AOZ8S503BDS-03

1-Channel Bidirectional TVS

General Description

The AOZ8S503BDS-03 is a 1-channel bidirectional high surge transient voltage suppressor designed to protect data lines such as audio line and power rail from damaging ESD or surge events.

This device incorporates two unidirectional TVS diodes 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 AOZ8S503BDS-03 provides a typical capacitance of 16 pF and low clamping voltage making it ideally suited for data transmission protection in mobile and computing devices.

The AOZ8S503BDS-03 comes in a RoHS compliant and Halogen Free 0.6mm × 0.3mm × 0.3mm package and is rated for -40°C to +125°C junction temperature range.

Features

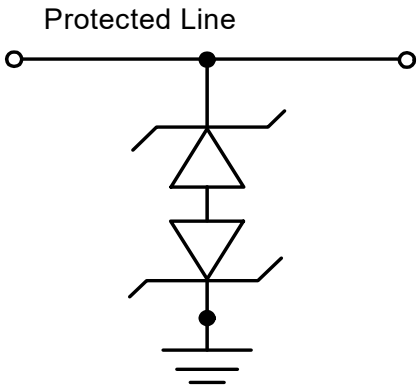
- IEC 61000-4-2, ESD immunity:
  - Air discharge: ±30kV
  - Contact discharge: ±30kV
- IEC 61000-4-5, Surge immunity (8/20 µs): 8A
- IEC 61000-4-4 (EFT, 5/50ns): 40A
- Human Body Mode (HBM): ±8kV
- Junction Capacitance: 16 pF
- Low clamping voltage
- Reverse Working Voltage: 3.3V

Applications

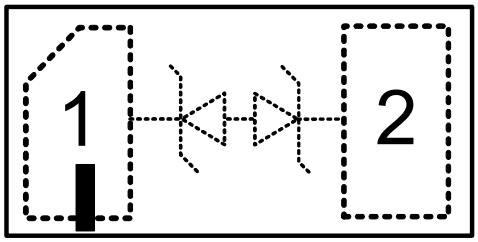
- Audio Lines
- General Purpose
- Mobile Phone
- Notebook computers

Green Product

Typical Application



Pin Configuration



DFN0.6x0.3-2L
(Top View)

Ordering Information

Part Number	Ambient Temperature Range	Package	Environmental
AOZ8S503BDS-03	-40°C to +125°C	DFN0.6×0.3-2L	Green Product

AOS Green Products use reduced levels of Halogens, and are also RoHS compliant.

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)	±30 kV
8/20μs Surge IEC61000-4-5 Peak Pulse Current	± 8 A
EFT Rating per IEC61000-4-4 (5/50ns)	40 A
ESD Rating per Human Body Mode (HBM)	±8 kV

Notes:

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

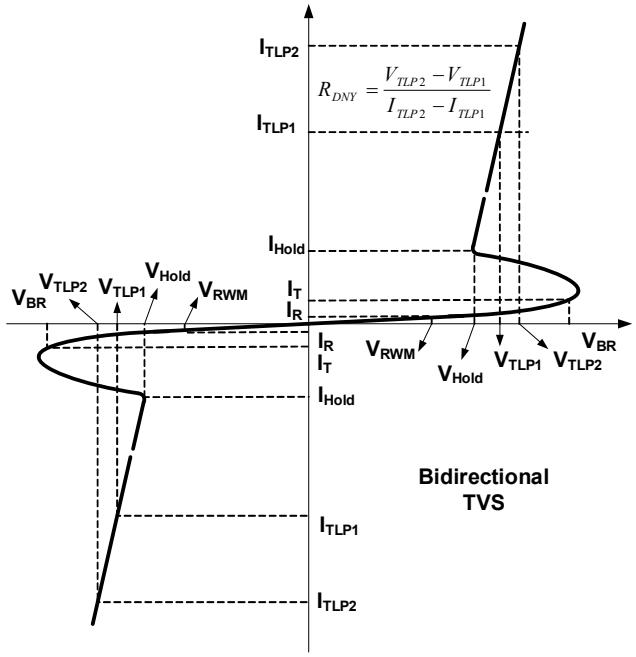
Maximum Operating Ratings

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

Electrical Characteristics

T_A= 25°C unless otherwise specified. Any I/O pin to pin.

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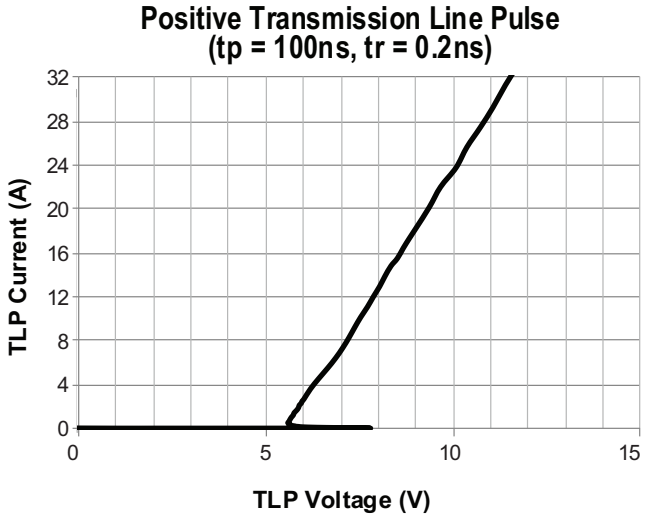


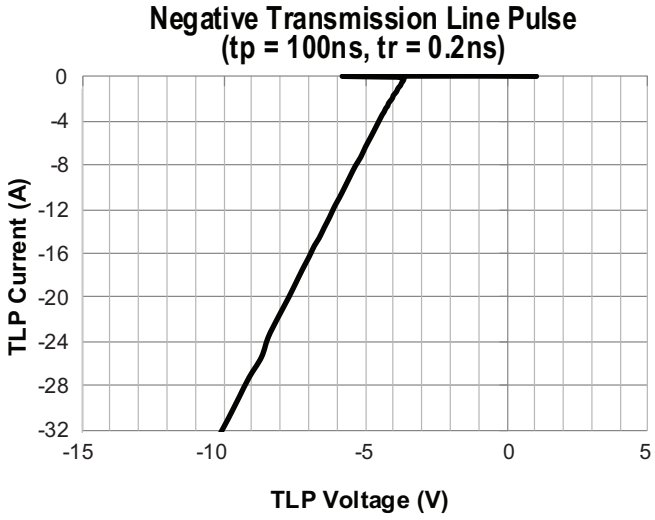
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	3.6	5.5	7	
I_R	Reverse Leakage Current	V_T=Max. V_{RWM}		1	100	nA
V_{HOLD}	Hold Voltage of Snapback(2)	I_T = 100mA	3.3			V
V_{CL}	Clamping Voltage(2) 100ns Transmission Line Pulse	I_{TLP}=1A I_{TLP}=16A I_{TLP}=30A		5 8 11		
	Clamping Voltage(2) IEC61000-4-5 Surge 8/20μs	I_{PP}=2A I_{PP}=8A		5 8		
C_J	Junction Capacitance(2)	$V_{I/O}$ = 0V, f = 1MHz		16		pF

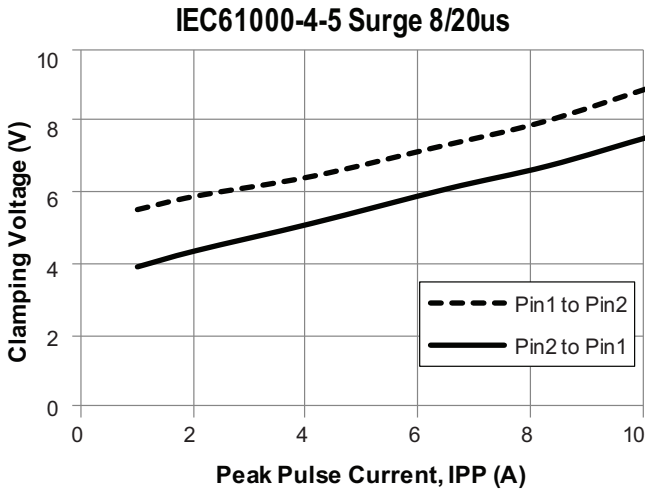
Notes:

2. These specifications are guaranteed by design and characterization.

Typical 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.