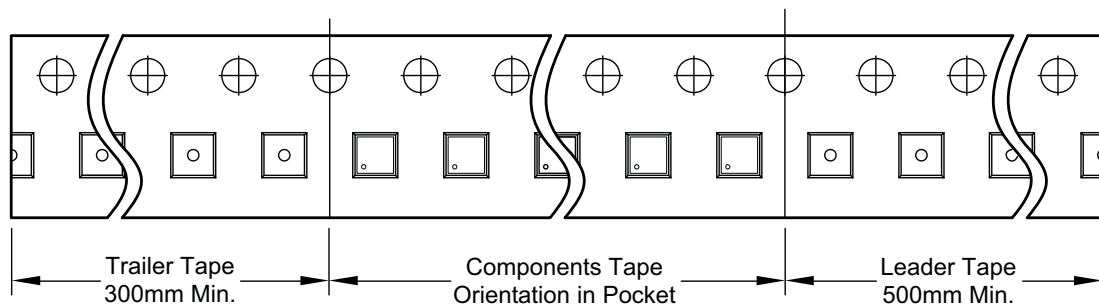
#### Reel



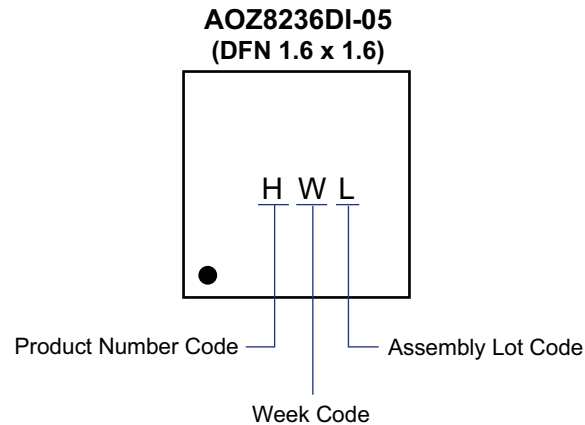
UNIT: mm

Tape Size	Reel Size	M	N	W	W1	H	S	K	E	R
8mm	∅178	∅178.0 ±1.0	∅60.0 ±1.0	11.80 ±0.5	9.0 ±0.5	∅13.0 +0.5 / -0.2	2.40 ±0.10	10.25 ±0.2	∅9.8	—

#### Leader / Trailer & Orientation



## Package Marking



### LEGAL DISCLAIMER

Alpha and Omega Semiconductor makes no representations or warranties with respect to the accuracy or completeness of the information provided herein and takes no liabilities for the consequences of use of such information or any product described herein. Alpha and Omega Semiconductor reserves the right to make changes to such information at any time without further notice. This document does not constitute the grant of any intellectual property rights or representation of non-infringement of any third party's intellectual property rights.

### LIFE SUPPORT POLICY

ALPHA AND OMEGA SEMICONDUCTOR PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.