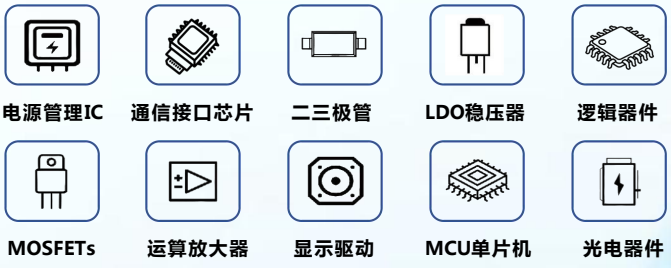
AOS SEMICONDUCTOR

产品规格说明书

Product Data Sheet

AOS1G04XX

WEB | www.aossemi.cn



AOS1G04XX

Data Sheet

Logic Gates

■ Product introduction

AOS1G04XX is a non integrated circuit,which can realize the mathematical logic operation of Y=A.It is design with advanced CMOS technology,which has the working characteristics of low power consumption and high output driving capability.The chip can work normally when the voltage of VCC is between 1.65V and 5.5V.And AOS1G04XX has a variety of small package shapes.It can be widely used in high-end precision instruments, miniaturized low-power handheld devices, artificial intelligence and other fields.

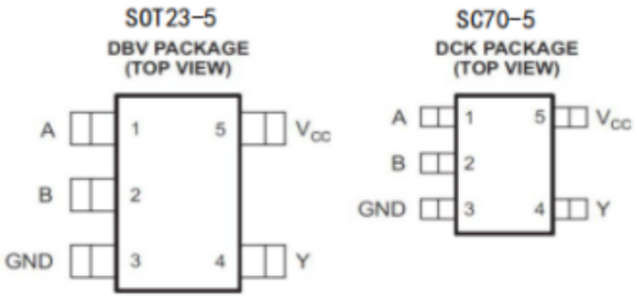
■ Product features

- Low input current:typical value 0.1uA
- Low static power consumption:0.1uA typical
- High output drive:VCC=4.5V,more than 32mA
- Wide working voltage range: 1.65V to 5.5V
- Package form:DBV/DCK

■ Product usage

- Portable audio interface
- Digital television
- Wireless headphones,smart watches, etc.
- Blu-ray player and home theater
- Solid state drive
- Intelligent wearable devices

■ Package form and pin function definition



	PIN				
NAME	DBV/DCK/DRL	DRY,DSF	YZP	DPW	Explain
NC	1	1,5	A1,A2	1	Empty feet
A	2	2	B1	2	Input
GND	3	3	C1	3	Power Ground
Y	4	4	C2	4	Output
VCC	5	6	A2	5	Power supply positive

Note:NC -Empty feet,no internal connection line.

AOS1G04XX

Data Sheet

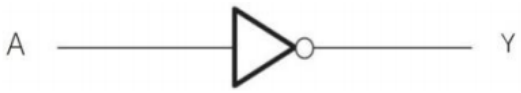
■ Limit parameter

Parameter	Symbol	Limit value	Unit
Working voltage	V_{CC}	6.5	V
Input	V_{IN}	-0.5~6.5	
Output Voltage(1)	V_{OUT}	-0.5~6.5	
Single pin output current	I_{OUT}	25	mA
VCC or GND current	I_{CC}	50	
Storage temperature	T_S	-65-150	℃
Pin welding temperature	T_W	260,10s	
Working temperatue	T_A	-40-105	

Note: 1. When VCC=0V,the limit voltage that the output can withstand.

2. The limit value of any parameter can not be exceeded.If the limit calue is exceeded,it may cause physical damage such as product deterioration.At the same time,the chip can't work normally when it is close to the limit parameters.

■ Principle logic diagram



■ Truth table

Input	Output
A	Y
L	H
H	L

AOS1G04XX

Data Sheet

■ Working conditions

Project	Symbol	Test condition	Minimum value	Typical value	Maximum	Unit
Working voltage	V_{CC}	-	1.65	-	5.5	V
Input high level voltage	V_{IH}	VCC=1.65V~1.95V	0.65*VCC	-	-	
		VCC=2.3V~2.7V	1.7V	-	-	
		VCC=3V~5.5V	0.7*VCC	-	-	
Low-Level Input Voltage	V_{IL}	VCC=1.65V~1.95V	-	-	0.35*VCC	
		VCC=2.3V~2.7V	-	-	0.7	
		VCC=3V~5.5V	-	-	0.3*VCC	
Input voltage	V_I	-	0	-	5.5	
Output voltage	V_O	-	0	-	VCC	
High level output	I_{OH}	VCC=1.65V	-	-	-4	mA
		VCC=2.3V	-	-	-8	
		VCC=3V	-	-	-16	
		VCC=4.5V	-	-	-32	
Low level output current	I_{OL}	VCC=1.65V	-	-	4	
		VCC=2.3V	-	-	8	
		VCC=3V	-	-	16	
		VCC=4.5V	-	-	32	

AOS1G04XX

Data Sheet

■ Electrical properties

DC electrical characteristics:TA=25℃

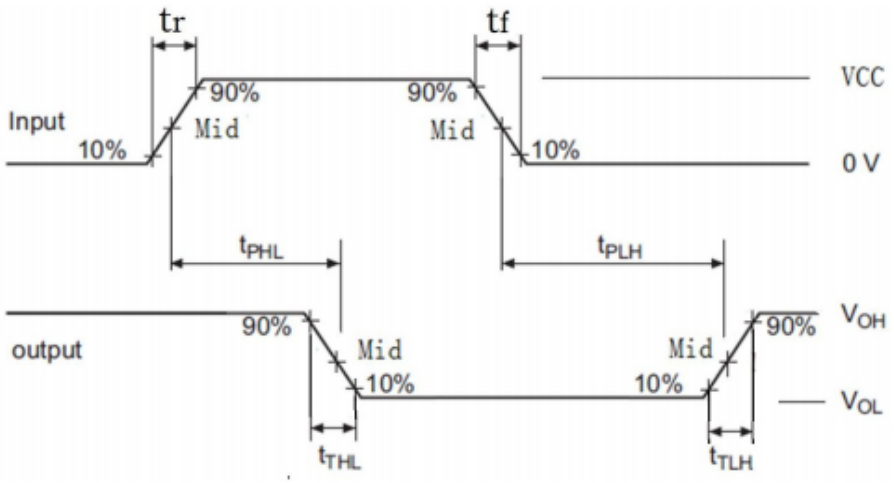
Project	Symbol		Test condition	Minimum value	Typical value	Maximum	Unit
High level voltage	V_{OH}		I_{OH}=-100μA	1.65V~5.5V	1.64	-	V
			I_{OH}=-4mA	1.65V	1.47	-	
			I_{OH}=-8mA	2.3V	2.15	-	
			I_{OH}=-16mA	3V	2.73	-	
			I_{OH}=-32mA	4.5V	4.0	-	
Low level load voltage	V_{OL}		I_{OH}=100μA	1.65V~5.5V	0.01	-	
			I_{OH}=4mA	1.65V	0.11	-	
			I_{OH}=8mA	2.3V	0.11	-	
			I_{OH}=16mA	3V	0.2	-	
			I_{OH}=32mA	4.5V	0.35	-	
Input current	I_I	A	V_I=5.5V或GND	0~5.5V	0.01	±5	μA
Turn off current	I_{OFF}	V_I	V_I=5.5V	0	0.01	±10	
		V_O	V_O=5.5V	0	0.01	±10	
Working current	I_{CC}		V_I=5.5V, I_O=0	1.65V~5.5V	0.01	10	
			V_I=GND, I_O=0		0.01	10	
Working current variation	ΔI_{CC}		A=V_{CC}-0.6V	3V~5.5V	25	-	

AC electrical characteristics:TA=25℃ VCC=5.0V,TR=≤20ns,see test method.

Project	Symbol	Test condition	Minimum value	Typical value	Maximum	Unit
Maximum transmission delay time a,B to Y	t_{PHL}	C_I=15pF	-	10	-	ns
	t_{PLH}	C_L=15pF	-	10	-	ns

AOS1G04XX

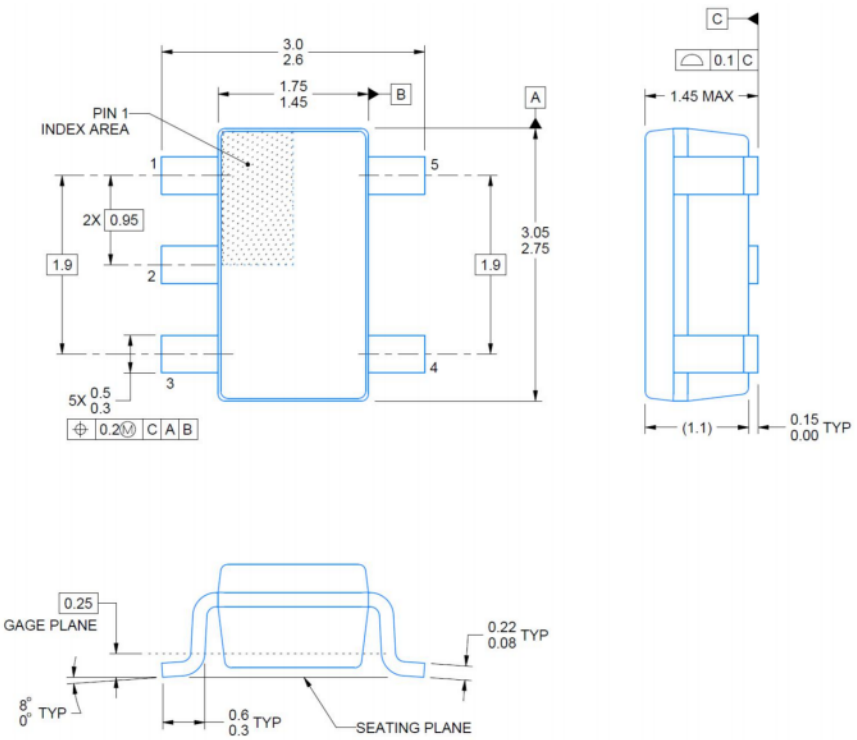
Data Sheet



Note: 1. CL capacitor is external chip capacitor (0603), which is connected close to the output pin,and the capacitance ground is close to the chip GND;
2. Input: port input level,f=500kHz,D=50%;tr=tf≤20ns;
3. Output: y-end output test.

■ Encapsulated information

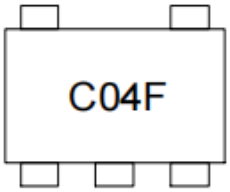
DBV(SOT23-5) Unit:mm/in



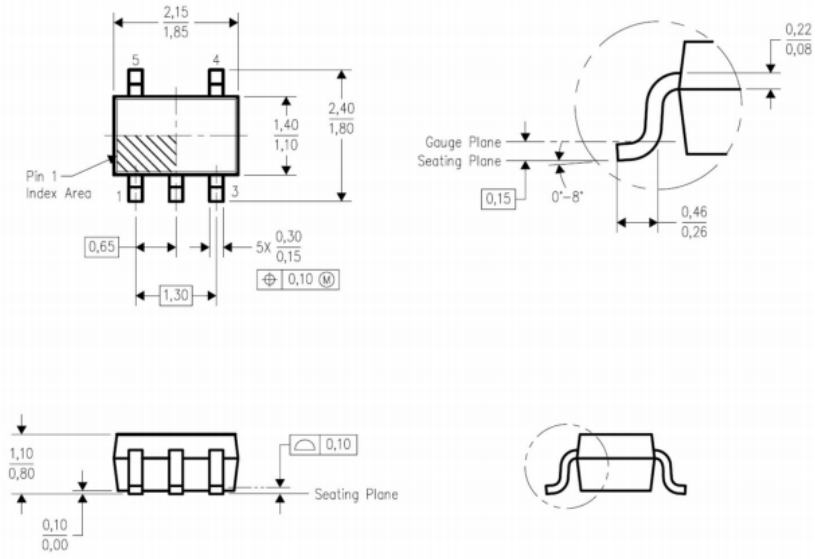
AOS1G04XX

Data Sheet

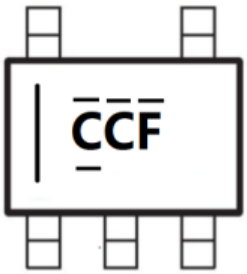
■ Marking



DCK(SC70-5)



■ Marking



Order code	Package	Baseqty	Deliverrymode
AOS1G04XF5	SOT23-5	3000	Tape and reel
AOS1G04XC5	SC70-5	3000	Tape and reel