

AOZ8832DI-05

Ultra Low Capacitance Two-line
Bidirectional TVS Diode

General Description

The AOZ8832DI-05 is an ultra low capacitance one-line bidirectional 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 bidirectional TVS diode in an ultra-small 0402 footprint package. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (±15 kV air, ±15 kV contact discharge).

The AOZ8832DI-05 comes in an RoHS compliant package and is rated over a -40°C to +85°C ambient temperature range.

The ultra-small 1.0mm x 0.6 mm x 0.5 mm DFN package makes the AOZ8832DI-05 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

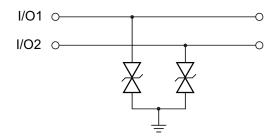
- ESD protection for high-speed data lines:
 - Exceeds: IEC 61000-4-2 (ESD) ±15 kV (air), ±15 kV (contact)
 - Human Body Model (HBM) ±15 kV
- Ultra low capacitance: 0.4 pF
- Low clamping voltage
- Low operating voltage: 5.0 V
- Pb-free device

Applications

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

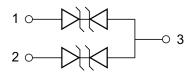


Typical Application



Bidirection Protection of Two Lines

Pin Configuration





Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8832DI-05	-40°C to +85°C	DFN 1.0 x 0.6-3L	Green Product RoHS Compliant



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	5 V
Peak Pulse Current (I _{PP}), t _P = 8/20μs (IEC61000-4-5)	2 A
Peak Pulse Power, t _P = 8/20μs	30 W
Storage Temperature (T _S)	-65°C to +150°C
ESD Rating per IEC61000-4-2, Contact ⁽¹⁾	±15 kV
ESD Rating per IEC61000-4-2, Air ⁽¹⁾	±15 kV
ESD Rating per Human Body Model ⁽²⁾	±15 kV

Notes

- 1. IEC 61000-4-2 discharge with C $_{\rm Discharge}$ = 150 pF, R $_{\rm Discharge}$ = 330 $\Omega.$
- 2. Human Body Discharge per MIL-STD-883, Method 3015 $C_{Discharge}$ = 100 pF, $R_{Discharge}$ = 1.5 k Ω .

Maximum Operating Conditions

The device is not guaranteed to operate beyond the Maximum Operating Conditions.

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

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Electrical Characteristics

 T_A = 25°C unless otherwise specified. Specifications in **BOLD** indicate a temperature range of -40°C to +85°C.

Symbol	Parameter	Diagram		
I _{PP}	Maximum Reverse Peak Pulse Current	!		
V _{CL}	Clamping Voltage @ I _{PP}	IPP		
V _{RWM}	Working Peak Reverse Voltage			
I _R	Maximum Reverse Leakage Current	V _{CL} V _{BR} V _{RWM}		
V _{BR}	Breakdown Voltage	IR V _{RWM} V _{BR} V _{CL}		
P _{PK}	Peak Power Dissipation			
СЈ	Capacitance @ V _R = 0 and f = 1 MHz	IPP		

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Units
V_{RWM}	Reverse Working Voltage ⁽³⁾	Between pins 1 and 2			5.0	V
V _{BR}	Reverse Breakdown Voltage ⁽⁴⁾	I _T = 1 mA, between pins 1 and 2	6.0	9.4	10.0	V
I _R	Reverse Leakage Current	V _{RWM} = 5 V, between pins 1 and 2		0.05	0.1	μA
V _{CL}	Channel Clamp Voltage	I_{PP} = 1 A, t_P = 100 ns, between pins 1 and 2		11.5	14.0	V
		I_{PP} = 2 A, t_P = 100 ns, between pins 1 and 2		13.0	16.0	V
		I_{PP} = 5 A, t_P = 100 ns, between pins 1 and 2		16.3	19.5	V
		I _{PP} = 1 A, IEC61000-4-5, 8/20 μs, between pins 1 and 2		12.8	15.5	V
		I _{PP} = 2 A, IEC61000-4-5, 8/20 μs, between pins 1 and 2		15.3	20.0	V
CJ	Junction Capacitance	V _R = 0 V, f = 1 MHz, between pins 1 and 2		0.4	0.6	pF

Notes:

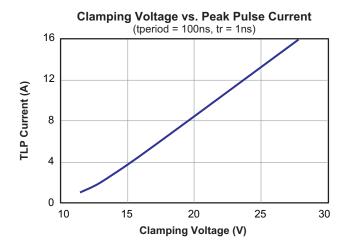
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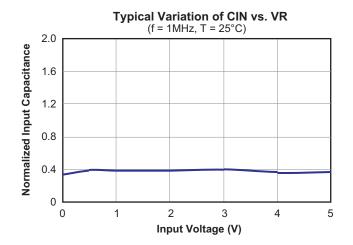
 $^{3. \} The \ working \ peak \ reverse \ voltage \ (V_{RWM}) \ should \ be \ equal \ to \ or \ greater \ than \ the \ DC \ or \ continuous \ peak \ operating \ voltage \ level.$

^{4.} V_{BR} is measured at the pulse test current I_{T} .



Typical Performance Characteristics





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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.

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