



**THE DATASHEET OF  
AOZ8831DT-05**



## General Description

The AOZ8831DT-05 is an ultra low capacitance one-line bi-directional transient voltage suppressor diode designed to protect 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. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4.

The AOZ8831DT-05 comes in an RoHS compliant DFN package and is rated over a -40°C to +85°C ambient temperature range.

The ultra-small 1.0 x 0.6mm DFN 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

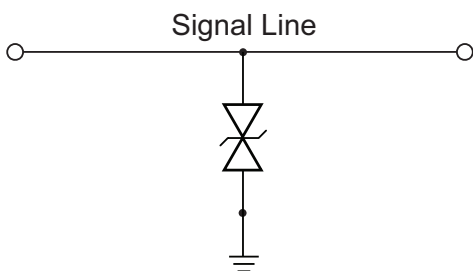
- ESD protection for high-speed data lines:
  - Exceeds: IEC 61000-4-2 (ESD)  $\pm 20\text{kV}$  (air),  $\pm 20\text{kV}$  (contact)
  - Human Body Model (HBM)  $\pm 15\text{kV}$
- Small package saves board space
- Ultra low capacitance: 0.22pF
- Low clamping voltage
- Operating voltage: 5V
- Pb-free device

## Applications

- Portable handheld devices
- Notebook computers
- Digital Cameras
- Portable GPS



## Typical Application



**Bidirection Protection of Single Line**

## Pin Configuration



## Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8831DT-05	-40°C to +85°C	DFN 1.0 x 0.6	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
VP – VN	5.5V
Peak Pulse Current ( $I_{PP}$ ), $t_P = 8/20\mu s$	6A
Peak Pulse Power (IEC61000-4-5 8/20 $\mu s$ current pulse)	90W
Storage Temperature ( $T_S$ )	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact <sup>(1)</sup>	±20kV
ESD Rating per IEC61000-4-2, Air <sup>(1)</sup>	±20kV
ESD Rating per Human Body Model <sup>(2)</sup>	±15kV

### Notes:

- IEC 61000-4-2 discharge with  $C_{Discharge} = 150pF$ ,  $R_{Discharge} = 330\Omega$ .
- 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<sub>A</sub> = 25°C unless otherwise specified.

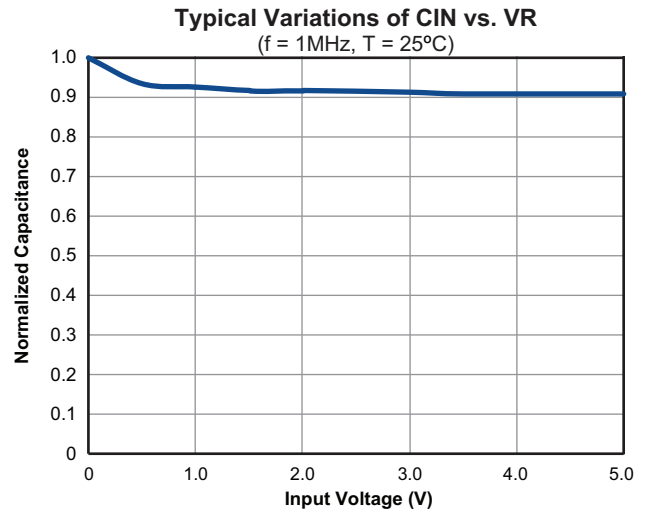
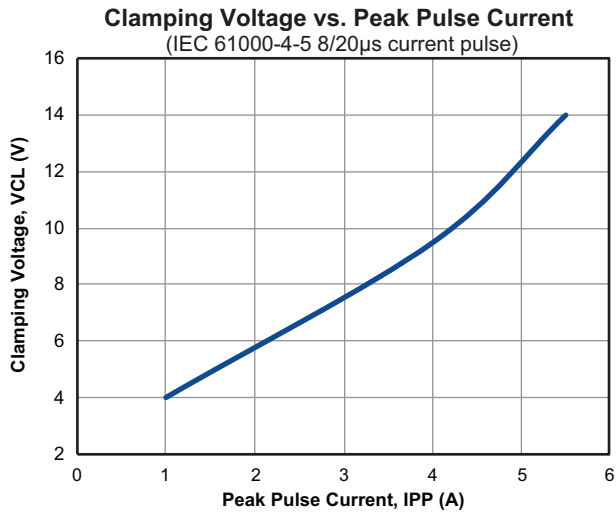
Symbol	Parameter	Diagram
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current <sup>(3)</sup> (IEC61000-4-5 8/20µs pulse)	
V <sub>CL</sub>	Clamping Voltage @ I <sub>PP</sub> <sup>(3)</sup>	
V <sub>RWM</sub>	Working Peak Reverse Voltage	
I <sub>R</sub>	Maximum Reverse Leakage Current	
V <sub>BR</sub>	Breakdown Voltage	
C <sub>J</sub>	Capacitance @ V <sub>R</sub> = 0 and f = 1MHz	

Device	Device Marking	V <sub>RWM</sub> (V) Max.	V <sub>BR</sub> (V)		I <sub>R</sub> (µA) Max.	V <sub>CL</sub> Max.			C <sub>J</sub> (pF)	
			Min.	Max.		I <sub>PP</sub> = 1 A	I <sub>PP</sub> = 4 A	I <sub>PP</sub> = 6 A	Typ.	Max.
AOZ8831DT-05	5	5.5	6	10	0.1	4	9.5	15	0.22	0.35

**Notes:**

3. These specifications are guaranteed by design and characterization.

**Performance Characteristics**



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