



General Description

The AOZ8211 is a one-line transient voltage suppressor diode designed to protect voltage sensitive electronics from high transient conditions and ESD.

This device incorporates one TVS diode in an ultra-small SOD923 package. During transient conditions, the 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 (±15kV air, ±8kV contact discharge).

The AOZ8211 comes in an RoHS compliant SOD923 package and is rated over a -40° C to $+85^{\circ}$ C ambient temperature range.

The ultra-small $1.0 \ge 0.6 \ge 0.4$ mm SOD923 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.

Features

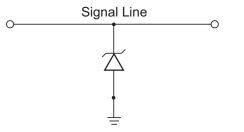
- ESD protection for high-speed data lines:
 - Exceeds: IEC 61000-4-2 (ESD) ±28kV (air), ±28kV (contact)
 - Human Body Model (HBM) ±30kV
- Small package saves board space
- Low insertion loss
- Low clamping voltage
- Low operating voltage: 5V and 12V

Applications

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

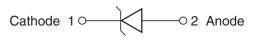


Typical Application



Unidirection Protection of Single Line

Pin Configuration



Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8211NI-05L	-40°C to +85°C	SOD923	RoHS Compliant
AOZ8211NI-12L			Green Product



All AOS products are offered in packages with Pb-free plating and compliant to RoHS standards.

Parts marked as Green Products (with "L" suffix) use reduced levels of Halogens, and are also RoHS compliant.

Green Please visit www.aosmd.com/web/quality/rohs_compliant.jsp for additional information.

Absolute Maximum Ratings

Exceeding the Absolute Maximum ratings may damage the device.

Parameter	Rating
Peak Pulse Current (I _{PP}), t _P = 8/20µs	5A
Storage Temperature (T _S)	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact ⁽¹⁾	±28kV
ESD Rating per IEC61000-4-2, Air ⁽¹⁾	±28kV
ESD Rating per Human Body Model ⁽²⁾	±30kV

Notes:

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

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

Maximum Operating Ratings

Parameter	Rating
Junction Temperature (T _J)	-40°C to +85°C

Electrical Characteristics

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

Symbol	Parameter	Symbol	Parameter
I _{PP}	Maximum Reverse Peak Pulse Current	Ι _Τ	Test Current
V _{CL}	Clamping Voltage @ I _{PP}	١ _F	Forward Current
V _{RWM}	Working Peak Reverse Voltage	V _F	Forward Voltage @ I _F
I _R	Maximum Reverse Leakage Current @ V _{RWM}	P _{pk}	Peak Power Dissipation
V _{BR}	Breakdown Voltage @ I _T	CJ	Max. Capacitance @ $V_R = 0$ and f = 1MHz

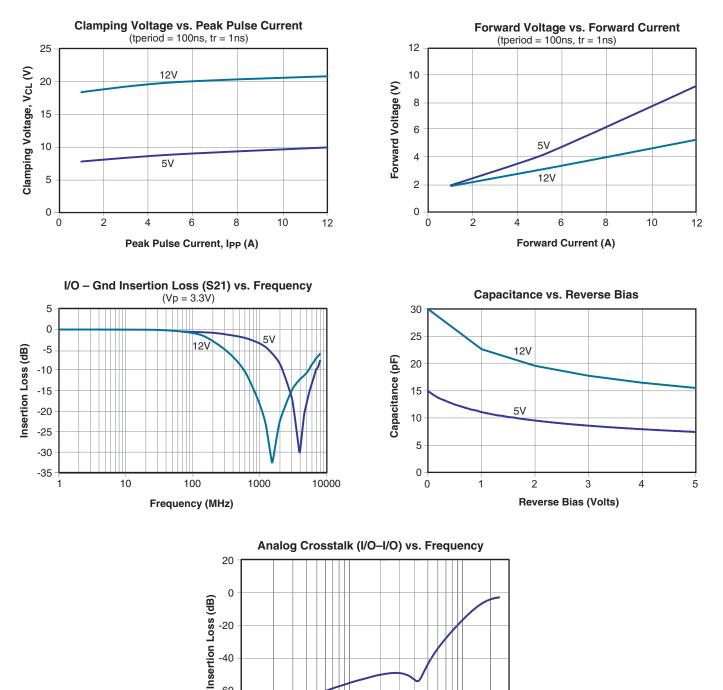
Electrical Characteristics

 $T_A = 25^{\circ}C$ unless otherwise noted, $V_F = 0.9V$ Max. @ $I_F = 10mA$ for all types

	Device	V _{RWM} (V)	V _{BR} (V)	I _R (μΑ)	V _F (V)		V _{CL} Max.	C _{.l} (pF)		
Device	Marking	Max.	Max.	Max.	Тур.	I _{PP} = 1A	I _{PP} = 5A	I _{PP} = 12A	Тур.	
AOZ8211NI-05L	С	5.0	6.0	0.1	0.75	8.00	9.00	10.00	16	
AOZ8211NI-12L	D	12.0	15.0	0.1	0.75	18.00	20.00	21.00	30	



Typical Performance Characteristics



40

-60

-80

10

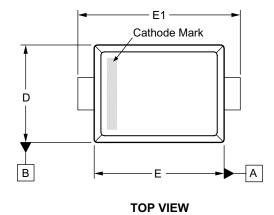
100

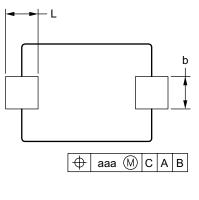
Frequency (MHz)

1000

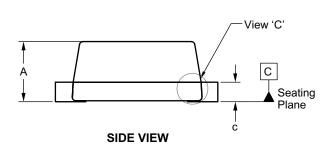


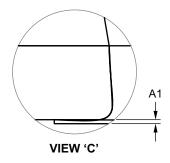
Package Dimensions, SOD923



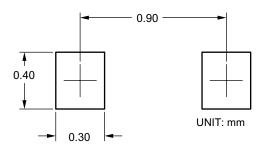


BOTTOM VIEW





RECOMMENDED LAND PATTERN



Dimensions in millimeters

Symbols Min. Nom. Max. 0.41 А _ — A1 0.00 0.05 0.20 b 0.15 0.25 0.07 0.12 0.14 с D 0.55 0.60 0.65 Е 0.75 0.80 0.85 E1 0.95 1.00 1.05 0.15 0.20 0.25 L 0.08 aaa

Dimensions in inches

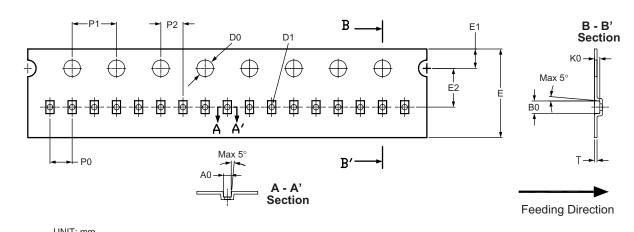
Symbols	Min.	Nom.	Max.
А			0.016
A1	0.00	_	0.002
b	0.006	0.008	0.010
с	0.003	0.005	0.006
D	0.022	0.024	0.026
E	0.030	0.031	0.033
E1	0.037	0.039	0.041
L	0.006	0.008	0.010
aaa		0.003	

Notes:

- 1. All dimensions are in millimeters.
- 2. Dimensions are inclusive of plating.
- 3. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.
- 4. The cathode mark is optional.
- 5. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 3 mils each.

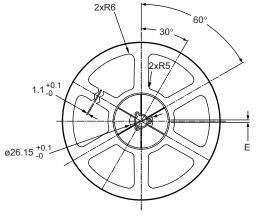
Tape and Reel Dimensions, SOD923

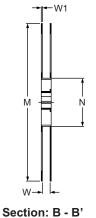


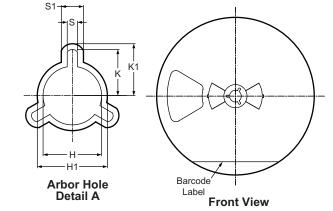


UNIT: mm												
Package	A0	В0	К0	D0	D1	Е	E1	E2	P0	P1	P2	т
SOD923	0.70 ±0.05	1.12 ±0.05	0.48 ±0.05	ø1.50 ±0.1	ø0.5 ±0.05	8.0 ±0.2	1.75 ±0.1	3.5 ±0.05	2.0 ±0.05	4.0 ±0.1	2.0 ±0.05	0.229 ±0.02

Reel



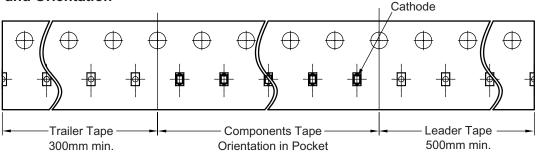




Back View

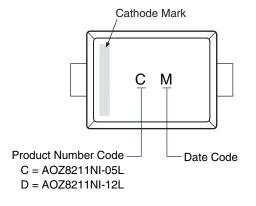
UNIT: mm												
Tape Size	Reel Size	М	N	W	W1	н	H1	к	K1	S	S1	Е
8mm	ø180	ø177.7 ±0.5	ø54.4 ±0.5	8.8 ±0.5	1.15 +0.2 / -0.0	ø13.2 ±0.3	ø15.8	10.4	11.7	2.3 ±0.1	4.9 ±0.1	2.8 ±0.1

Leader/Trailer and Orientation





Part Marking



This data sheet contains preliminary data; supplementary data may be published at a later date. Alpha & Omega Semiconductor reserves the right to make changes at any time without notice.

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