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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL00AA is a 2-input CMOS NAND Gate, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

With a wave forming buffer connected internally, stabilized output can be achieved as the circuit offers high noise immunity.

As the XC74UL00AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 2.6ns (TYP.)

Operating Voltage Range : 2V ~ 5.5V

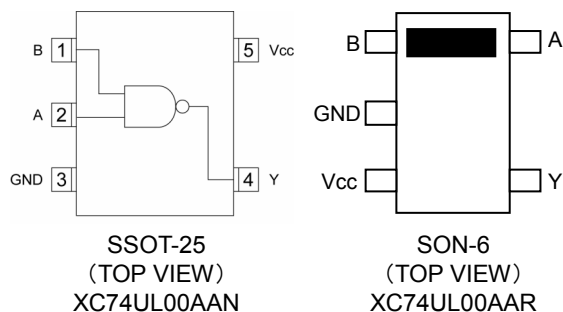
Low Power Consumption: 1 μ A (MAX.)

CMOS 2-Input NAND Gate

Ultra Small Package : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



■ FUNCTIONS

INPUT		OUTPUT
A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	VCC	-0.5~+6.0	V
Input Voltage	VIN	-0.5~+6.0	V
Output Voltage	VOUT	-0.5~VCC+0.5	V
Input Diode Current	I _{IK}	-20	mA
Output Diode Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
VCC,GND Current	I _{CC} ,I _{GND}	±50	mA
Power Dissipation	SSOT-25* ¹	150	mW
	SON-6* ²	200	
Storage Temperature Range	T _{stg}	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	
Input Rise and Fall Time	t _{r,tf}	3.3	0~100	ns/V
		5.0	0~20	

DC ELECTRICAL CHARACTERISTICS

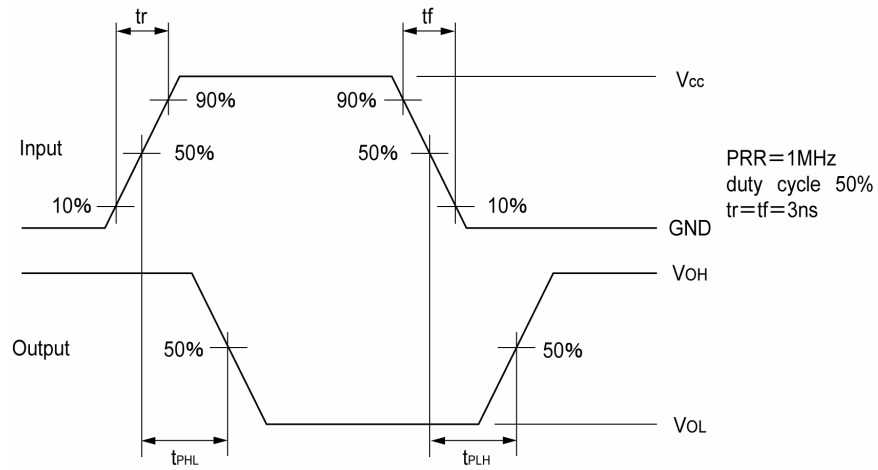
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS		
				MIN.	TYP.	MAX.	MIN.	MAX.			
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V		
		3.0		2.1	—	—	2.1	—			
		5.5		3.85	—	—	3.85	—			
	V _{IL}	2.0		—	—	0.5	—	0.5	V		
		3.0		—	—	0.9	—	0.9			
		5.5		—	—	1.65	—	1.65			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IH} or V _{IL}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V	
		3.0			2.9	3.0	—	2.9	—		
		4.5			4.4	4.5	—	4.4	—		
		3.0			I _{OH} =-4mA	2.58	—	—	2.48		—
		4.5				I _{OH} =-8mA	3.94	—	—		3.80
	V _{OL}	2.0	V _{IN} =V _{IH}	I _{OL} =50 μA	—		—	0.1	—	0.1	V
		3.0			—	—	0.1	—	0.1		
		4.5			—	—	0.1	—	0.1		
		3.0			I _{OL} =4mA	—	—	0.36	—	0.44	
		4.5				I _{OL} =8mA	—	—	0.36	—	
Input Current	I _{IN}	0~5.5	V _{IN} =V _{CC} or GND	-0.1	—		0.1	-1.0	1.0	μA	
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0	μA		

SWITCHING ELECTRICAL CHARACTERISTICS

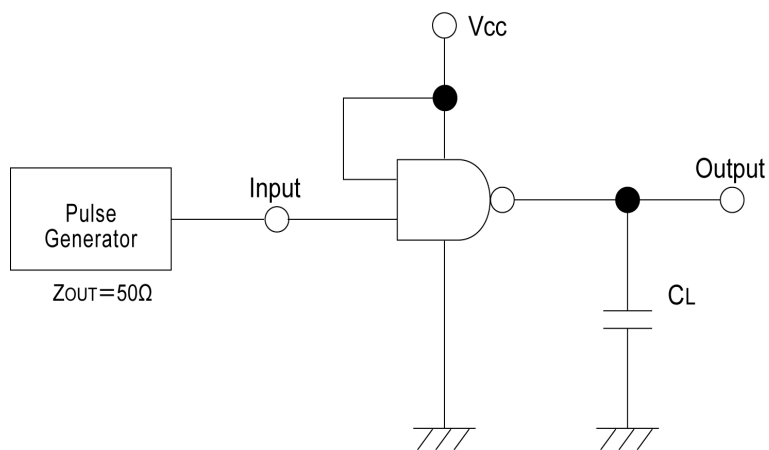
t_r=t_f=3ns

PARAMETER	SYMBOL	C _L	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
					MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	3.7	7.9	1.0	9.5	ns
			5.0		—	2.7	5.5	1.0	6.5	
		50pF	3.3		—	5.4	11.4	1.0	13.0	ns
			5.0		—	3.6	7.5	1.0	8.5	
	t _{PHL}	15pF	3.3		—	3.3	7.9	1.0	9.5	ns
			5.0		—	2.5	5.5	1.0	6.5	
		50pF	3.3		—	4.6	11.4	1.0	13.0	ns
			5.0		—	3.5	7.5	1.0	8.5	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	2	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	9.3	—	—	—	pF

WAVEFORM



TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

XC74UL02AA

ETR1303_002

CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL02AA is a 2-input CMOS NOR Gate, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

With a wave forming buffer connected internally, stabilized output can be achieved as the circuit offers high noise immunity.

As the XC74UL02AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 2.65ns (TYP.)

Operating Voltage Range : 2V ~ 5.5V

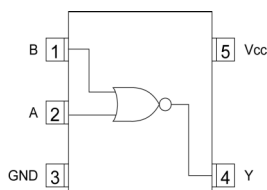
Low Power Consumption : 1 μ A (MAX.)

CMOS 2-Input NOR Gate

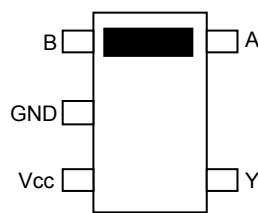
Ultra Small Packages : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



SSOT-25
(TOP VIEW)
XC74UL02AAN



SON-6
(TOP VIEW)
XC74UL02AAR

■ FUNCTIONS

INPUT		OUTPUT
A	B	Y
L	L	H
L	H	L
H	L	L
H	H	L

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	Vcc	-0.5~+6.0	V
Input Voltage	VIN	-0.5~+6.0	V
Output Voltage	VOUT	-0.5~Vcc+0.5	V
Input Diode Current	I _{IK}	-20	mA
Output Diode Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
Vcc,GND Current	I _{CC} ,I _{GND}	±50	mA
Power Dissipation	SSOT-25* ¹	Pd	150
	SON-6* ²		200
Storage Temperature Range	T _{stg}	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	
Input Rise and Fall Time	t _{r,tf}	3.3	0~100	ns
		5.0	0~20	

DC ELECTRICAL CHARACTERISTICS

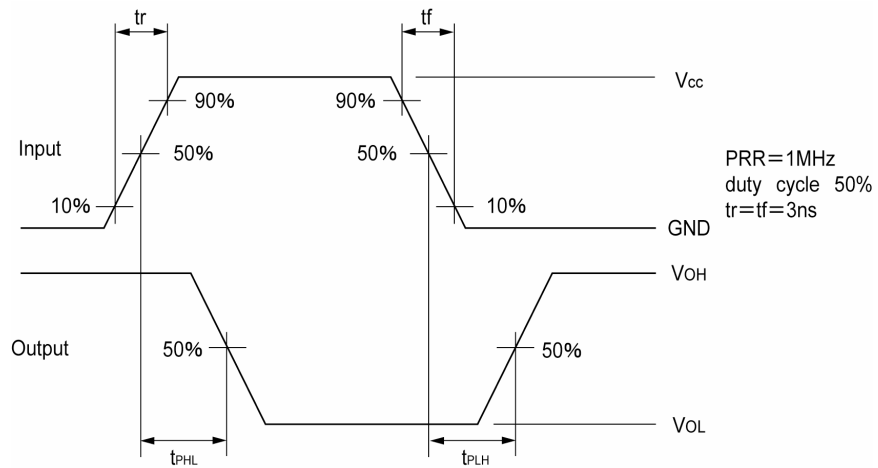
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS		
				MIN.	TYP.	MAX.	MIN.	MAX.			
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V		
		3.0		2.1	—	—	2.1	—			
		5.5		3.85	—	—	3.85	—			
	V _{IL}	2.0		—	—	0.5	—	0.5	V		
		3.0		—	—	0.9	—	0.9			
		5.5		—	—	1.65	—	1.65			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IH}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V	
		3.0			2.9	3.0	—	2.9	—		
		4.5			4.4	4.5	—	4.4	—		
		3.0			I _{OH} =-4mA	2.58	—	—	2.48		—
		4.5				I _{OH} =-8mA	3.94	—	—		3.80
	V _{OL}	2.0	V _{IN} =V _{IH}	I _{OL} =50 μA	—		—	0.1	—	0.1	V
		3.0			—	—	0.1	—	0.1		
		4.5			—	—	0.1	—	0.1		
		3.0			I _{OL} =4mA	—	—	0.36	—	0.44	
		4.5				I _{OL} =8mA	—	—	0.36	—	
Input Current	I _{IN}	0~5.5	V _{IN} =V _{CC} or GND	-0.1	—		0.1	-1.0	1.0	μA	
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0			

SWITCHING ELECTRICAL CHARACTERISTICS

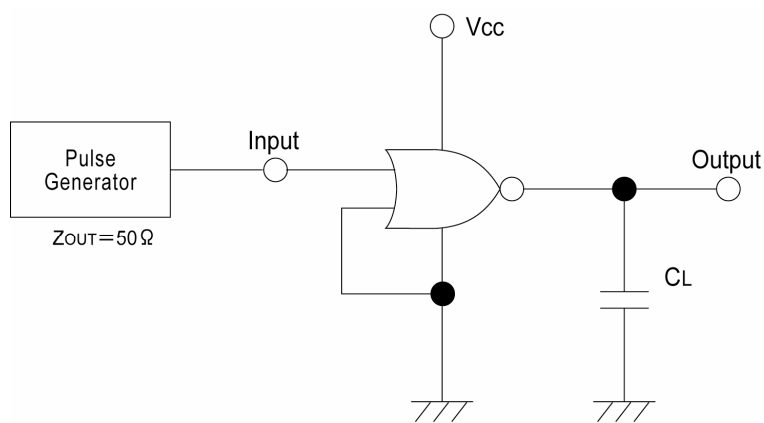
t_r=t_f=3ns

PARAMETER	SYMBOL	V _{CC} (V)		CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
		C _L	V _{CC} (V)		MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	3.9	7.9	1.0	9.5	ns
			5.0		—	2.7	5.5	1.0	6.5	
		50pF	3.3		—	5.5	11.4	1.0	13.0	ns
			5.0		—	3.9	7.5	1.0	8.5	
	t _{PHL}	15pF	3.3		—	3.5	7.9	1.0	9.5	ns
			5.0		—	2.6	5.5	1.0	6.5	
		50pF	3.3		—	4.9	11.4	1.0	13.0	ns
			5.0		—	3.6	7.5	1.0	8.5	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	4	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	9.7	—	—	—	pF

■ WAVEFORM



■ TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

XC74UL04AA

ETR1304_002

CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL04AA is a CMOS inverter, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

The internal circuit is composed of inverter and buffer, which provide high noise immunity and stable output.

As the XC74UL04AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 2.05ns(TYP.)

Operating Voltage Range : 2V ~ 5.5V

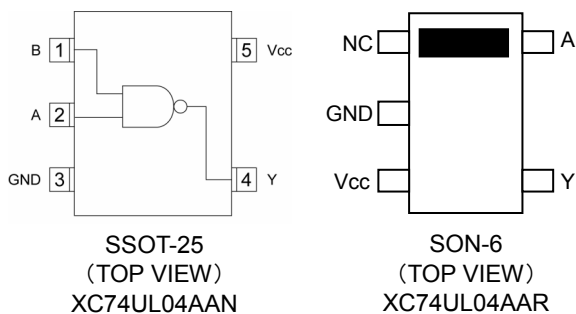
Low Power Consumption: 1 μ A (MAX.)

CMOS Inverter

Ultra Small Packages : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



■ FUNCTIONS

INPUT	OUTPUT
A	Y
H	L
L	H

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	Vcc	-0.5~+6.0	V
Input Voltage	VIN	-0.5~+6.0	V
Output Voltage	VOUT	-0.5~Vcc+0.5	V
Input Diode Current	IiK	-20	mA
Output Diode Current	Iok	±20	mA
Output Current	IOUT	±25	mA
Vcc,GND Current	ICC,IGND	±50	mA
Power Dissipation	SSOT-25*1	150	mW
	SON-6*2	200	
Storage Temperature Range	Tstg	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	
Input Rise and Fall Time	t _{r,tf}	3.3	0~100	ns
		5.0	0~20	

DC ELECTRICAL CHARACTERISTICS

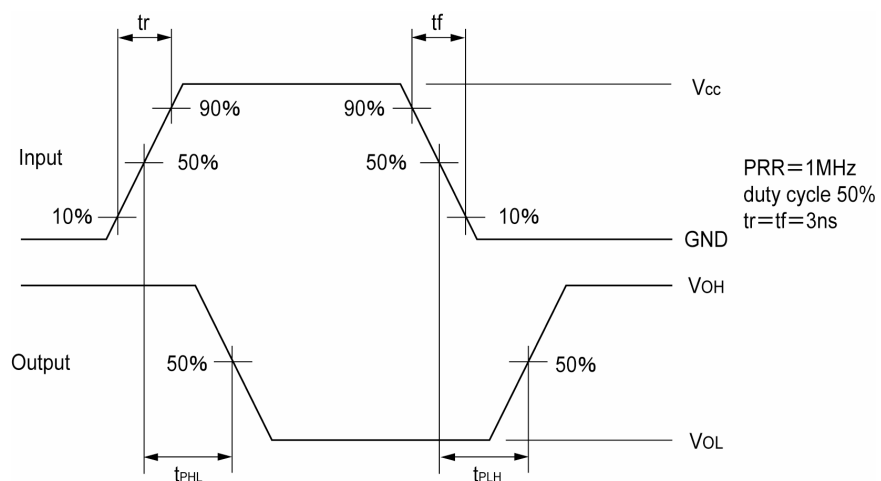
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS		
				MIN.	TYP.	MAX.	MIN.	MAX.			
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V		
		3.0		2.1	—	—	2.1	—			
		5.5		3.85	—	—	3.85	—			
	V _{IL}	2.0		—	—	0.5	—	0.5	V		
		3.0		—	—	0.9	—	0.9			
		5.5		—	—	1.65	—	1.65			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IL}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V	
		3.0			2.9	3.0	—	2.9	—		
		4.5			4.4	4.5	—	4.4	—		
		3.0			I _{OH} =-4mA	2.58	—	—	2.48		—
		4.5				I _{OH} =-8mA	3.94	—	—		3.80
	V _{OL}	V _{IN} =V _{IH}	2.0	I _{OL} =50 μA	—	—	0.1	—	0.1	V	
					3.0	—	—	0.1	—		0.1
					4.5	—	—	0.1	—		0.1
			3.0		I _{OL} =4mA	—	—	0.36	—		0.44
			4.5			I _{OL} =8mA	—	—	0.36		—
Input Current	I _{IN}	0~5.5	V _{IN} =V _{CC} or GND	-0.1	—	0.1	-1.0	1.0	μA		
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0	μA		

SWITCHING ELECTRICAL CHARACTERISTICS

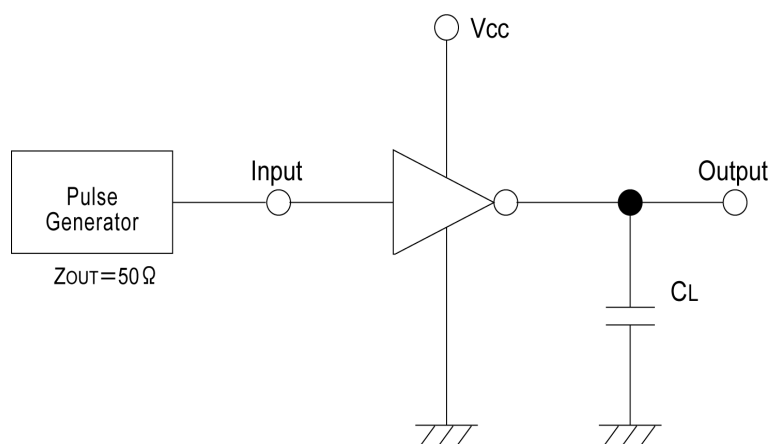
t_r=t_f=3ns

PARAMETER	SYMBOL	C _L	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
					MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	2.7	7.1	1.0	8.5	ns
			5.0		—	2.1	5.5	1.0	6.5	
		50pF	3.3		—	4.1	10.6	1.0	12.0	ns
			5.0		—	3.2	7.5	1.0	8.5	
	t _{PHL}	15pF	3.3		—	2.5	7.1	1.0	8.5	ns
			5.0		—	2.0	5.5	1.0	6.5	
		50pF	3.3		—	3.9	10.6	1.0	12.0	ns
			5.0		—	3.0	7.5	1.0	8.5	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	2	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	8.9	—	—	—	pF

WAVEFORM



TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL08AA is a 2-input CMOS AND Gate, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

With a wave forming buffer connected internally, stabilized output can be achieved as the circuit offers high noise immunity.

As the XC74UL08AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 2.6ns (TYP.)

Operating Voltage Range : 2V ~ 5.5V

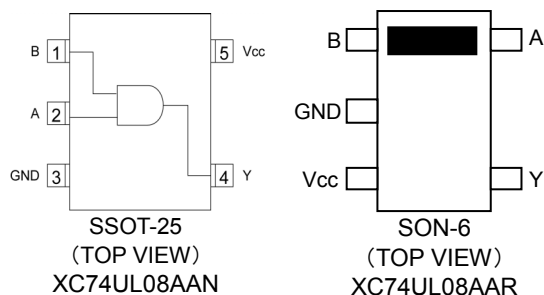
Low Power Consumption : 1 μ A (MAX.)

CMOS 2-Input AND Gate

Ultra Small Packages : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



■ FUNCTIONS

INPUT		OUTPUT
A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	V _{CC}	-0.5~+6.0	V
Input Voltage	V _{IN}	-0.5~+6.0	V
Output Voltage	V _{OUT}	-0.5~V _{CC} +0.5	V
Input Diode Current	I _{IK}	-20	mA
Output Diode Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
V _{CC} ,GND Current	I _{CC} ,I _{GND}	±50	mA
Power Dissipation	SSOT-25* ¹	Pd	mW
	SON-6* ²		
Storage Temperature Range	T _{stg}	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	
Input Rise and Fall Time	t _{r,tf}	3.3	0~100	ns
		5.0	0~20	

DC ELECTRICAL CHARACTERISTICS

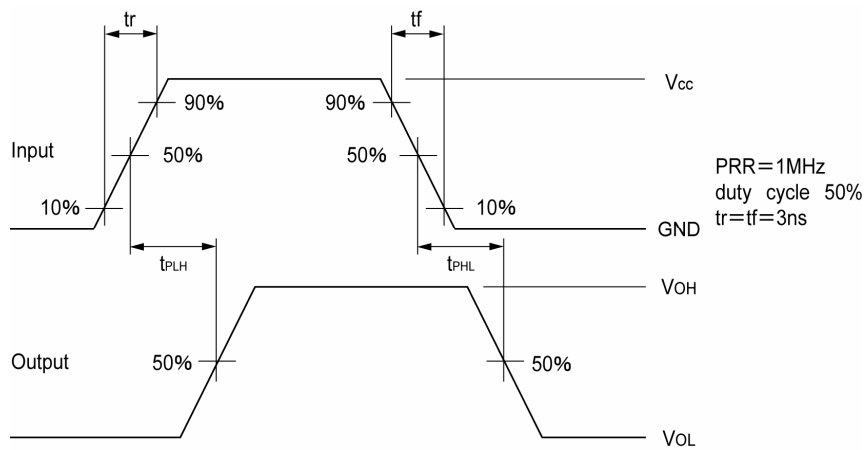
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS		
				MIN.	TYP.	MAX.	MIN.	MAX.			
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V		
		3.0		2.1	—	—	2.1	—			
		5.5		3.85	—	—	3.85	—			
	V _{IL}	2.0		—	—	0.5	—	0.5	V		
		3.0		—	—	0.9	—	0.9			
		5.5		—	—	1.65	—	1.65			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IH}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V	
		3.0			2.9	3.0	—	2.9	—		
		4.5			4.4	4.5	—	4.4	—		
		3.0			I _{OH} =-4mA	2.58	—	—	2.48		—
		4.5				I _{OH} =-8mA	3.94	—	—		3.80
	V _{OL}	2.0	V _{IN} =V _{IH} or V _{IL}	I _{OL} =50 μA	—		—	0.1	—	0.1	V
		3.0			—	—	0.1	—	0.1		
		4.5			—	—	0.1	—	0.1		
		3.0			I _{OL} =4mA	—	—	0.36	—	0.44	
		4.5				I _{OL} =8mA	—	—	0.36	—	
Input Current	I _{IN}	5.5	V _{IN} =V _{CC} or GND	-0.1	—		0.1	-1.0	1.0	μA	
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0	μA		

SWITCHING ELECTRICAL CHARACTERISTICS

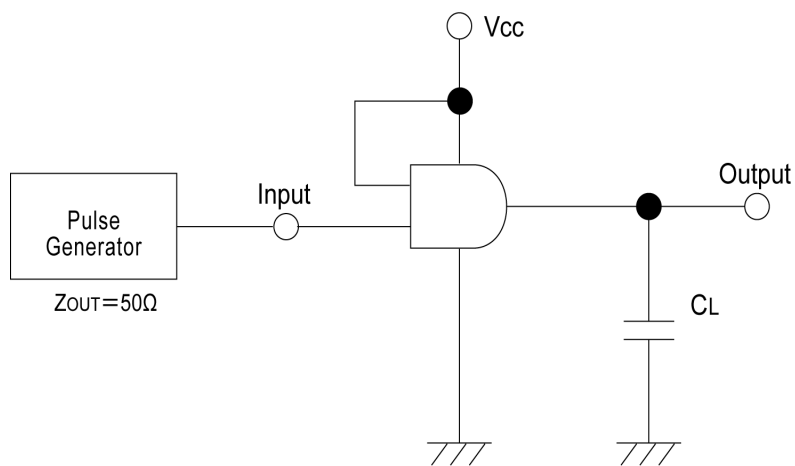
t_r=t_f=3ns

PARAMETER	SYMBOL	C _L	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
					MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	3.7	8.8	1.0	10.5	ns
			5.0		—	2.8	5.9	1.0	7.0	
		50pF	3.3		—	5.2	12.3	1.0	14.0	ns
			5.0		—	3.7	7.9	1.0	9.0	
	t _{PHL}	15pF	3.3		—	3.2	8.8	1.0	10.5	ns
			5.0		—	2.4	5.9	1.0	7.0	
		50pF	3.3		—	4.5	12.3	1.0	14.0	ns
			5.0		—	3.4	7.9	1.0	9.0	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	4	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	9.3	—	—	—	pF

■ WAVEFORM



■ TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL14AA is a CMOS schmitt trigger inverter, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

With a wave forming buffer connected internally, stabilized output can be achieved as the circuit offers high noise immunity.

As the XC74UL14AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 2.3ns (TYP.)

Operating Voltage Range : 2V ~ 5.5V

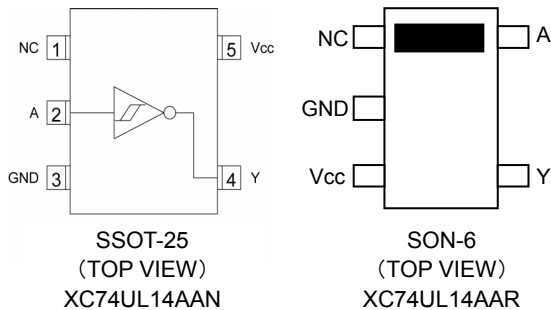
Low Power Consumption : 1 μ A (MAX.)

CMOS Schmitt Trigger Inverter

Ultra Small Packages : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



■ FUNCTIONS

INPUT	OUTPUT
A	Y
H	L
L	H

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	VCC	-0.5~+6.0	V
Input Voltage	VIN	-0.5~+6.0	V
Output Voltage	VOUT	-0.5~VCC+0.5	V
Input Diode Current	I _{IK}	-20	mA
Output Diode Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
VCC,GND Current	I _{CC} ,I _{GND}	±50	mA
Power Dissipation	SSOT-25* ¹	150	mW
	SON-6* ²	200	
Storage Temperature Range	T _{stg}	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	

DC ELECTRICAL CHARACTERISTICS

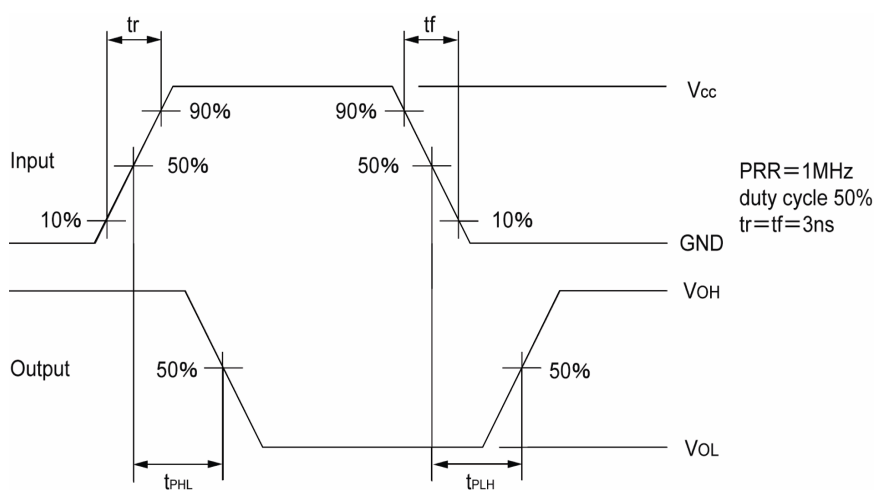
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS	
				MIN.	TYP.	MAX.	MIN.	MAX.		
Threshold Voltage	V _{T+}	2.0		—	—	2.2	—	2.2	V	
		3.0		—	—	3.15	—	3.15		
		5.5		—	—	3.85	—	3.85		
	V _{T-}	2.0		0.9	—	—	0.9	—	V	
		3.0		1.35	—	—	1.35	—		
		5.5		1.65	—	—	1.65	—		
Hysteresis Voltage	V _H	3.0	0.25	—	1.2	0.25	1.2			
		4.5	0.30	—	1.4	0.30	1.4			
		5.5	0.35	—	1.6	0.35	1.6			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IL}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V
		3.0			2.9	3.0	—	2.9	—	
		4.5			4.4	4.5	—	4.4	—	
		3.0			2.58	—	—	2.48	—	
		4.5			3.94	—	—	3.80	—	
	V _{OL}	V _{IN} =V _{IH}	I _{OL} =50 μA	2.0	—	—	0.1	—	0.1	V
				3.0	—	—	0.1	—	0.1	
				4.5	—	—	0.1	—	0.1	
				3.0	—	—	0.36	—	0.44	
				4.5	—	—	0.36	—	0.44	
Input Current	I _{IN}	5.5	V _{IN} =V _{CC} or GND	-0.1	—	0.1	-1.0	1.0	μA	
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0		

SWITCHING ELECTRICAL CHARACTERISTICS

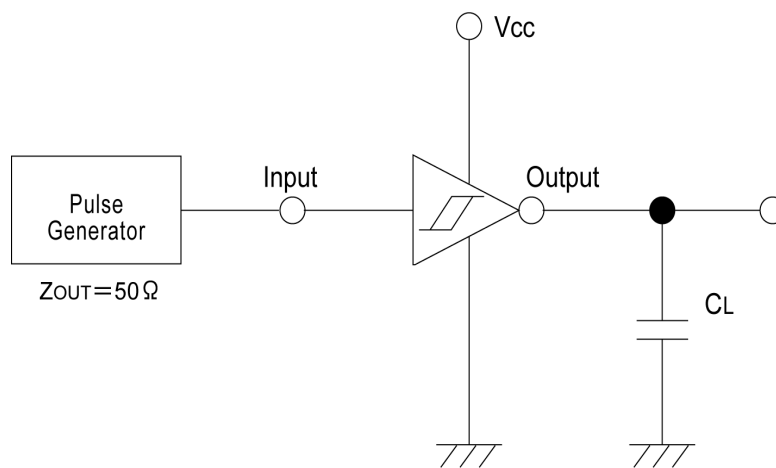
tr=tf=3ns

PARAMETER	SYMBOL	C _L	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
					MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	2.8	12.8	1.0	15.0	ns
			5.0		—	2.1	8.6	1.0	10.0	
		50pF	3.3		—	4.3	16.3	1.0	18.5	ns
			5.0		—	3.1	10.6	1.0	12.0	
	t _{PHL}	15pF	3.3		—	3.1	12.8	1.0	15.0	ns
			5.0		—	2.5	8.6	1.0	10.0	
		50pF	3.3		—	4.4	16.3	1.0	18.5	ns
			5.0		—	3.4	10.6	1.0	12.0	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	2	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	10	—	—	—	pF

WAVEFORM



TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

XC74UL32AA

ETR1307_002

CMOS Logic

■ GENERAL DESCRIPTION

The XC74UL32AA is a 2-input CMOS OR Gate, manufactured using silicon gate CMOS fabrication.

CMOS low power circuit operation makes high speed LS-TTL operation achievable.

With a wave forming buffer connected internally, stabilized output can be achieved as the circuit offers high noise immunity.

As the XC74UL32AA is integrated into mini molded, SSOT-25 and SON-6 package, high density mounting is possible.

■ APPLICATIONS

- Palmtops
- Digital equipment

■ FEATURES

High Speed Operation : tpd = 3.8ns (TYP.)

Operating Voltage Range : 2V ~ 5.5V

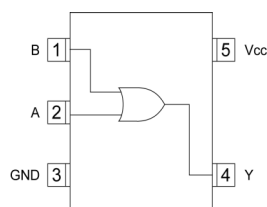
Low Power Consumption : 1 μ A (MAX.)

CMOS 2-Input OR Gate

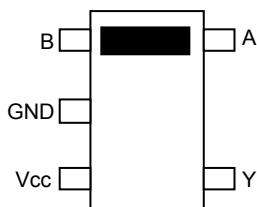
Ultra Small Packages : SSOT-25, SON-6*

* Under Development

■ PIN CONFIGURATION



SSOT-25
(TOP VIEW)
XC74UL32AAN



SON-6
(TOP VIEW)
XC74UL32AAR

■ FUNCTIONS

INPUT		OUTPUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	H

H=High level

L=Low level

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNITS
Supply Voltage	VCC	-0.5~+6.0	V
Input Voltage	VIN	-0.5~+6.0	V
Output Voltage	VOUT	-0.5~VCC+0.5	V
Input Diode Current	I _{IK}	-20	mA
Output Diode Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
VCC,GND Current	I _{CC} ,I _{GN} D	±50	mA
Power Dissipation	SSOT-25* ¹	150	mW
	SON-6* ²	200	
Storage Temperature Range	T _{stg}	-65~+150	°C

Voltage is all ground standardized.

* 1) Ta=55°C

* 2) Ta=25°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	UNITS
Supply Voltage	V _{CC}	—	2~5.5	V
Input Voltage	V _{IN}	—	0~5.5	V
Output Voltage	V _{OUT}	—	0~V _{CC}	V
Operating Temperature Range	T _{opr}	—	-40~+85	°C
Output Current	I _{OH}	3.0	-4	mA
		4.5	-8	
	I _{OL}	3.0	4	
		4.5	8	
Input Rise and Fall Time	t _{r,tf}	3.3	0~100	ns
		5.0	0~20	

DC ELECTRICAL CHARACTERISTICS

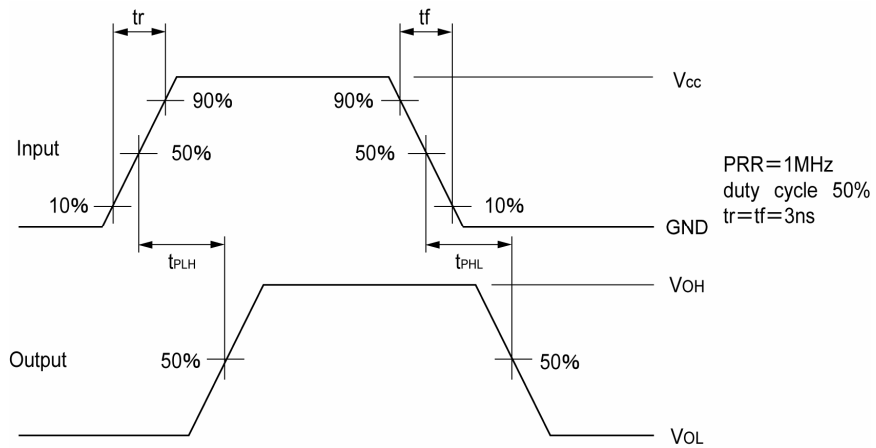
PARAMETER	SYMBOL	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS		
				MIN.	TYP.	MAX.	MIN.	MAX.			
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V		
		3.0		2.1	—	—	2.1	—			
		5.5		3.85	—	—	3.85	—			
	V _{IL}	2.0		—	—	0.5	—	0.5	V		
		3.0		—	—	0.9	—	0.9			
		5.5		—	—	1.65	—	1.65			
Output Voltage	V _{OH}	2.0	V _{IN} =V _{IH} or V _{IL}	I _{OH} =-50 μA	1.9	2.0	—	1.9	—	V	
		3.0			2.9	3.0	—	2.9	—		
		4.5			4.4	4.5	—	4.4	—		
		3.0			I _{OH} =-4mA	2.58	—	—	2.48		—
		4.5				I _{OH} =-8mA	3.94	—	—		3.80
	V _{OL}	V _{IN} =V _{IL}	I _{OL} =50 μA	2.0	—	—	0.1	—	0.1	V	
				3.0	—	—	0.1	—	0.1		
				4.5	—	—	0.1	—	0.1		
				3.0	I _{OL} =4mA	—	—	0.36	—		0.44
				4.5		I _{OL} =8mA	—	—	0.36		—
Input Current	I _{IN}	5.5	V _{IN} =V _{CC} or GND	-0.1	—	0.1	-1.0	1.0	μA		
Static Supply Current	I _{CC}	5.5	V _{IN} =V _{CC} or GND, I _{OUT} =0 μA	—	—	1.0	—	10.0			

SWITCHING ELECTRICAL CHARACTERISTICS

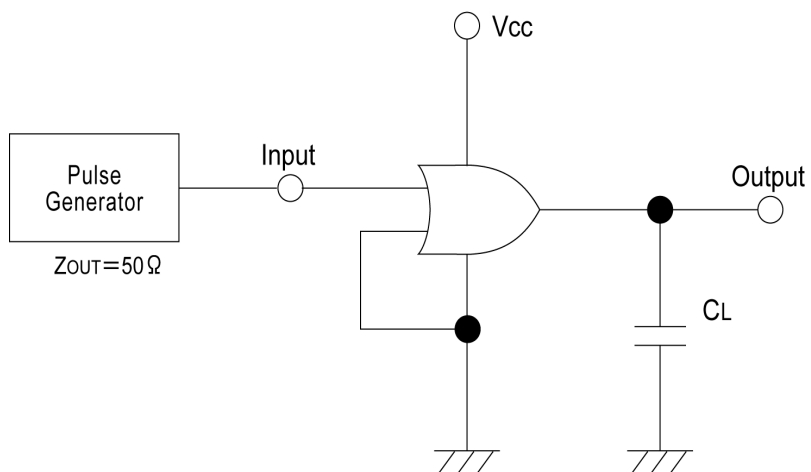
t_r=t_f=3ns

PARAMETER	SYMBOL	C _L	V _{CC} (V)	CONDITIONS	Ta=25°C			Ta=-40°C~85°C		UNITS
					MIN.	TYP.	MAX.	MIN.	MAX.	
Delay Time	t _{PLH}	15pF	3.3		—	5.5	7.9	1.0	9.5	ns
			5.0		—	3.8	5.5	1.0	6.5	
		50pF	3.3		—	8.0	11.4	1.0	13.0	ns
			5.0		—	5.3	7.5	1.0	8.5	
	t _{PHL}	15pF	3.3		—	5.5	7.9	1.0	9.5	ns
			5.0		—	3.8	5.5	1.0	6.5	
		50pF	3.3		—	8.0	11.4	1.0	13.0	ns
			5.0		—	5.3	7.5	1.0	8.5	
Input Capacitance	C _{IN}	—	5.0	V _{IN} =V _{CC} or GND	—	2	10	—	10	pF
Power Dissipation Capacitance	C _{pd}	No Load, f=1MHz			—	8.9	—	—	—	pF

WAVEFORM



TEST CIRCUIT



Note: Open output when measuring supply current

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TOREX SEMICONDUCTOR LTD.

CMOS Logic

DESCRIPTION

XC74UL4066 is CMOS analog switch manufactured using silicon gate CMOS processes. The small supply current, which is one of the features of the CMOS logic, gives way to high speed analog or digital signal switching. As the series is integrated into a mini molded, SSOT-25 package, high density mounting is possible.

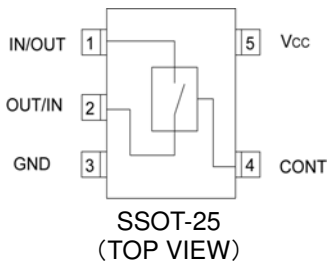
APPLICATIONS

- Palmtops
- Digital equipment

FEATURES

- High Speed Operation** : tpd = 2ns (TYP.)
- Operating Voltage Range** : 2V ~ 5.5V
- Low Power Consumption** : 1 μ A (MAX.)
- Low ON Resistance** : 22 Ω (TYP.)
- CMOS Logic Analog Switch**
- Ultra Small Package** : SSOT-25

PIN CONFIGURATION

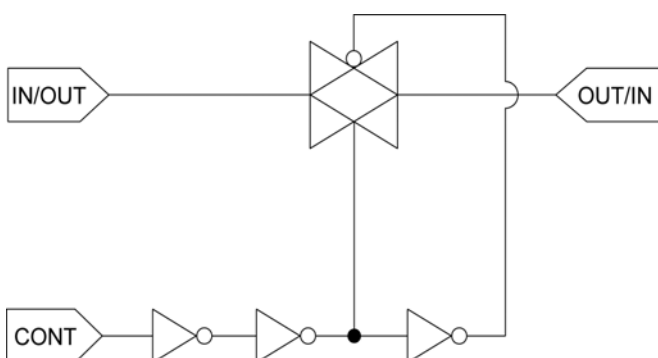


PRODUCT CLASSIFICATION

- Ordering Information

PRODUCT NAME	PACKAGE	ORDER UNIT
XC74UL4066NR	SSOT-25	3,000/Reel

LOGIC DIAGRAM



FUNCTIONS

CONTROL	STATE
L	OFF
H	ON

H=High level
L=Low level