

## General Description

The AOZ8S530BLS-05 is a single channel transient voltage suppressor designed to protect data lines or power rails from damaging ESD events.

This device incorporates a bidirectional TVS diode in a single package. During transient conditions, the bidirectional diodes direct the transient to either the positive side of the power supply line or to ground.

The AOZ8S530BLS-05 provides low dynamic resistance and low breakdown voltage make it ideally suited for data lines protections in mobile and computing devices.

The AOZ8S530BLS-05 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

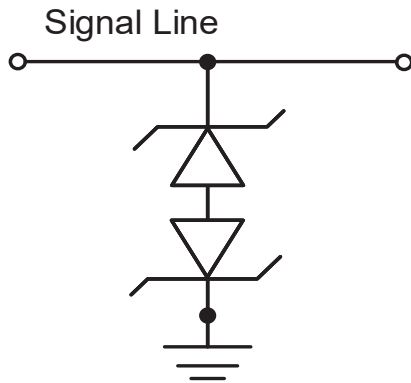
- IEC 61000-4-2 Immunity
  - Air discharge:  $\pm 30\text{kV}$
  - Contact discharge:  $\pm 30\text{kV}$
- IEC61000-4-5 (Lightning, 8/20 $\mu\text{s}$ ): 28A
- Low clamping voltage
- Reverse Working Voltage: 5.5V
- Capacitance: 15pF

## Applications

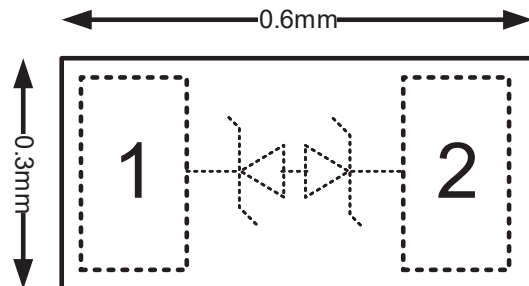
- DC Power Rails
- Low speed data lines
- VBUS
- Mobile Phone
- Notebook computers



## Typical Application



## Pin Configuration



## Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8S530BLS-05	-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 [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
Storage Temperature (T <sub>S</sub> )	-65 °C to +150 °C
ESD Rating per Human Body Mode (HMB)	±8 kV
ESD Rating per IEC61000-4-2, Contact <sup>(1)</sup>	±30 kV
ESD Rating per IEC61000-4-2, Air <sup>(1)</sup>	± 30kV
Surge Rating per IEC61000-4-5, 8/20µs	±28 A

### Notes:

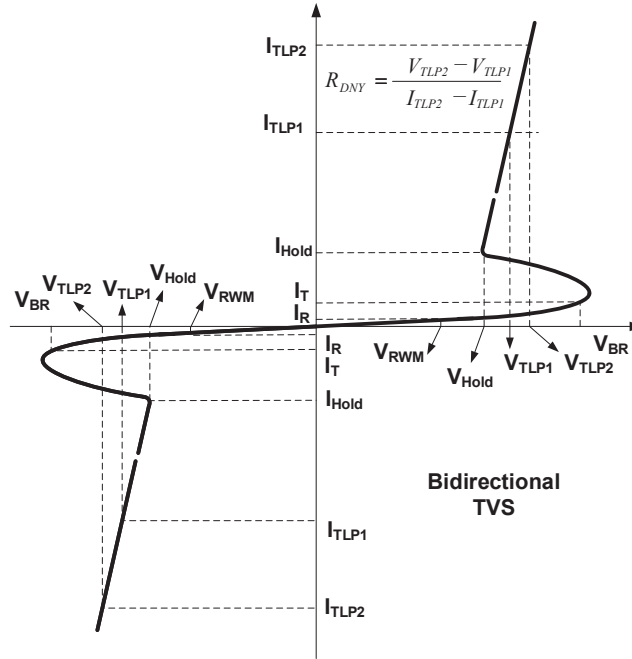
- IEC 61000-4-2 discharge with C<sub>Discharge</sub> = 150pF, R<sub>Discharge</sub> = 330Ω
- Human Body Discharge per MIL-STD-883, Method 3015 C<sub>Discharge</sub> = 100pF, R<sub>Discharge</sub> = 1.5kΩ

## Maximum Operating Ratings

Parameter	Rating
Junction Temperature (T <sub>J</sub> )	-40°C to + 125°C

## Electrical Characteristics

T<sub>A</sub> = 25°C unless otherwise specified. Any Pin to Pin.



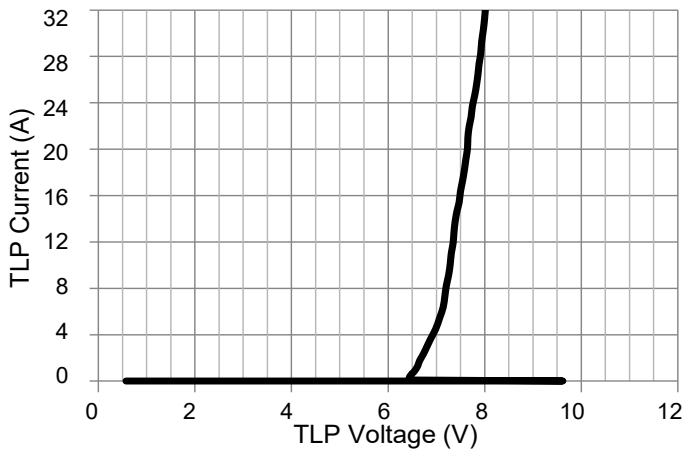
Symbol	Parameter	Conditions	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage				5.5	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	5.8	7.5	9.0	
I <sub>R</sub>	Reverse Leakage Current	V <sub>T</sub> = Max. V <sub>RWM</sub>		1	100	nA
V <sub>CL</sub>	Clamping Voltage <sup>(3) (4)</sup> (100ns Transmission Line Pulse)	I <sub>TLP</sub> = 1A		6.5		V
		I <sub>TLP</sub> = 16A		7.5		
		I <sub>TLP</sub> = 30A		8		
	Clamping Voltage <sup>(3)</sup> (IEC61000-4-5 Surge 8/20µs)	I <sub>PP</sub> = 2A		6.1		
		I <sub>PP</sub> = 10A		6.4		
		I <sub>PP</sub> = 28A		7.6		
R <sub>DNY</sub>	Dynamic Resistance <sup>(3) (4)</sup>	I <sub>TLP</sub> = 1A to 30A		0.05		Ω
C <sub>J</sub>	Junction Capacitance <sup>(3)</sup>	V <sub>I/O</sub> = 0V, f = 1MHz		15		pF

**Notes:**

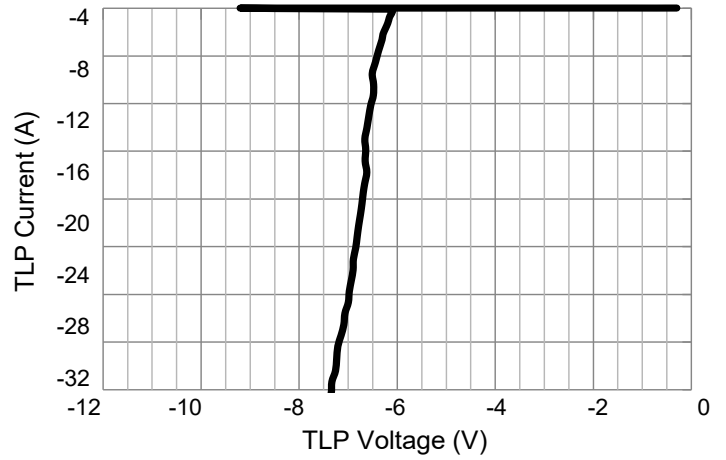
- 3. These specifications are guaranteed by design and characterization.
- 4. Measurements performed using a 100 nS Transmission Line Pulse (TLP) system.

## Typical Characteristics

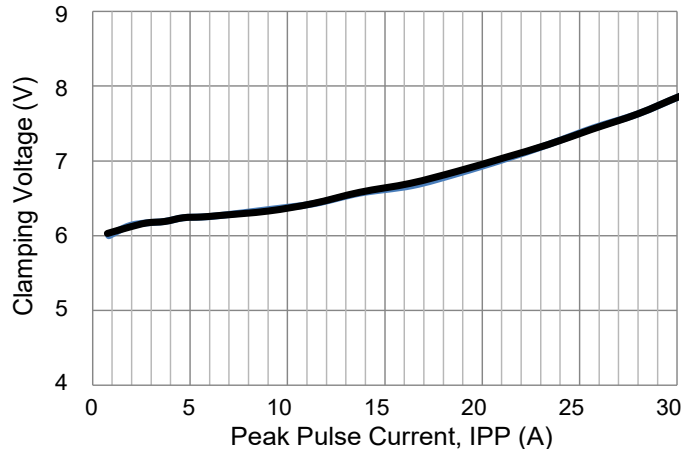
Positive Transmission Line Pulse  
( $t_p=100\text{ns}$ ,  $t_r=0.2\text{ns}$ )



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



IEC61000-4-5 Surge 8/20 $\mu\text{s}$  (Any pin to Pin)



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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.