



AOS
SEMICONDUCTOR

产品规格说明书

Product Data Sheet

AOS1G34XX

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电源管理IC



通信接口芯片



二三极管



LDO稳压器



逻辑器件



MOSFETs



运算放大器



显示驱动



MCU单片机



光电器件

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Logic Gates

General Description

The AOS1G34XX is a single buffer operating from a 1.65V to 5.5V supply. The device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive, which maintaining low static power dissipation.

Features

- Tiny SC70-5 and SOT23-5 Packages
- Source/Sink 24mA at 3.0V
- Over-Voltage Tolerant Inputs
- Designed for 1.65V to 5.5V V_{cc} Operation
- These Devices are Pb-Free and are RoHS Compliant Pin Configuration

Pin Configuration

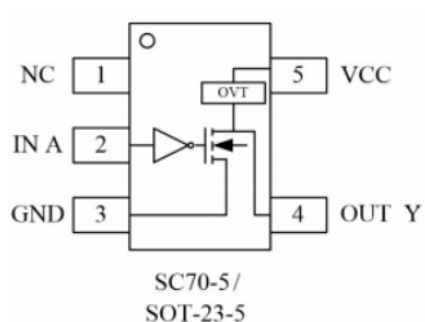


Figure1:Pinouts(Top View)

Pin Function

(SC70-5/SOT23-5)

PIN	FUNCTION
1	NC
2	INA
3	GND
4	Y
5	V_{cc}



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■ Block Diagram

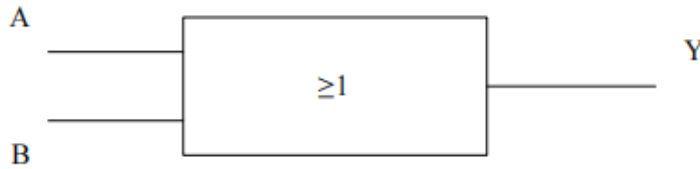


Figure 2:Logic symbol

■ Function Description

Function Table

Output Y=A	
A	Y
L	L
H	H

■ Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	-0.5 to 7.0	V
V_I	DC Input Voltage	$-0.5 \leq V_I \leq +7.0$	
V_O	DC Output Voltage Output in Higher or Low State	-0.5 to $V_{CC}+0.5$	
V_{IK}	DC Input Diode Current $V_I < GND$	-50	mA
V_{OK}	DC Output Diode Current $V_O < GND, V_O > V_{CC}$	± 50	
I_O	DC Output Sink Current	± 50	
I_{CC}	DC Supply Current per Supply Pin	± 100	
I_{GND}	DC Ground Current per Supply Pin	± 100	$^{\circ}C$
T_{STG}	Storage Temperature Range	-65 to 150	
T_L	Lead Temperature, 1mm from Case for 10 Seconds	260	
T_J	Junction Temperature Under Bias	150	
θ_{JA}	Thermal Resistance Time SC70-5 SOT23-5	435 300	$^{\circ}C/W$
P_D	Power Dissipation in Still Air at 85 $^{\circ}C$	200	mW
MSL	Moisture Sensitivity	Level 1	
ESD	ESD Classification Human Body Model(Note2) Machine Model(Note3) Charged Device Model(Note4)	2000 200 N/A	V
$I_{Latchup}$	Latch Performance Above V_{CC} and Below GND at 125 $^{\circ}C$ (Note5)	± 100	mA



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Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of those limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. IO absolute maximum rating must be observed.
2. Tested to EIA/JESD22-A114-A, rated to EIA/JESD22-A114-B.
3. Tested to JESD22-C101-A.
4. Tested to EIA/JESD78.

Recommended Operating Condition

Symbol	Parameter	Min	Max	Unit
V_{CC}	DC Supply Voltage	1.65 1.5	5.5 5.5	V
V_{IN}	DC Input Voltage	0	5.5	
V_{OUT}	DC Output Voltage Output in Higher or Low State	0	5.5	
T_A	Operating Temperature Range	-40	85	°C
t_r, t_f	Input Rise and Fall Time $V_{CC}=2.5V \pm 0.2V$ $V_{CC}=3.0V \pm 0.3V$ $V_{CC}=5.0V \pm 0.5V$	0 0 0	20 10 5	ns/V

Electrical Characteristics

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	$V_{CC}(V)$	$T_A=25^\circ C$			$-40^\circ C \leq T_A \leq 85^\circ C$		Unit
				Min	Typ	Max	Min	Max	
V_{IH}	High-Level Input Voltage		-1.65 to 1.95 2.3 to 5.5	$0.75V_{CC}$ $0.7V_{CC}$			$0.75V_{CC}$ $0.7V_{CC}$		V
V_{IL}	Low-Level Input Voltage		-1.65 to 1.95 2.3 to 5.5			$0.25V_{CC}$ $0.3V_{CC}$		$0.25V_{CC}$ $0.3V_{CC}$	
V_{OH}	High-Level Output Voltage	$I_{OH}=-100 \mu A$	-1.65 to 5.5	$V_{CC}-0.1$	V_{CC}		$V_{CC}-0.1$		
		$I_{OH}=-3mA$	1.65	1.29	1.52		1.29		
		$I_{OH}=-8mA$	2.3	1.9	2.1		1.9		
		$I_{OH}=-12mA$	2.7	2.2	2.4		2.2		
		$I_{OH}=-16mA$	3.0	2.4	2.7		2.4		
		$I_{OH}=-24mA$	3.0	2.3	2.5		2.3		
		$I_{OH}=-32mA$	4.5	3.8	4.0		3.8		



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(续上表)

参数	标识	测试条件	V_{CC}	$T_A=25^{\circ}\text{C}$			$-40^{\circ}\text{C}\leq T_A\leq 85^{\circ}\text{C}$		单位
				最小	标准	最大	最小	最大	
V_{OL}	Low-Level Output Voltage	$I_{OH}=100\mu\text{A}$	-1.65 to 5.5		0.0	0.1		0.1	V
		$I_{OH}=3\text{mA}$	1.65		0.08	0.24		0.24	
		$I_{OH}=8\text{mA}$	2.3		0.20	0.3		0.3	
		$I_{OH}=12\text{mA}$	2.7		0.22	0.4		0.4	
		$I_{OH}=16\text{mA}$	3.0		0.28	0.4		0.4	
		$I_{OH}=24\text{mA}$	3.0		0.38	0.55		0.55	
		$I_{OH}=32\text{mA}$	4.5		0.42	0.55		0.55	
I_{IN}	Input Leakage Current	$V_{IN}=5.5\text{V}$ or GND	0 to 5.5		± 0.1			± 1.0	μA
I_{OFF}	Power Off Leakage Current	$V_{IN}=5.5\text{V}$ or GND	0			1		10	
I_{CC}	Quiescent Supply Current	$V_{IN}=5.5\text{V}$ or GND	5.5					10	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

■ AC ELECTRICAL CHARACTERISTICS

 $t_r=t_f=3\text{ns}$

Symbol	Parameter	Condition	$V_{CC}(\text{V})$	$T_A=25^{\circ}\text{C}$			$-40^{\circ}\text{C}\leq T_A\leq 85^{\circ}\text{C}$		Unit
				Min	Typ	Max	Min	Max	
t_{PD}	Propagation Delay (Figure3 and Figure4)	$R_L=1\text{M}\Omega$ $C_L=15\text{pF}$	1.65	2.0	10.1	12.9	2.0	13.9	ns
			1.8	2.0	9.1	11.6	2.0	12.4	
		$R_L=1\text{M}\Omega$ $C_L=15\text{pF}$	2.5	0.2	6.0	7.7	0.8	8.2	
		$R_L=1\text{M}\Omega$ $C_L=15\text{pF}$	3.3	0.8	5.0	6.5	0.5	7.0	
		$R_L=500\Omega$ $C_L=50\text{pF}$		1.2	5.6	7.1	1.5	7.6	
		$R_L=1\text{M}\Omega$ $C_L=15\text{pF}$	5.0	0.5	4.4	5.6	0.5	6.1	
		$R_L=500\Omega$ $C_L=50\text{pF}$		0.8	4.8	6.1	0.8	6.6	



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CAPACITIVE CHARACTERISTICA

Symbol	Parameter	Condition	Typical	Unit
C_{IN}	Input Capacitance	$V_{CC}=5.5V, V_I=0$ or V_{CC}	>2.5	pF
C_{PD}	Power Dissipation Capacitance(Note6)	10MHz, $V_{CC}=3.3V, V_I=0$ or V_{CC} 10MHz, $V_{CC}=5.5V, V_I=0$ or V_{CC}	21 21	pF

6. C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load. Average operating current can be obtained by the equation:

$I_{CC(OPR)} = C_{PD} \cdot V_{CC} \cdot f_{in} + I_{CC} \cdot C_{PD}$ is used to determine the no-load dynamic power consumption; $P_D = C_{PD} \cdot V_{CC}^2 \cdot f_{in} + I_{CC} \cdot V_{CC} \cdot Fig.$

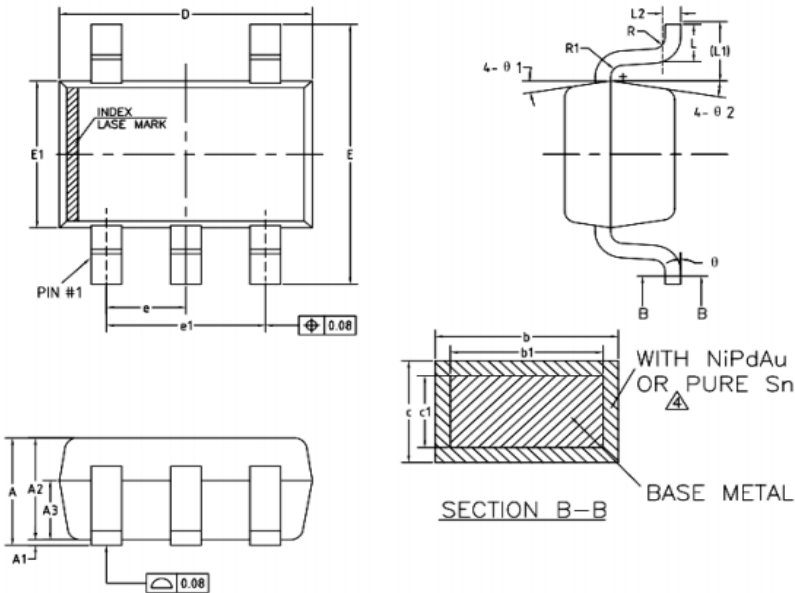


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Package Dimensions

SC70-5



COMMON DIMENSIONS(UNITS OF MEASURE=MILLINETER)

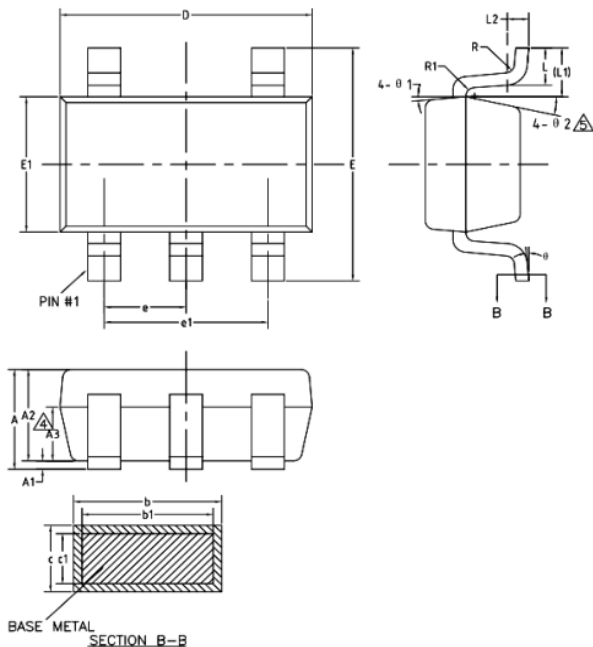
SYMBOL		MIN	NOM	MAX
A		0.85	-	1.05
A1		0	-	0.10
A2		0.80	0.90	1.00
A3		0.47	0.52	0.57
b	NiPdAu	0.22	-	0.29
	PURE Sn	0.23	-	0.33
b1		0.22	0.25	0.28
c	NiPdAu	0.115	-	0.15
	PURE Sn	0.12	-	0.18
c1		0.115	0.13	0.14
D		2.02	2.07	2.12
E		2.20	2.30	2.40
E1		1.25	1.30	1.35
e		0.60	0.65	0.70
e1		1.20	1.30	1.40
L		0.28	0.33	0.38
L1		0.50REF		
L2		0.15BSC		
R		0.10	-	-
R1		0.10	-	0.25
θ		0 °	-	8 °
θ 1		6 °	9 °	12 °
θ 2		6 °	9 °	12 °



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SOT23-5



COMMON DIMENSIONS(UNITS OF MEASURE=MILLINETER)

SYMBOL	MIN	NOM	MAX
A	-	-	1.25
A1	0	-	0.15
A2	1.00	1.10	1.20
A3	0.60	0.65	0.70
b	0.36	-	0.50
b1	0.36	0.38	0.45
c	0.14	-	0.20
c1	0.14	0.15	0.16
D	2.826	2.926	3.026
E	2.60	2.80	3.00
E1	1.526	1.626	1.726
e	0.90	0.95	1.00
e1	1.80	1.90	2.00
L	0.35	0.45	0.60
L1	0.59REF		
L2	0.25BSC		
R	0.10	-	-
R1	0.10	-	0.25
θ	0 °	-	8 °
θ1	3 °	5 °	7 °
θ2	6 °	-	14 °



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■ Package Dimensions

Order code	Marking code	Package	Baseqty	Deliverymode
AOS1G34XF5	C34J	SOT23-5	3000	Tape and reel
AOS1G34XC5	C95	SC70-5	3000	Tape and reel

