

General Description

The AOZ8S530BLS-07 is a single channel, bidirectional TVS diode designed to protect low speed data lines or power rails from damaging ESD/EOS events.

The AOZ8S530BLS-07 provides low dynamic resistance, and up to 18A surge current (8/20us) with housing in small package (0201) for specified applications.

The AOZ8S530BLS-07 comes in a RoHS compliant and Halogen Free WLCSP 0.6 mm x 0.3 mm x 0.3 mm package and is rated for -40°C to +125°C junction temperature range.

Features

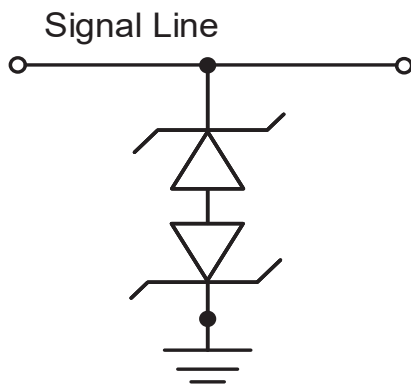
- IEC 61000-4-2 Immunity
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
- IEC61000-4-5 (8/20 μs): 18A
- Low clamping voltage
- Reverse working voltage: 7V
- Capacitance: 21pF

Applications

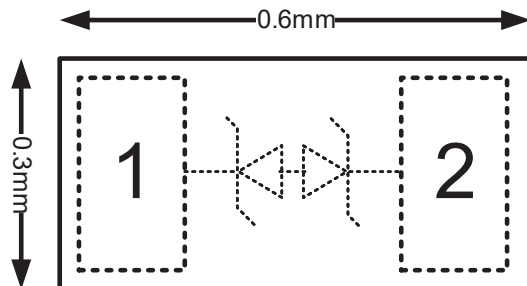
- DC power rails
- Low speed data lines
- Mobile phone
- Wearable devices
- Display panels



Typical Application



Pin Configuration



Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8S530BLS-07	-40°C to +125°C	WLCSP0.6×0.3-2	Green Product



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant. Please visit <https://aosmd.com/sites/default/files/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⁾	±30 kV
ESD Rating per IEC61000-4-2, Air ⁽¹⁾	± 30kV
ESD Rating per Human Body Mode (HMB) ⁽²⁾	±8kV
Surge Rating per IEC61000-4-5, 8/20µs	±18 A

Notes:

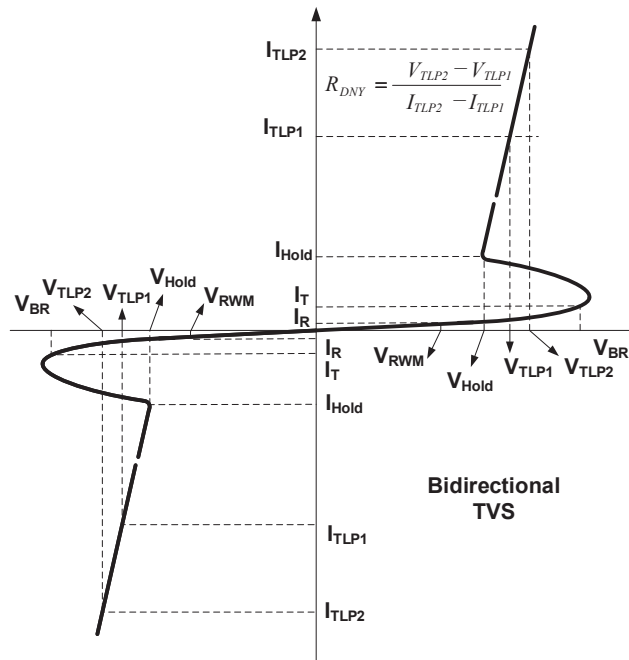
- IEC 61000-4-2 discharge with C_{Discharge} = 150pF, R_{Discharge} = 330Ω
- Human Body Discharge per MIL-STD-883, Method 3015 C_{Discharge} = 100pF, R_{Discharge} = 1.5kΩ

Maximum Operating Ratings

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

Electrical Characteristics

T_A = 25°C unless otherwise specified. Any Pin to Pin.



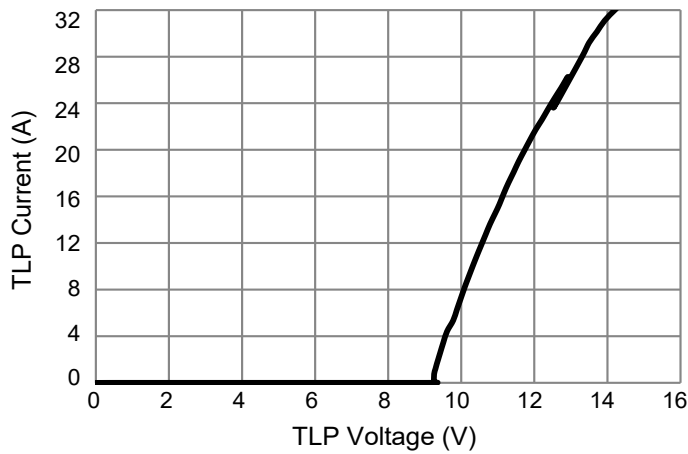
Symbol	Parameter	Conditions	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage				7	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	8	9	10	
I _R	Reverse Leakage Current	V _T = Max. V _{RWM}		1	100	nA
V _{CL}	Clamping Voltage ^{(3) (4)} (100ns Transmission Line Pulse)	I _{TLP} = 1A		9		V
		I _{TLP} = 16A		11		
		I _{TLP} = 30A		13.5		
	Clamping Voltage ⁽³⁾ (IEC61000-4-5 Surge 8/20μs)	I _{PP} = 2A		10.5		
		I _{PP} = 10A		12.2		
		I _{PP} = 18A		14.3		
R _{DNY}	Dynamic Resistance ^{(3) (4)}	I _{TLP} = 1A to 30A		0.155		Ω
C _J	Junction Capacitance ⁽³⁾	V _{I/O} = 0V, f = 1MHz		21		pF

Notes:

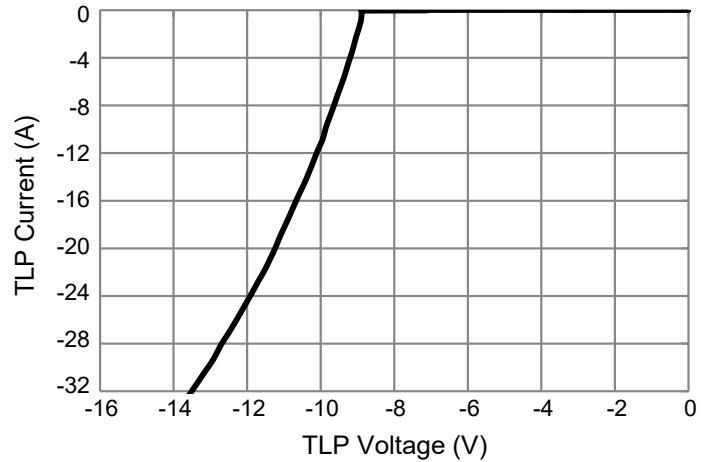
- 3. These specifications are guaranteed by design and characterization.
- 4. Measurements performed using a 100 nS Transmission Line Pulse (TLP) system.

Typical Characteristics

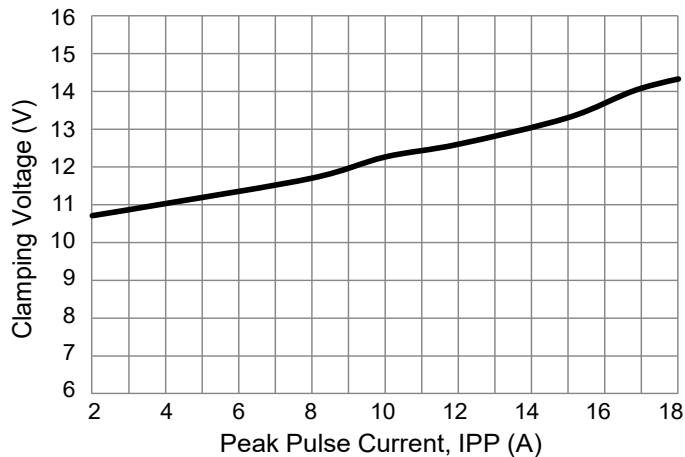
Positive Transmission Line Pulse
($t_p=100\text{ns}$, $t_r=0.2\text{ns}$)



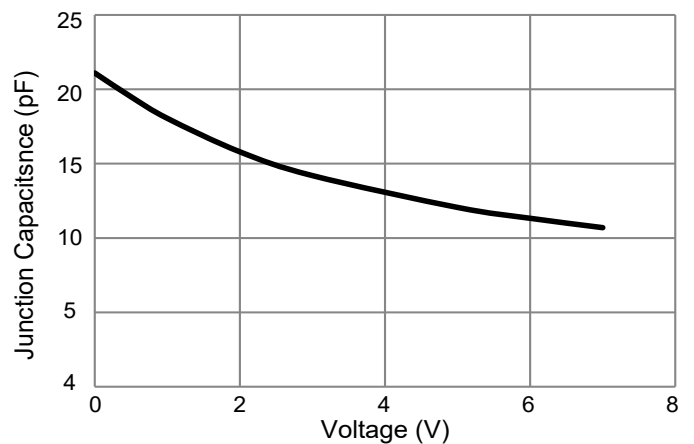
Negative Transmission Line Pulse
($t_p=100\text{ns}$, $t_r=0.2\text{ns}$)



IEC61000-4-5 Surge 8/20 μs (Any pin to Pin)



Typical Variations of CJ vs. Input Voltage



LEGAL DISCLAIMER

Applications or uses as critical components in life support devices or systems are not authorized. Alpha and Omega Semiconductor does not assume any liability arising out of such applications or uses of its products. AOS reserves the right to make changes to product specifications without notice. It is the responsibility of the customer to evaluate suitability of the product for their intended application. Customer shall comply with applicable legal requirements, including all applicable export control rules, regulations and limitations.

AOS's products are provided subject to AOS's terms and conditions of sale which are set forth at:

http://www.aosmd.com/terms_and_conditions_of_sale

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.