

1. Description

The AOZ8905 is a transient voltage suppressor array designed to protect high speed data lines such as HDMI, USB 2.0, MDDI, SATA, and Gigabit Ethernet from damaging ESD events.

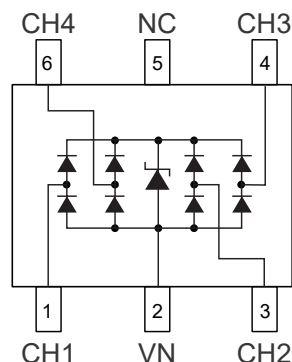
2. Applications

- HDMI, USB 2.0, MDDI, SATA ports
- Monitors and flat panel displays
- Set-top box
- Video graphics cards
- Digital Video Interface (DVI)
- Notebook computers

3. Features

- ESD protection for high-speed data lines:
 - IEC 61000-4-2, level 4 (ESD) immunity test
 - IEC61000-4-4 (EFT) 40A (5/50nS)
 - IEC61000-4-5 (Lightning) 2.5A (8/20μS)
 - Human Body Model (HBM) ±15kV
 - ±15kV (air discharge) and ±8kV (contact discharge)
 - Protects four I/O lines
 - Low capacitance between I/O lines: 0.35pF
 - Low clamping voltage
 - Low operating voltage: 5.0V
- Array of surge rated diodes with internal TVS diode

4. Pinning information



SOT23-6



5. Absolute Maximum Ratings

Parameter	Rating
Storage Temperature (T_s)	-65°C to +150°C
ESD Rating per IEC61000-4-2, contact ⁽¹⁾	±8kV
ESD Rating per IEC61000-4-2, air ⁽¹⁾	±15kV
ESD Rating per Human Body Model ⁽²⁾	±15kV

Notes:

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

6. Maximum Operating Ratings

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



7. Electrical Characteristic

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}	Between I/O and VN ⁽³⁾			5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$, between I/O and VN ⁽⁴⁾	6			V
Reverse Leakage Current	I_R	$V_{RWM}=5V$, between I/O and VN			1	μA
Diode Forward Voltage	V_F	$I_F=15mA$	0.7	0.85	1	V
Channel Clamp Voltage Positive	V_{CL}	$I_{PP}=1A$, $t_p=100ns$			15	V
Transients Negative Transient		any I/O pin to Ground ⁽⁵⁾			-3.5	V
Channel Clamp Voltage Positive		$I_{PP}=5A$, $t_p=100ns$			22	V
Transients Negative Transient		any I/O pin to Ground ⁽⁵⁾			-6	V
Channel Clamp Voltage		$I_{PP}=1A$, $t_p=8/20\mu s$ Any I/O Pin to Ground			15.5	V
Channel Input Capacitance	C_J	$V_R=0V$, $f=1MHz$, between I/O pins		0.35	0.4	pF
		$V_R=0V$, $f=1MHz$, any I/O pin to Ground		0.7	0.8	pF

Notes: $T_A=25^{\circ}C$ unless otherwise specified. Specifications in BOLD indicate a temperature range of $-40^{\circ}C$ to $+85^{\circ}C$.

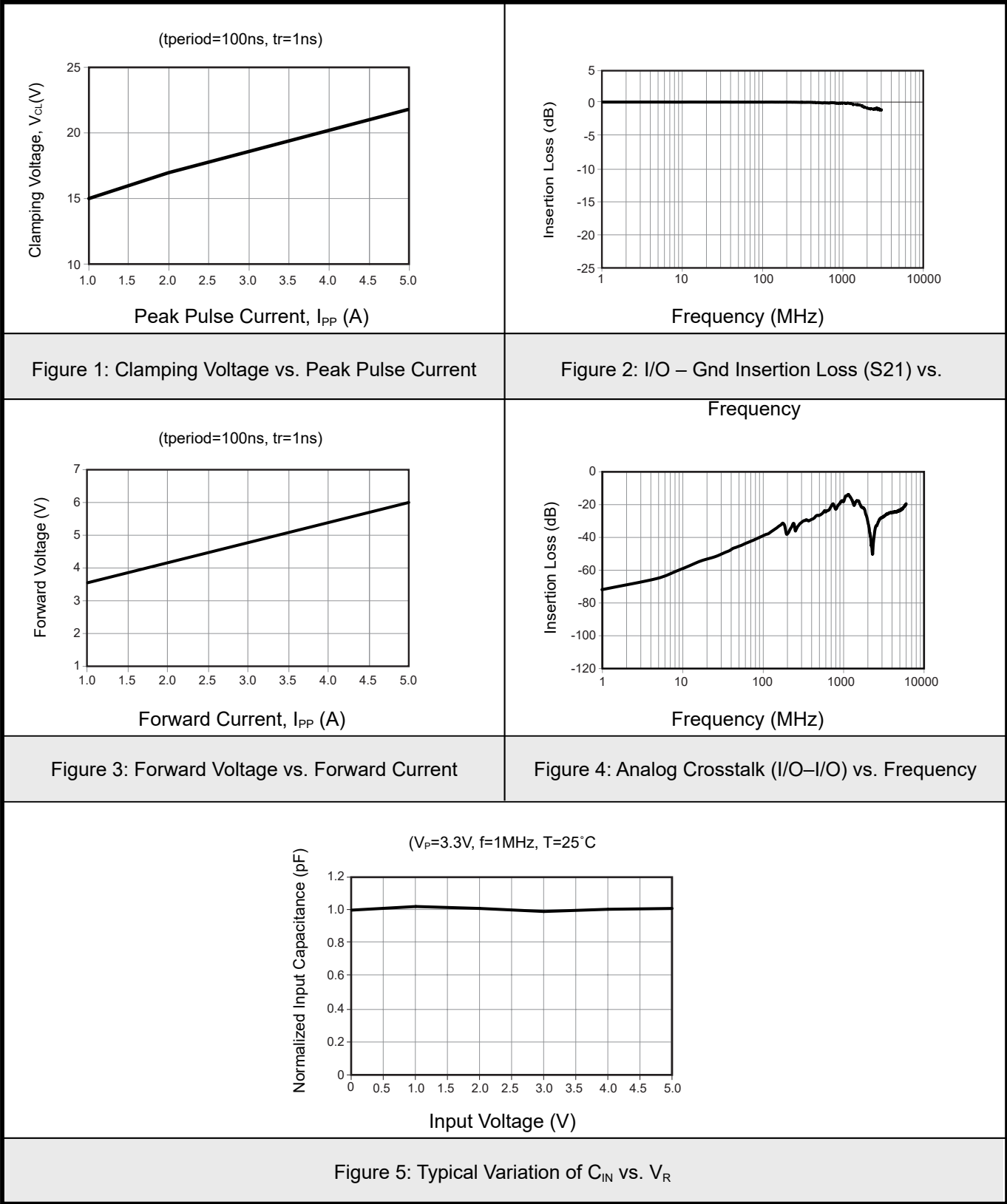
3. The working peak reverse voltage, V_{RWM} , should be equal to or greater than the DC or continuous peak operating voltage level.

4. V_{BR} is measured at the pulse test current I_T .

5. Measurements performed using a 100ns Transmission Line Pulse (TLP) system.

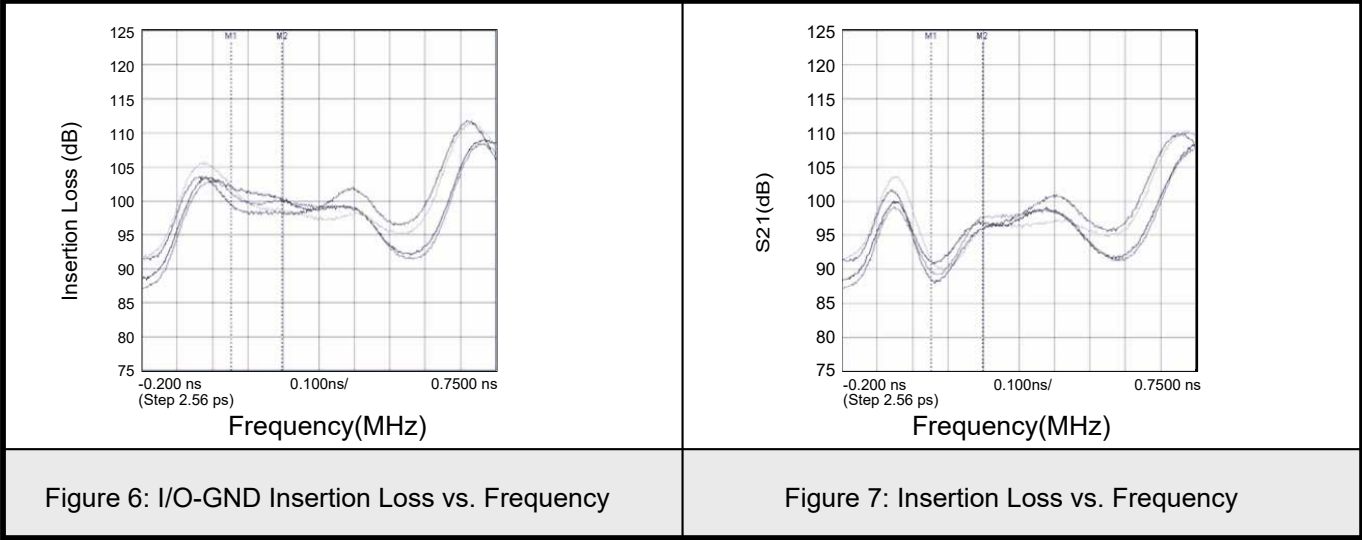


8.1Typical characteristic



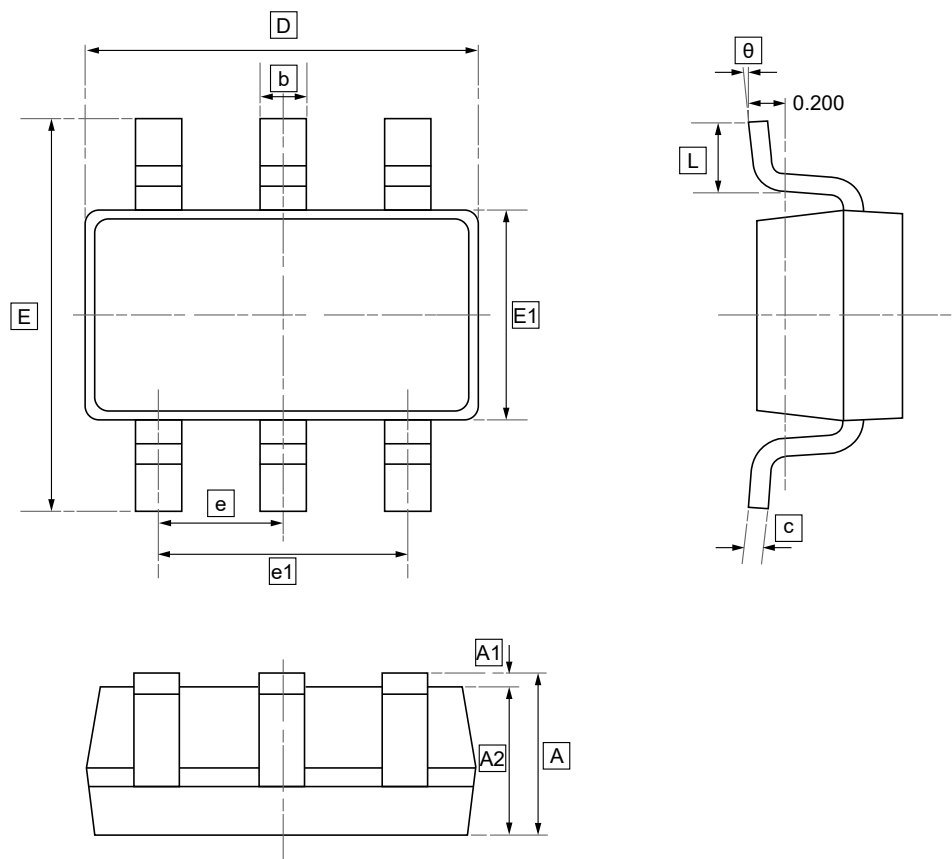


8.2Typical characteristic





9.SOT23-6 Package Outline Dimensions

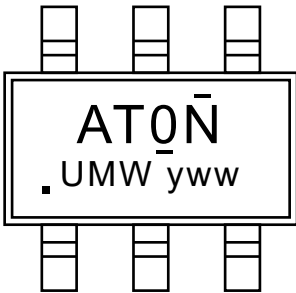


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°



10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW AOZ8905CI	SOT23-6	3000	Tape and reel



11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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