

General Description

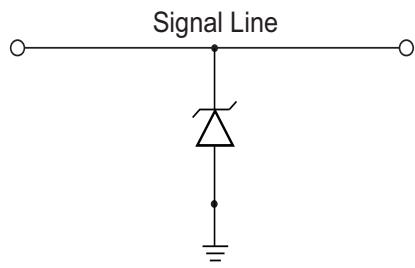
The AOZ8811 is a ultra-low capacitance one-line transient voltage suppressor diode designed to protect very high-speed data lines and voltage sensitive electronics from high transient conditions and ESD.

This device incorporates one TVS diode in an ultra-small DFN 1.0 x 0.6 package. During transient conditions, the ultra-low capacitance one-line TVS diode directs the transient to ground. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 ($\pm 15\text{kV}$ air, $\pm 15\text{kV}$ contact discharge).

The AOZ8811 comes in an RoHS compliant DFN package and is rated over a -40°C to $+85^\circ\text{C}$ ambient temperature range.

The ultra-small DFN 1.0 x 0.6 x 0.5mm package makes it 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.

Typical Application



Unidirection Protection of Single Line

Features

- ESD protection for high-speed data lines:
 - Exceeds: IEC 61000-4-2 (ESD) $\pm 15\text{V}$ (air), $\pm 15\text{kV}$ (contact)
 - Human Body Model (HBM) $\pm 15\text{kV}$
- Small package saves board space
- Ultra-low capacitance: 0.65pF
- Low clamping voltage
- Low operating voltage: 5V
- Green product

Applications

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



Pin Configuration



Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8811DI-05	-40°C to +85°C	DFN 1.0 x 0.6	RoHS Compliant 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
VP – VN	5V
Peak Pulse Current (I _{PP}), t _P = 8/20μs	2A
Storage Temperature (T _S)	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact ⁽¹⁾	±15kV
ESD Rating per IEC61000-4-2, Air ⁽¹⁾	±15kV
ESD Rating per Human Body Model ⁽²⁾	±15kV

Notes:

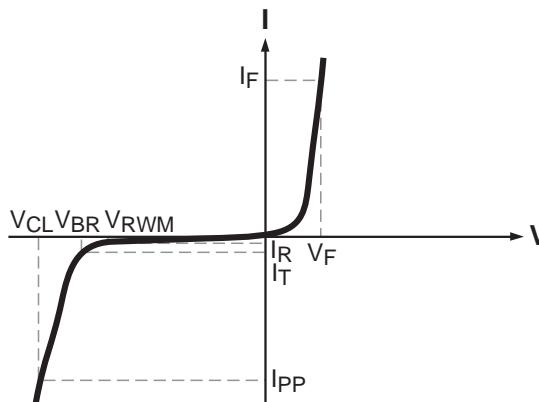
1. IEC 61000-4-2 discharge with C_{Discharge} = 150pF, R_{Discharge} = 330Ω.
2. Human Body Discharge per MIL-STD-883, Method 3015 C_{Discharge} = 100pF, R_{Discharge} = 1.5kΩ.

Maximum Operating Ratings

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

Electrical Characteristics

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

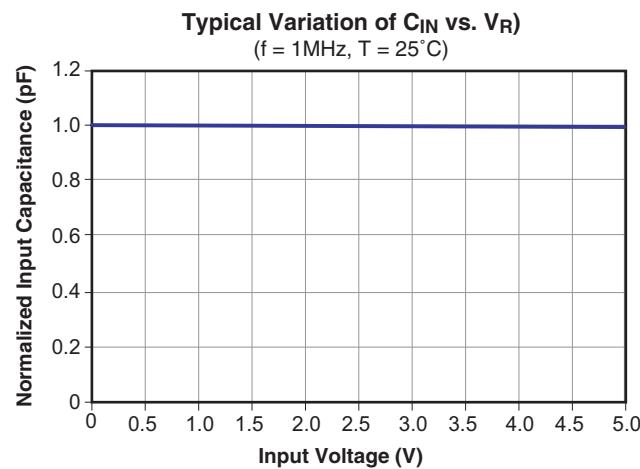
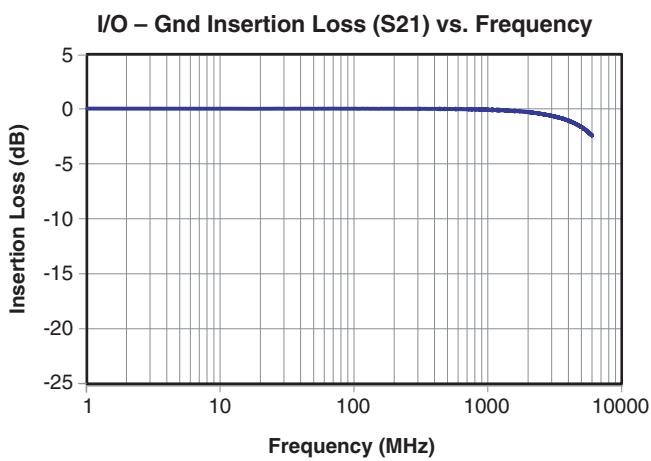
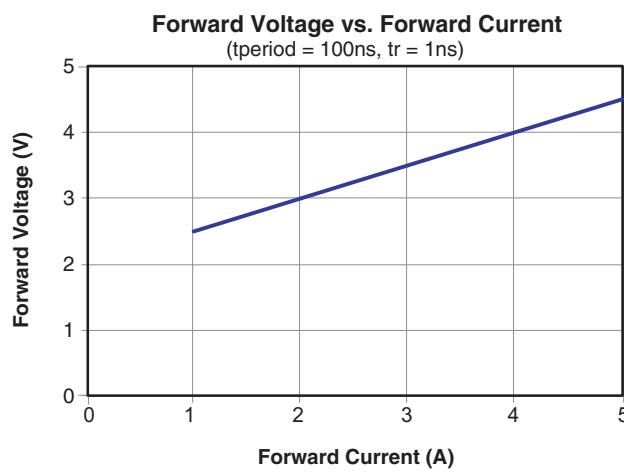
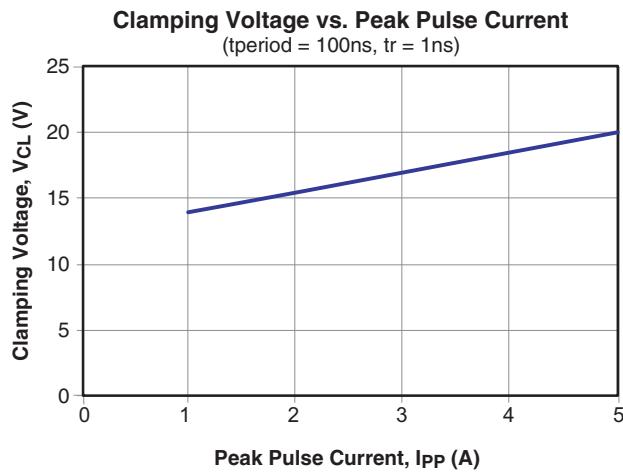
Symbol	Parameter	Diagram
I_{PP}	Maximum Reverse Peak Pulse Current	
V_{CL}	Clamping Voltage @ I_{PP}	
V_{RWM}	Working Peak Reverse Voltage	
I_R	Maximum Reverse Leakage Current	
V_{BR}	Breakdown Voltage	
I_T	Test Current	
I_F	Forward Current	
V_F	Forward Voltage	
P_{PK}	Peak Power Dissipation	
C_J	Capacitance @ $V_R = 0$ and $f = 1\text{MHz}$	

Electrical Characteristics

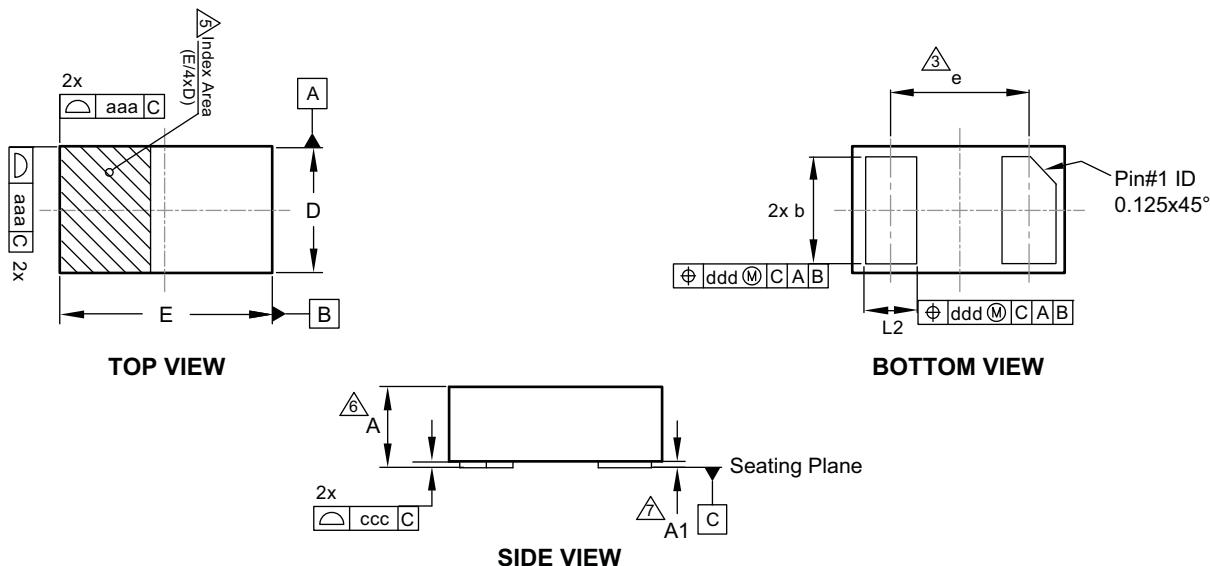
$T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.95\text{V}$ Max. @ $I_F = 15\text{mA}$ for all types

Device	Device Marking	V_{RWM} (V) Max.	V_{BR} (V) Max.	I_R (μA) Max.	V_F (V) Typ.	V_{CL} Max.			C_J (pF) Typ.	C_J (pF) Max.
						$I_{PP} = 1\text{A}$	$I_{PP} = 2\text{A}$	$I_{PP} = 5\text{A}$		
AOZ8811DI-05	C	5.0	6.0	1.0	0.75	14.00	15.50	20.00	0.65	0.75

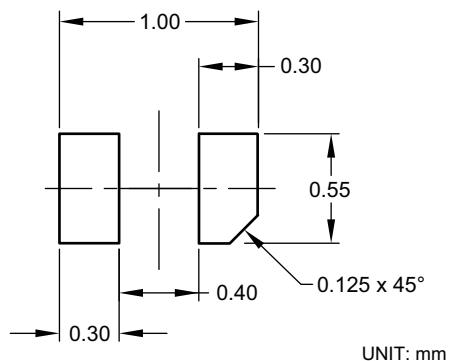
Typical Performance Characteristics



Package Dimensions, DFN 1.0 x 0.6



RECOMMENDED LAND PATTERN



Dimensions in millimeters

Symbols	Min.	Nom.	Max.
A	0.47	0.51	0.55
A1	0.00	0.02	0.05
b	0.45	0.50	0.55
D		0.60 BSC	
E		1.00 BSC	
e		0.65 BSC	
L	0.20	0.25	0.30
aaa		0.05	
ccc		0.03	
ddd		0.10	

Dimensions in inches

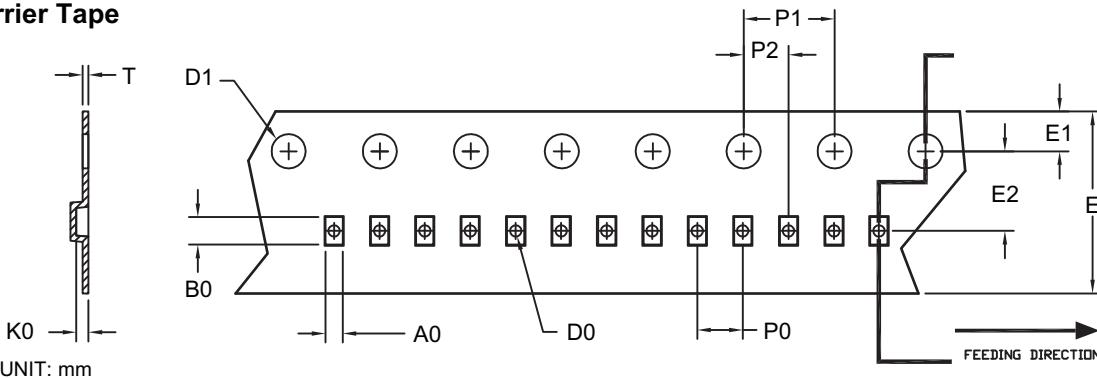
Symbols	Min.	Nom.	Max.
A	0.019	0.020	0.022
A1	0.000	0.001	0.002
b	0.018	0.020	0.022
D		0.024	
E		0.039	
e		0.026	
L	0.008	0.010	0.012
aaa		0.002	
ccc		0.001	
ddd		0.004	

Notes:

- Dimensions and tolerancing conform to ASME Y14.5-2009.
- All dimensions are in millimeters.
- “e” represents the terminal grid pitch.
- N is the total number of terminals.
- A visual index feature must be located within the hatched area. Typical index feature (chamfer) must be located on the edge of the Pin#1 feature.
- This dimension includes stand-off height “A1” and packaged body thickness, but does not include attached feature e.g. external heatsink or chip capacitors, an internal heatslug is not considered as attached feature.
- Dimension “A1” is primarily terminal plating, and does not include small metal protrusions.

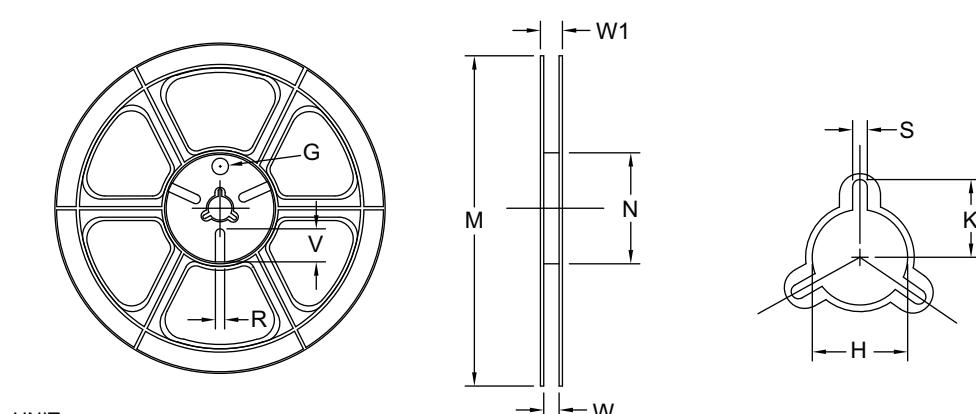
Tape and Reel Dimensions, DFN 1.0 x 0.6

Carrier Tape



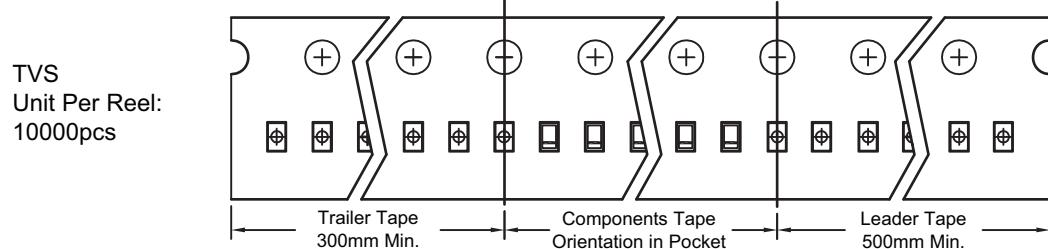
Option	Package	A0	B0	K0	D0	D1	E	E1	E2	P0	P1	P2	T
A	DFN 1.0x0.6/ DFN 1.0x0.6A (8 mm)	0.69 ±0.05	1.19 ±0.05	0.66 ±0.05	0.40 ±0.05	1.50 ±0.10	8.00 +0.3/-0.1	1.75 ±0.10	3.50 ±0.05	2.00 ±0.05	4.00 ±0.10	2.00 ±0.05	0.23 ±0.02
B	DFN 1.0x0.6/ DFN 1.0x0.6A (8 mm)	0.65 ±0.04	1.05 ±0.04	0.61 ±0.04	0.40 ±0.05	1.50 ±0.10	8.00 +0.3/-0.1	1.75 ±0.10	3.50 ±0.05	2.00 ±0.10	4.00 ±0.10	2.00 ±0.05	0.20 ±0.05

Reel

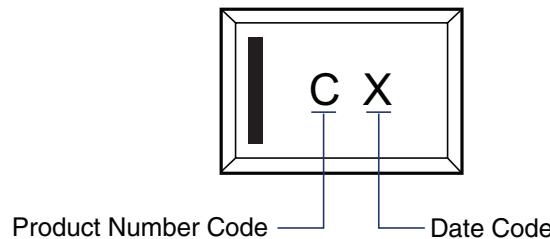


Tape Size	Reel Size	M	N	W	W1	H	K	S	G	R	V
8mm	ø178	ø178 ±0.5	ø55 ±1	8.4 +1.5/-0	Max. 14.4	ø13.0 ±0.5	Max. 10.1	2.0 ±0.5	N/A	N/A	N/A

Leader / Trailer & Orientation



Part Marking



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