



AOS
SEMICONDUCTOR

产品规格说明书

Product Data Sheet

SN74AUP2G17

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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

SN74AUP2G17

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Logic Gates

Description

The SN74AUP2G17 is a high performance dual buffer operating from a 0.8V to 3.6V supply. This device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive.

Features

- Designed for 0.8V to 3.6V V_{cc} Operation
- Low static power consumption; $I_{cc}=0.7\mu A$ (maximum)
- 4mA Balanced Output Sink and Source Capability
- Near Zero Static Supply Current Substantially Reduces System Power Requirements
- These Devices are Pb-Free and are RoHS Compliant

Pin Configuration

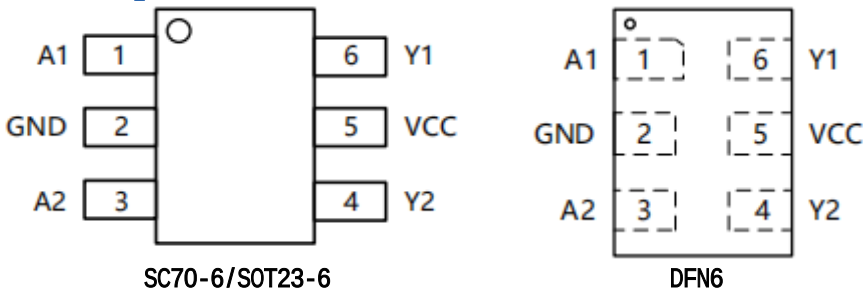


Figure1.Top View

Pin Function

SC70-6/SOT23-6

Pin No.	Function
1	A1
2	GND
3	A2
4	Y2
5	VCC
6	Y1

DFN6

Pin No.	Function
1	A1
2	GND
3	A2
4	Y2
5	VCC
6	Y1

Block Diagram

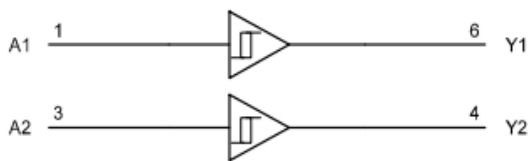


Figure2.Logic Symbol

Function Description

Function Table

A Input	Y Output
H	H
L	L



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■ Absolute Maximum Ratings

Symbol	Parameter		Value	Unit
V _{CC}	DC Supply Voltage		-0.5 to 4.6	V
V _I	DC Input Voltage		-0.5≤V _I ≤+4.6	
V _O	DC Output Voltage Output in Higher or Low State ⁽¹⁾		-0.5 to 4.6	
I _{IK}	DC Input Diode Current V _I <GND		-50	mA
I _{OK}	DC Output Diode Current, V _O <GND, V _O >V _{CC}		± 50	
I _O	DC Output Sink Current		± 20	
I _{CC}	DC Supply Current per Supply Pin		± 50	
I _{GND}	DC Ground Current per Supply Pin		± 50	
T _{STG}	Storage Temperature Range		-65 to 150	°C
T _L	Lead Temperature, 1mm from Case for 10 Seconds		260	
T _J	Junction Temperature Under Bias		150	
P _D	Power Dissipation in Still Air at 85°C		200	mW
V _{ESD}	ESD Classification	Human Body Model	± 4000	V
		Machine Model	± 200	
		Charged Device Model	± 1000	
L _{LU}	Max Latch up Current Above V _{CC} and GND at 125°C		± 100	mA

■ Recommended Operating Conditions

Symbol	Parameter	MIN	MAX	UNIT
V_{CC}	DC Supply Voltage Operating	0.8	3.6	V
V_{IN}	DC Input Voltage	0	3.6	
V_{OUT}	DC Output Voltage(High or Low State)	0	3.6	
T_A	Operating Temperature Range	-40	85	°C
t_r, t_f	Input Rise and Fall Time	$V_{CC}=0.8V$ to $3.6V$		ns/V

Function operation above the stresses listed in the Recommended Operating Ranges is not implied.



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Electrical Characteristics DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	V _{cc} (V)	T _A =25°C			-40°C ≤ T _A ≤ 85°C		Unit
				Min	Typ	Max	Min	Max	
V _{IH}	High-Level Input Voltage		0.8V	0.75V _{cc}			0.75V _{cc}		V
			0.9V to 1.95V	0.7V _{cc}			0.7V _{cc}		
			2.3V to 2.7V	1.6			1.6		
			3.0V to 3.6V	2.0			2.0		
V _{IL}	Low-Level Input Voltage		0.8V			0.25V _{cc}		0.25V _{cc}	
			0.9V to 1.95V			0.3V _{cc}		0.3V _{cc}	
			2.3V to 2.7V			0.7		0.7	
			3.0V to 3.6V			0.9		0.9	
V _{OH}	High-Level Output Voltage	I _{OH} =-20 μA	0.8 to 3.6V	V _{cc} -0.1			V _{cc} -0.1		
		I _{OH} =-1.1mA	1.1	0.82	1.02		0.77		
		I _{OH} =-1.7mA	1.4	1.11	1.32		1.03		
		I _{OH} =-1.9mA	1.65	1.32	1.58		1.30		
		I _{OH} =-2.3A	2.3	2.05	2.24		1.97		
		I _{OH} =-3.1mA		1.9	2.22		1.85		
		I _{OH} =-2.7mA	3.0	2.72	2.95		2.67		
		I _{OH} =-4.0mA		2.6	2.92		2.55		
V _{OL}	Low-Level Output Voltage	I _{OL} =20 μA	0.8 to 3.6V			0.1		0.1	μA
		I _{OL} =1.1mA	1.1		0.11	0.33		0.33	
		I _{OL} =1.7mA	1.4		0.12	0.31		0.37	
		I _{OL} =1.9mA	1.65		0.11	0.31		0.35	
		I _{OL} =2.3mA	2.3		0.14	0.31		0.33	
		I _{OL} =3.1mA			0.19	0.44		0.45	
		I _{OL} =2.7mA	3.0		0.11	0.31		0.33	
		I _{OL} =4.0mA			0.16	0.44		0.45	
I _{IN}	Input Leakage Current	V _{IN} =V _{cc} or GND	0 to 3.6V			± 0.1		± 0.2	
I _{OFF}	Power Off Leakage Current	V _{IN} =3.6V or V _{OUT} =3.6V	0			± 0.2		± 0.5	
I _{CC}	Quiscent Supply Current	V _{IN} =3.6V or GND	3.6			± 0.2		± 0.7	



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■ AC ELECTRICAL CHARACTERISTICS tr=tf=2.5ns

Symbol	Parameter	Condition	V _{cc} (V)	T _A =25			-40 ≤ T _A ≤ 85		Unit
				Min	Typ	Max	Min	Max	
t _{PLH} t _{PHL}	Propagation Delay (Figure 3 and 4)	C _L =5pF ⁽⁶⁾	0.8	13.2	29	90.1	11.9	220	ns
			1.2	5.0	7.6	14.3	4.6	14.4	
			1.5	3.4	4.8	8.9	3	9.6	
			1.8	2.7	3.6	6.9	2.3	7.6	
			2.5	1.9	2.4	5.1	1.6	5.6	
			3.3	1.5	1.9	4.4	1.3	4.8	
		C _L =10pF ⁽⁶⁾	0.8	14.3	31.3	97.9	12.8	239	
			1.2	5.4	8.3	15.3	5.0	15.3	
			1.5	3.7	5.2	9.5	3.2	10.2	
			1.8	2.9	3.9	7.4	2.5	8.1	
			2.5	2.0	2.6	5.4	1.7	6.0	
			3.3	1.6	2.0	4.6	1.3	5.1	
		C _L =15pF ⁽⁶⁾	0.8	15.3	32.5	106	13.8	259	
			1.2	5.8	8.9	16.3	5.3	16.3	
			1.5	4.0	5.6	10.1	3.5	10.9	
			1.8	3.1	4.2	7.8	2.6	8.6	
			2.5	2.1	2.8	5.8	1.8	6.4	
			3.3	1.7	2.2	4.9	1.4	5.4	
		C _L =30pF ⁽⁶⁾	0.8	18.3	37.5	130	16.6	323	
			1.2	7.0	10.7	19.3	6.4	19.3	
			1.5	4.8	6.9	12.0	4.2	12.9	
			1.8	3.7	5.1	9.2	3.2	10.2	
			2.5	2.6	3.5	6.7	2.2	7.5	
			3.3	2.0	2.2	5.6	1.7	6.3	

Note6. C_L includes probe and jig capacitance.



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■ CAPACITIVE CHARACTERISTICS

Symbol	Parameter	Condition		Typical	Unit
C_{IN}	Input Capacitance	$V_{CC}=3.6V, V_I=0V$ or V_{CC}		2	pF
C_O	Output Capacitance	$V_{CC}=0V, V_{OUT}=GND$		3	
C_{PD}	Power Dissipation Capacitance ⁽⁷⁾	1MHz, $V_I=0V$ to V_{CC}	$V_{CC}=0.8V$	7.6	
			$V_{CC}=1.2V$	8.1	
			$V_{CC}=1.5V$	8.5	
			$V_{CC}=1.8V$	8.6	
			$V_{CC}=2.5V$	9.0	
			$V_{CC}=3.3V$	9.6	

Note7. C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load.

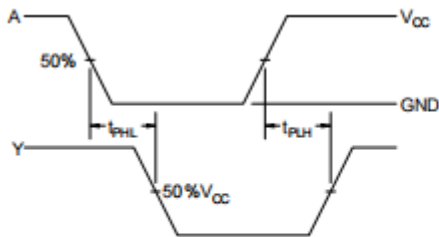


Figure 3. Switching Waveforms

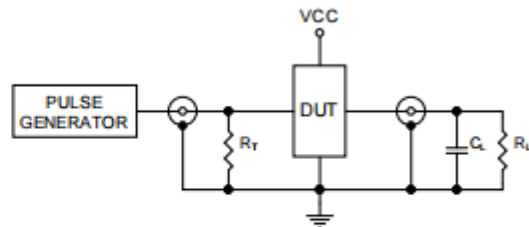


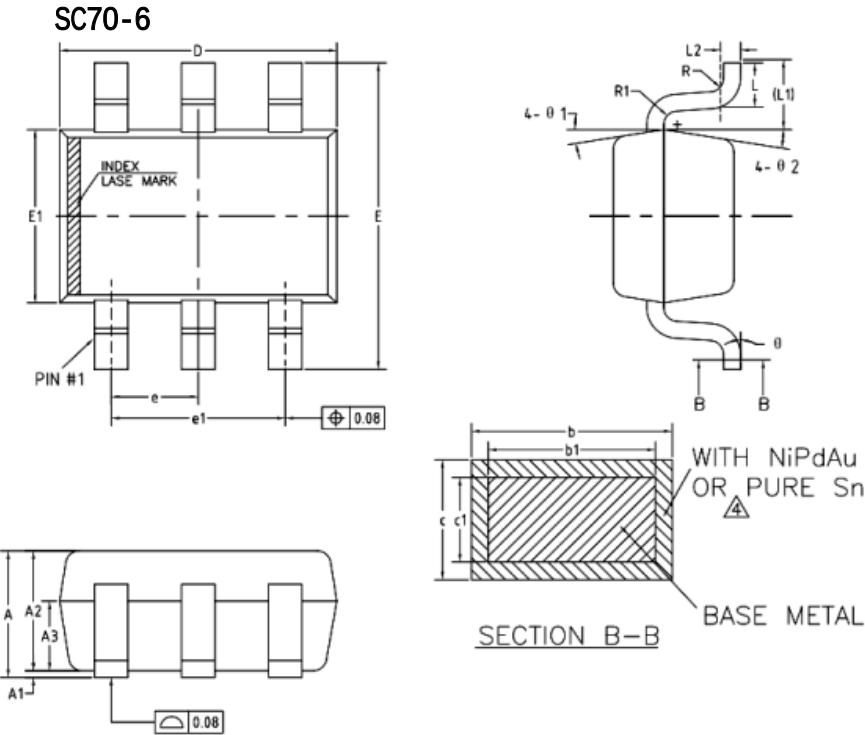
Figure 4. Test Circuit



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Package Dimension



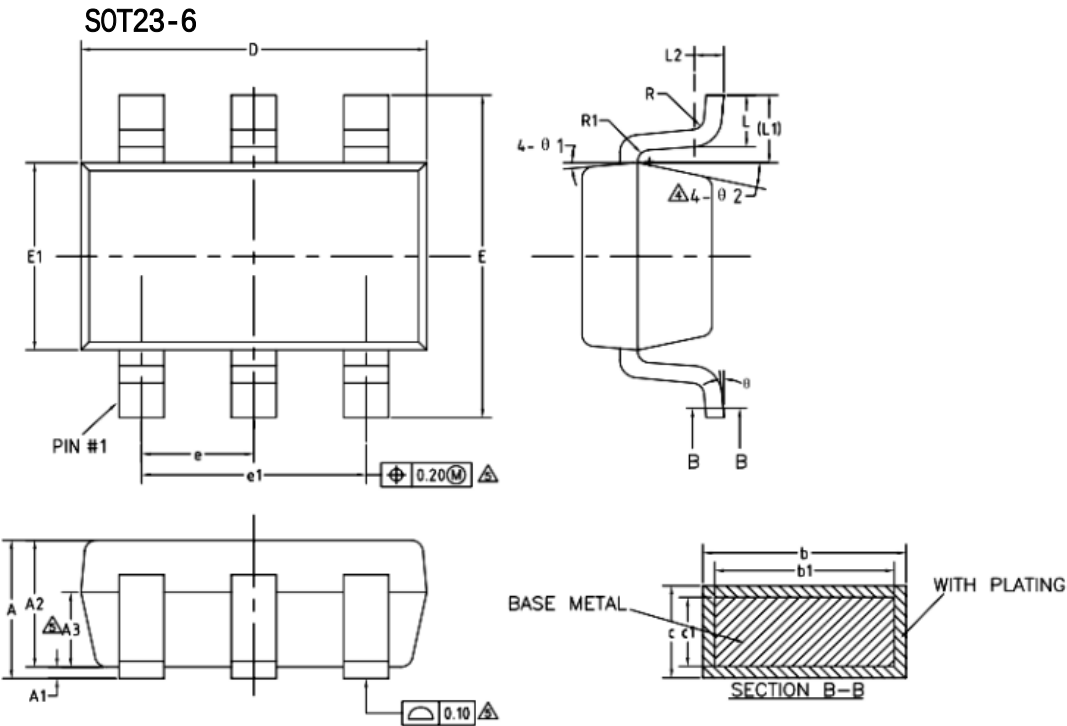
COMMON DIMENSIONS(UNITS OF MEASURE=MILLINETER)

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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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	-	0.20
θ	0°	-	8°
$\theta 1$	3°	5°	7°
$\theta 2$	6°	-	14°



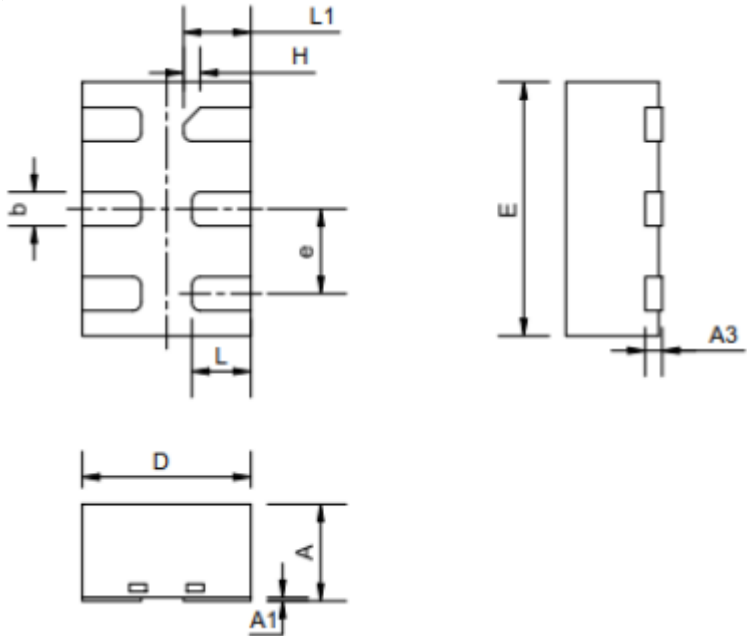
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Logic Gates

Product Specification

DFN6(1.0×1.5)



COMMON DIMENSIONS(UNITS OF MEASURE=MILLINETER)

SYMBOL	MIN	NOM	MAX
A	0.50	-	0.60
A1	0	0.02	0.05
A3	0.10REF		
b	0.15	0.20	0.25
D	0.90	1.00	1.10
E	1.40	1.50	1.60
e	0.40	0.50	0.60
H	0.10REF		
L	0.30	0.35	0.40
L1	0.35	0.40	0.45

■ Ordering information

Order code	Package	Baseqty	Deliverymode	Marking code
SN74AUP2G17DBVR	SOT23-6	3000	Tape and reel	HL5 U
SN74AUP2G17DCKR	SC70-6	3000	Tape and reel	HL U
SN74AUP2G17DRYR	DFN6	5000	Tape and reel	HL U

