TVW MSOP 06 AD0 Engineering Specification

1. Scope

The TVW MSOP 06 AD0 is a 6-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails.

In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.

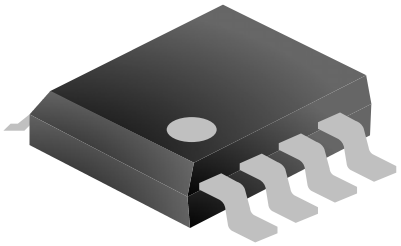
The TVW MSOP 06 AD0 is idea to protect high speed data lines.

2. Explanation of Part Number

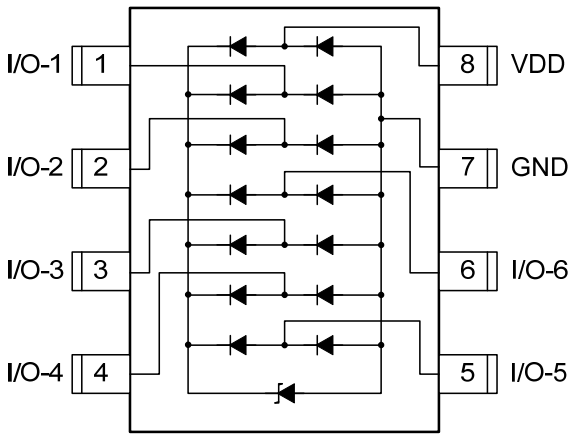
TV	W	MSOP	06	AD0
(1)	(2)	(3)	(4)	(5)

(1) Product Type：TV=TVS Diode
(2) Capacitance Code：W=Ultra Low Capacitance
(3) Package Size Code
(4) Channel Code：06=6 Channels
(5) Specialized Specification Code

3. Circuit Diagram /Pin Configuration



MSOP-8-0.65



MSOP-8-0.65
(Top view)

4. Specifications

4.1. ABSOLUTE MAXIMUM RATINGS

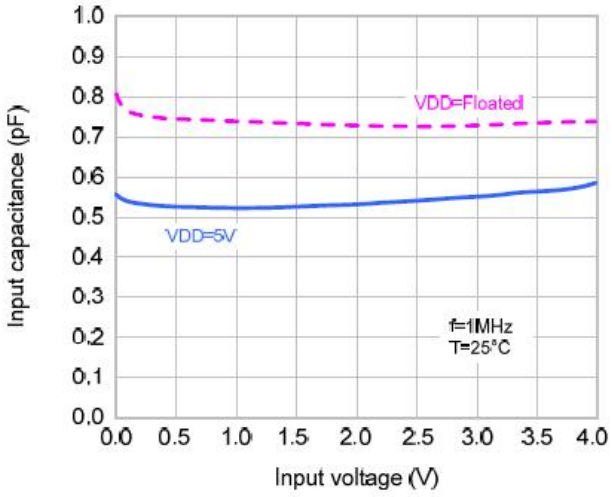
PARAMETER	PARAMETER	RATING	UNITS
Peak Pulse power (tp = 8/20μs)	P_{pp}	150	W
Peak Pulse current (tp = 8/20μs)	I_{pp}	5	A
Operating Supply Voltage (VDD-GND)	V_{DC}	5	V
ESD per IEC 61000-4-2 (Air) (I/O pins) ESD per IEC 61000-4-2 (Contact) (I/O pins)	V_{ESD_IO}	15 8	kV
Lead Soldering Temperature	T_{SOL}	260 (10 sec.)	°C
Operating Temperature	T_{OP}	-55 to +125	°C
Storage Temperature	T_{STO}	-55 to +150	°C

4.2. ELECTRICAL CHARACTERISTICS (T=25 °C)

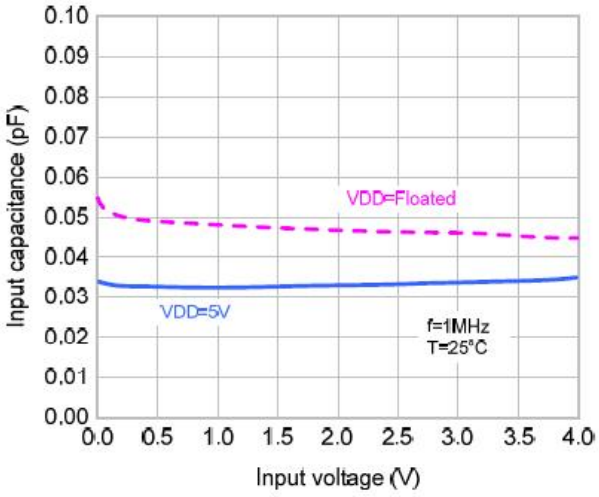
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Reverse Stand-Off Voltage	V_{RWM}	Any I/O pin to Ground			5	V
Reverse Leakage Current	I_{Leak}	V_{RWM} = 5V, Any I/O pin to Ground			1	μA
Reverse Breakdown Voltage	V_{BV}	I_{BV} = 1mA, Any I/O pin to Ground	6			V
ESD Clamping Voltage –I/O	V_{C1}	I_{PP}=1A, t_P=8/20μS, Any I/O pin to Ground		8.5	12	V
Reverse ESD Clamping Voltage –I/O	V_{C2}	I_{PP}=1A, t_P=8/20μS, Any I/O pin to Ground		1.8		V
Channel to Channel Input Capacitance	C_{J1}	V_R=0V, f=1MHz		0.2	0.25	pF
Channel I/O to GND Capacitance	C_{J2}	V_R=0V, f=1MHz, Any I/O pin to Ground			0.4	pF

4.3. TYPICAL CHARACTERISTICS

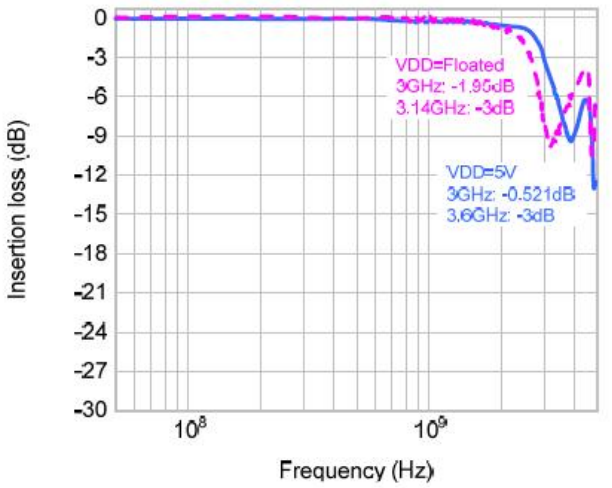
Typical curve of C_{IN} following V_{IN}



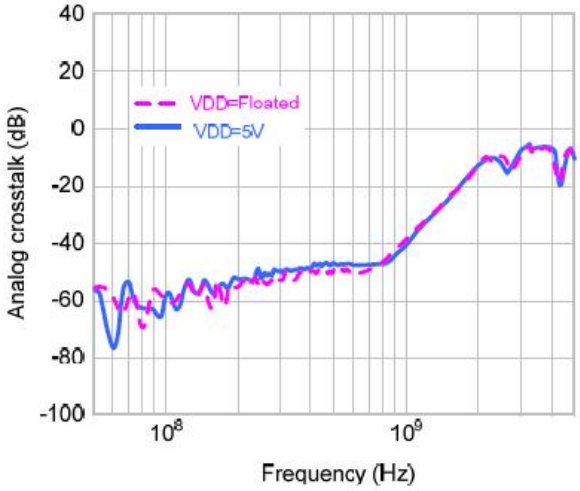
Typical curve of $C_{IO\text{-}to\text{-}IO}$ following V_{IN}



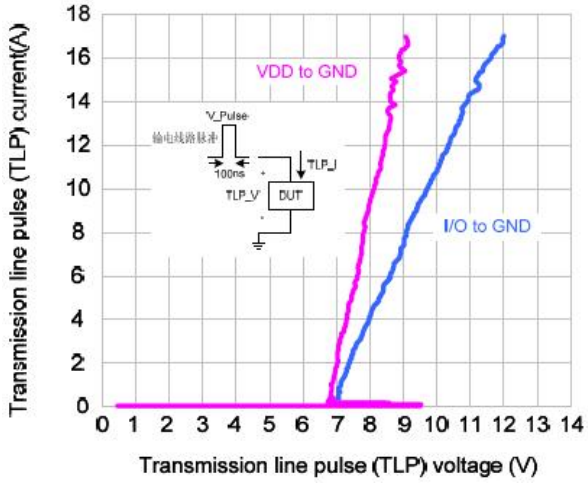
Insertion loss S21(I/O-to-GND)



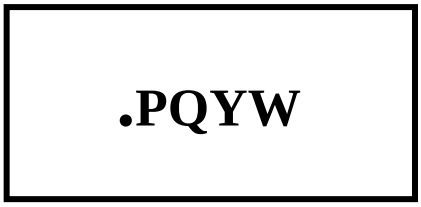
Analog crosstalk



Transmission line pulse (TLP)



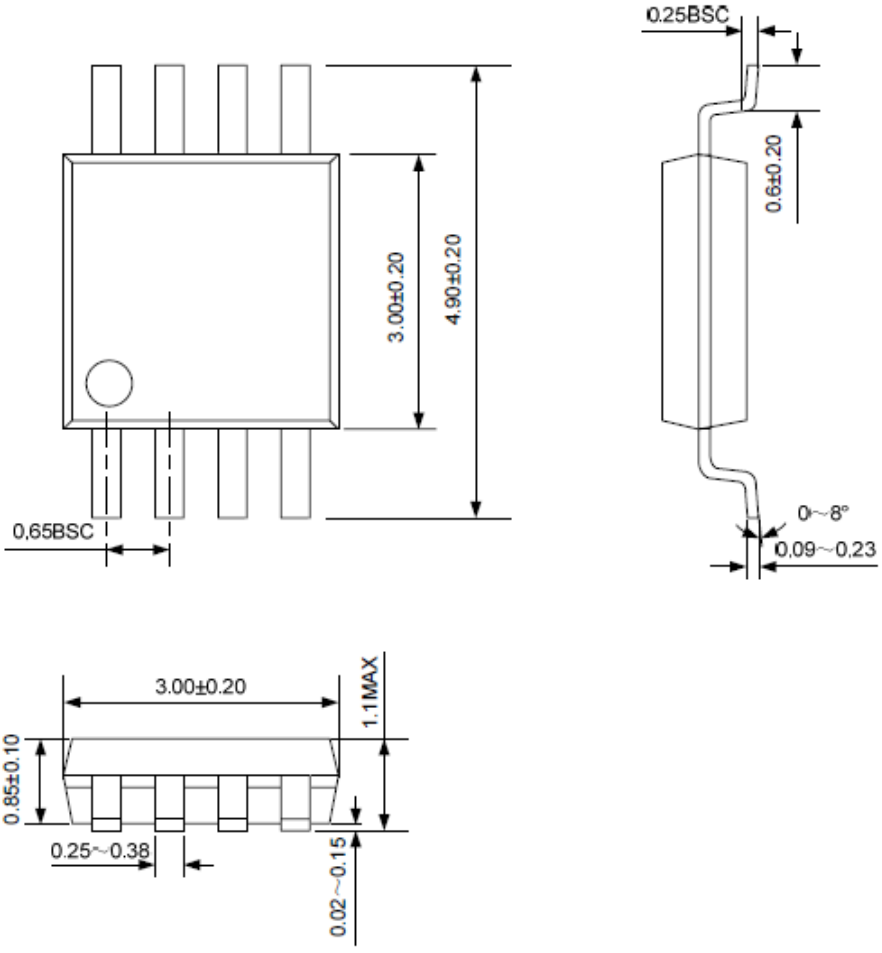
5. Marking code



PQ : Device Code

YW : Date Code (Y = year , W = week)

6. Mechanical Details



6.1. Taping Quantity:

3,000pcs/ Reel (for 7” Reel)