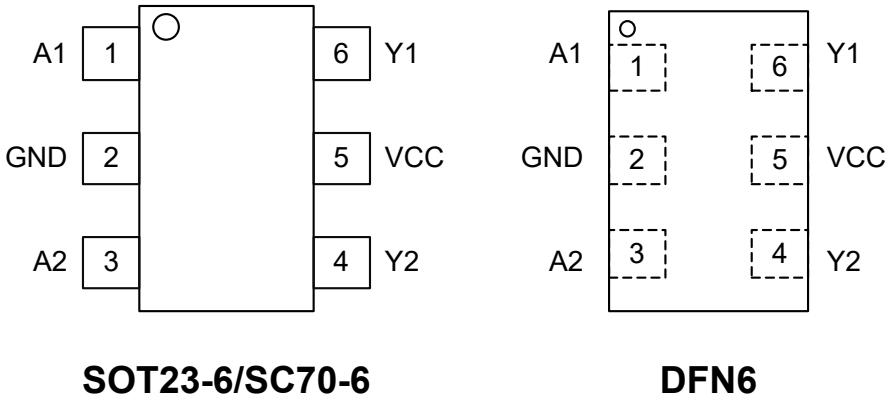
1.Description

The 74AUP2G17 is a high performance dual buffer operating from a 0.8 to 3.6V supply. This device is fabricated with advanced CMOS technology to achieve ultra-high speed with high output drive.

2.Features

- Designed for 0.8V to 3.6V V_{CC} Operation
- Low static power consumption; I_{CC}=0.7μA (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

3.Pinning information



SOT23-6/SC70-6 **DFN6**

Figure1. Top View

4.Pin Function

Pin No.		Function
SC70-6/SOT23-6	DFN6	
1	1	A1
2	2	GND
3	3	A2
4	4	Y2
5	5	VCC
6	6	Y1

5.Block Diagram

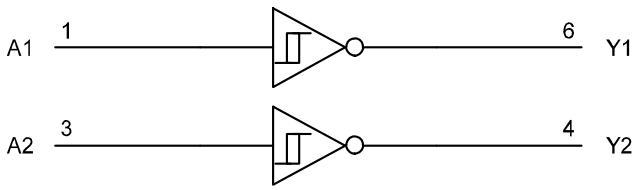


Figure2.

Function Table

Input	Output
A	**Y**
H	H
L	L

6.Absolute Maximum Ratings

Parameter		Symbol	Value	Units
DC Supply Voltage		V_{CC}	−0.5 to 4.6	V
DC Input Voltage		V_I	$-0.5 \le V_I \le 4.6$	V
DC Output Voltage Output in Higher or Low State (1)		V_O	−0.5 to 4.6	V
DC Input Diode Current V_I<GND		I_{IK}	-50	mA
DC Output Diode Current V_O<GND, V_O>V_{CC}		I_{OK}	±50	mA
DC Output Sink Current		I_O	±20	mA
DC Supply Current per Supply Pin		I_{CC}	±50	mA
Storage Temperature Range		T_{STG}	-65 to 150	°C
Lead Temperature, 1 mm from Case for 10 Seconds		T_L	260	°C
Junction Temperature Under Bias		T_J	150	°C
Power Dissipation in Still Air at 85°C		P_D	200	mW
ESD Classification	Human Body Model (2)	V_{ESD}	±4000	V
	Machine Model (3)		±200	V
	Charged Device Model (4)		±1000	V
Latchup Current Above V_{CC} and GND at 125°C (5)		I_{LU}	±100	mA

7.Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
DC Supply Voltage Operating	V_{CC}	0.8	3.6	V
DC input Voltage	V_{IN}	0	3.6	V
DC Output Voltage (High or Low State)	V_{OUT}	0	3.6	V
Operating Temperature Range	T_A	-40	85	°C

Notes:

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

8.Electrical Characteristics

DC Electrical Characteristics

Parameter	Condition	Symbol	V_{CC}(V)	T_A=25°C			−40°C≤T_A≤85°C		Units
				Min	Typ	Max	Min	Max	
Forward input threshold voltage		V_{T+}	0.8	0.3		0.6	0.3	0.6	V
			1.1	0.53		0.9	0.53	0.9	
			1.4	0.74		1.11	0.74	1.11	
			1.65	0.91		1.29	0.91	1.29	
			2.3	1.37		1.77	1.37	1.77	
			3	1.88		2.29	1.88	2.29	
Negative input threshold voltage		V_{T-}	0.8	0.1		0.6	0.1	0.6	V
			1.1	0.26		0.65	0.26	0.65	
			1.4	0.39		0.75	0.39	0.75	
			1.65	0.47		0.84	0.47	0.84	
			2.3	0.69		1.04	0.69	1.04	
			3	0.88		1.24	0.88	1.24	
High−Level Output Voltage	I_{OH}=−20μA	V_{OH}	0.8 to 3.6	V_{CC}-0.1			V_{CC}-0.1		V
	I_{OH}=−1.1mA		1.1	0.82	1.02		0.77		
	I_{OH}=−1.7μA		1.4	1.11	1.32		1.03		
	I_{OH}=−1.9mA		1.65	1.32	1.58		1.30		
	I_{OH}=−2.3mA		2.3	2.05	2.24		1.97		
	I_{OH}=−3.1mA			1.9	2.22		1.85		
	I_{OH}=−2.7mA		3	2.72	2.95		2.67		
	I_{OH}=−4.0mA			2.6	2.92		2.55		

Parameter	Condition	Symbol	V_{CC}(V)	T_A=25°C			−40°C≤T_A≤85°C		Units
				Min	Typ	Max	Min	Max	
Low−Level Output Voltage	I_{OL}=20μA	V_{OL}	0.8 to 3.6			0.1		0.1	V
	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		0.11	0.31		0.33	
	I_{OL}=4.0mA				0.16	0.44		0.45	
Input Leakage Current	V_{IN}=V_{CC} or GND	I_{IN}	0 to 3.6			0.1		0.2	μA
Power Off Leakage Current	V_{IN}=3.6V or V_{OUT}=3.6V	I_{OFF}	0			0.2		0.5	μA
Quiescent Supply Current	V_{IN}=3.6V or GND	I_{CC}	3.6			0.2		0.7	μA

9.AC Electrical Characteristics

$t_r = t_f$ = 2.5ns

Parameter	Condition	Symbol	V_{CC}(V)	T_A=25°C			−40°C≤T_A≤85°C		Units
				Min	Typ	Max	Min	Max	
Propagation Delay (Figure3 And 4)	C_L=5pF (6)	t_{PHL} t_{PLH}	0.8	13.2	29	90.1	11.9	220	ns
			1.2	5	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	ns
			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.g	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	ns
			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	21	2.8	5.8	1.8	6.4	
			3.3	17	2.2	4.9	1.4	5.4	
	C_L=30pF (6)		0.8	18.3	37.5	130	16.6	323	ns
			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	

Notes: (6) C_L includes probe and jig capacitance.

10.Capacitance Characteristics

Parameter	Symbol	Condition		Typ	Units
Input Capacitance	C_{IN}	V_{CC}=3.6V, V_I= 0 V or V_{CC}		2	pF
output capacitance	C_O	V_{CC}= 0V, V_{OUT}=GND		3	pF
Power Dissipation Capacitance (7)	C_{PD}	1MHz, V_I=0 V to V_{CC}	V_{CC}=0.8V	7.6	pF
			V_{CC}=1.2V	8.1	
			V_{CC}=1.5V	8.5	
			V_{CC}=1.8V	8.6	
			V_{CC}=2.5V	9	
			V_{CC}=3.3V	9.6	

Notes:

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

11.AC Test Circuit

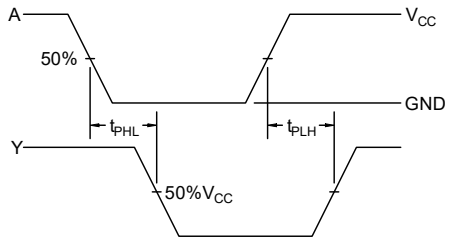


Figure 3. Switching Waveforms

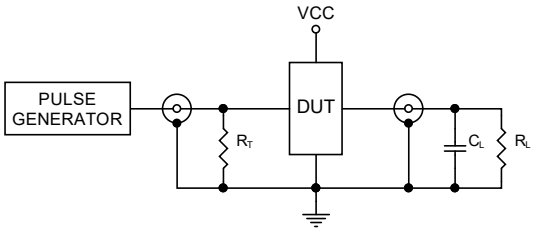
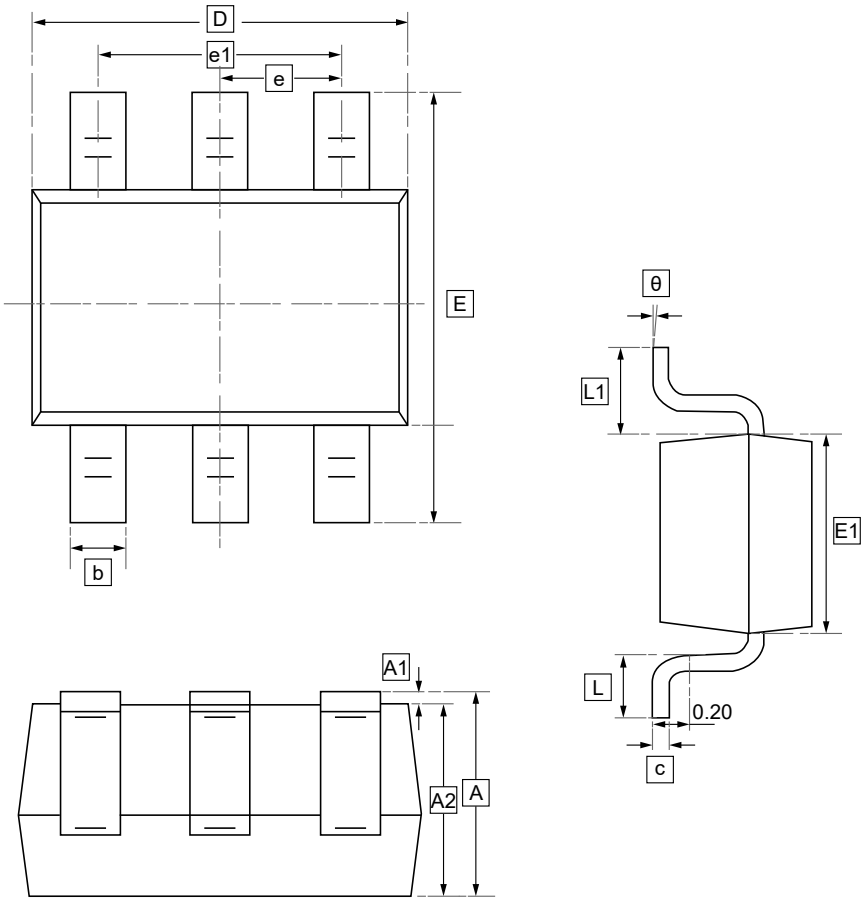


Figure 4. Test Circuit

12.1SC70-6 Package Outline Dimensions

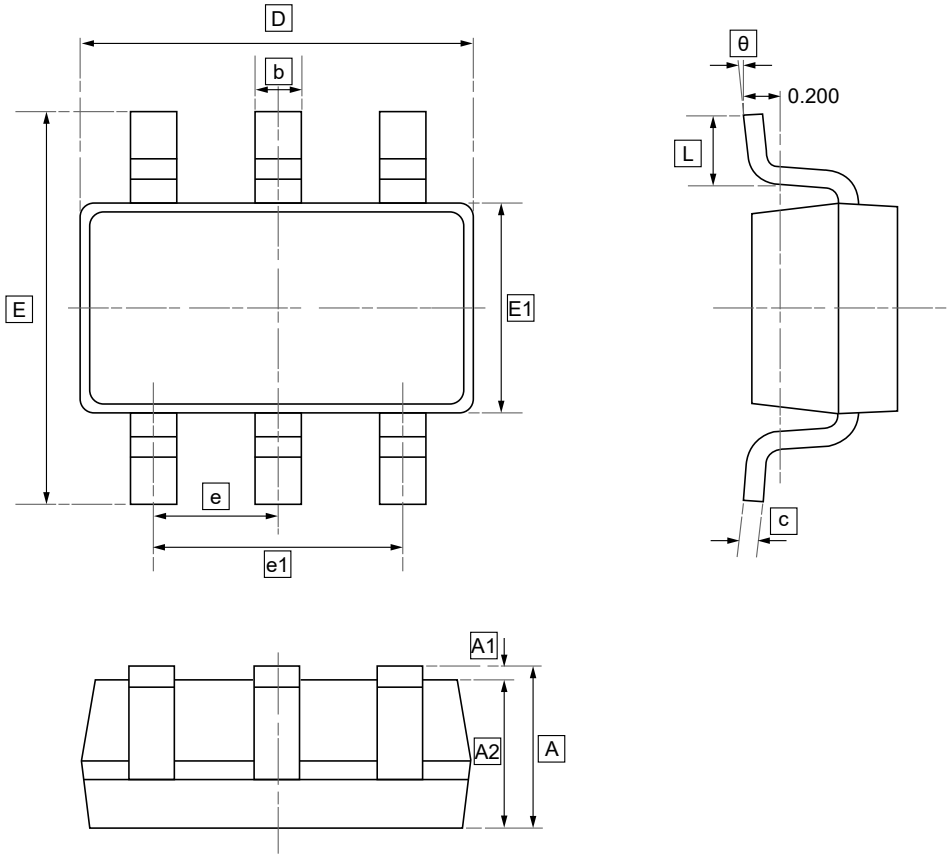


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	e1	L	L1
Min	0.90	0.00	0.90	0.15	0.08	2.05	2.15	1.15	0.65	1.2	0.26	0.525
Max	1.10	0.10	1.00	0.35	0.15	2.25	2.45	1.35	TYP.	1.4	0.46	REF.

Symbol	θ
Min	0°
Max	8°

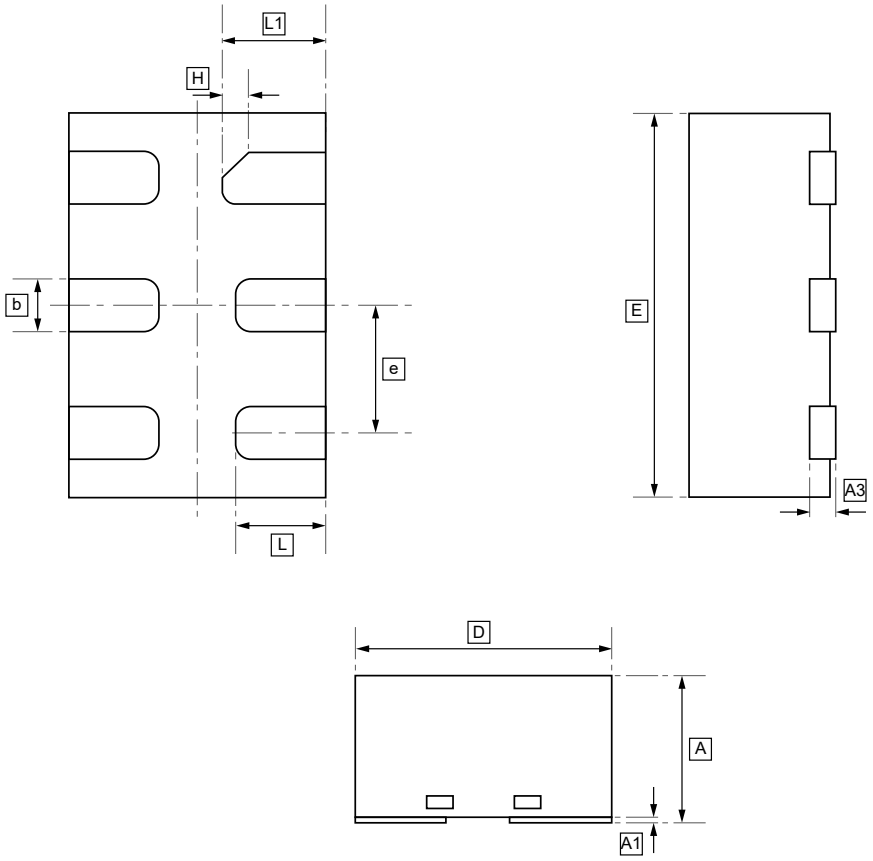
12.2SOT23-6 Package Outline Dimensions



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°

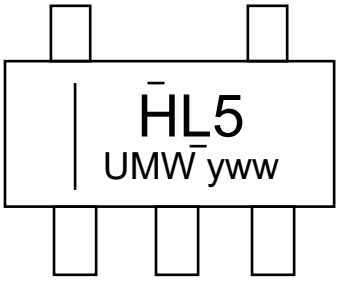
12.3DFN6(1*1.5) Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A3	b	D	E	e	H	L	L1
Min	0.50	0	0.10	0.15	0.90	1.40	0.40	0.10	0.30	0.35
Max	0.60	0.05	REF	0.25	1.10	1.60	0.60	REF	0.40	0.45

13.Ordering information



yww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW SN74AUP2G17DBVR	HL	SOT23-6	3000	Tape and reel
UMW SN74AUP2G17DCKR	HL5	SC70-6	3000	Tape and reel
UMW SN74AUP2G17DRYR	HL	DFN6	5000	Tape and reel

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