XC74WL241ASR

TOREX

ETR1324_001

CMOS Logic

■GENERAL DESCRIPTION

XC74WL241ASR is dual bus buffer 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 operations which enables LS-TTL.
With wave forming buffers connected internally, stabilized output can be achieved as the series offers high noise immunity.
As the series is integrated into a mini molded, MSOP-8B package, high density mounting is possible.

■APPLICATIONS

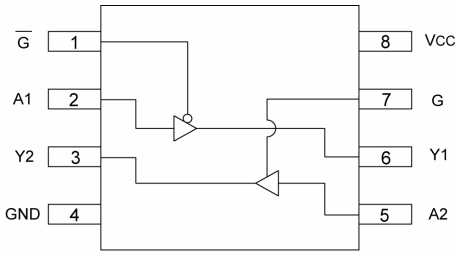
●Palmtops

●Digital equipment

■FEATURES

High Speed Operations : tpd = 3.8ns (TYP.) (V_{CC}=5V)
Operating Voltage Range : 2V ~ 5.5V
Low Power Consumption: 2μA (MAX.)@Ta=25℃
CMOS Logic Dual Bus Buffer
(Non inverted 3-state outputs)
Small Package : MSOP-8B

■PIN CONFIGURATION



MSOP-8B
(TOP VIEW)

■FUNCTIONS

INPUT			OUTPUT
$\overline{G}$	G	A	Y
L	H	H	H
L	H	L	L
H	L	X	Z

H=High level
L=Low level
X=Don't care
Z=High impedance

■ABSOLUTE MAXIMUM RATINGS

Ta=-40℃~85℃

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
Switch Output Current	I_{OUT}	±25	mA
V_{CC},GND Current	I_{CC},I_{GND}	±50	mA
Power Dissipation (Ta = 25℃)	Pd	300	mW
Storage Temperature Range	Tstg	-65~+150	℃

Note : Voltage is all ground standardized.

■RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	CONDITIONS	UNITS
Supply Voltage	V_{CC}	2~5.5	V
Input Voltage	V_{IN}	0~5.5	V
Output Voltage	V_{OUT}	0~VCC	V
Operating Temperature Range	Topr	-40~+85	℃
Input Rise and Fall Time	tr,tf	0~200（VCC=3.3V）	ns
		0~100（VCC=5V）	

■DC ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	VCC(V)	CONDITIONS		Ta=25℃ MIN.	Ta=25℃ TYP.	Ta=25℃ MAX.	Ta=-40℃~85℃ MIN.	Ta=-40℃~85℃ MAX.	UNITS
Input Voltage	V_{IH}	2.0			1.50	—	—	1.50	—	V
		3.0			2.10	—	—	2.10	—	
		5.5			3.85	—	—	3.85	—	
	V_{IL}	2.0			—	—	0.50	—	0.50	V
		3.0			—	—	0.90	—	0.90	
		5.5			—	—	1.65	—	1.65	
Output Voltage	V_{OH}	2.0	$V_{IN}=V_{IH}$	I_{OH}=-50μA	1.90	2.00	—	1.90	—	V
		3.0			2.90	3.00	—	2.90	—	
		4.5			4.40	4.50	—	4.40	—	
		3.0		I_{OH}=-4mA	2.58	—	—	2.48	—	
		4.5		I_{OH}=-8mA	3.94	—	—	3.80	—	
	V_{OL}	2.0	$V_{IN}=V_{IL}$	I_{OL}=50μA	—	—	0.10	—	0.10	V
		3.0			—	—	0.10	—	0.10	
		4.5			—	—	0.10	—	0.10	
		3.0		I_{OL}=4mA	—	—	0.36	—	0.44	
		4.5		I_{OL}=8mA	—	—	0.36	—	0.44	
3 State Off-Leak Current	I_{OZ}	5.0	$V_{IN}=V_{IL}$ or V_{IH}, $V_{OUT}=V_{CC}$ or GND		-0.25	—	0.25	-2.50	2.50	μA
Input Current	I_{IN}	0~5.5	$V_{IN}=V_{CC}$ or GND		-0.10	—	0.10	-1.00	1.00	μA
Static Supply Current	I_{CC}	5.5	$V_{IN}=V_{CC}$ or GND		—	—	2.00	—	20.0	μA

■SWITCHING ELECTRICAL CHARACTERISTICS

(tr=tf=3ns)

PARAMETER	SYMBOL	CL	VCC(V)	CONDITIONS	Ta=25℃ MIN.	Ta=25℃ TYP.	Ta=25℃ MAX.	Ta=-40℃~85℃ MIN.	Ta=-40℃~85℃ MAX.	UNITS
Delay Time	tPLH	15pF	3.3		–	5.6	8.0	1.0	9.5	ns
			5.0		–	3.8	5.5	1.0	6.5	
		50pF	3.3		–	8.1	11.5	1.0	13.0	ns
			5.0		–	5.3	7.5	1.0	8.5	
	tPHL	15pF	3.3		–	5.6	8.0	1.0	9.5	ns
			5.0		–	3.8	5.5	1.0	6.5	
		50pF	3.3		–	8.1	11.5	1.0	13.0	ns
			5.0		–	5.3	7.5	1.0	8.5	
Output Enable Time	tZL	15pF	3.3	RL=1kΩ	–	5.4	8.0	1.0	9.5	ns
			5.0		–	3.6	5.1	1.0	6.0	
		50pF	3.3		–	7.9	11.5	1.0	13.0	ns
			5.0		–	5.1	7.1	1.0	8.0	
	tZH	15pF	3.3	RL=1kΩ	–	5.4	8.0	1.0	9.5	ns
			5.0		–	3.6	5.1	1.0	6.0	
		50pF	3.3		–	7.9	11.5	1.0	13.0	ns
			5.0		–	5.1	7.1	1.0	8.0	
Output Disable Time	tLZ	50pF	3.3	RL=1kΩ	–	9.5	13.2	1.0	15.0	ns
			5.0		–	6.1	8.8	1.0	10.0	
	tHZ	50pF	3.3	RL=1kΩ	–	9.5	13.2	1.0	15.0	ns
			5.0		–	6.1	8.8	1.0	10.0	
Output Pin Skew (Note)	tosLH	50pF	3.3		–	–	1.5	–	1.5	ns
			5.0		–	–	1.0	–	1.0	
	tosHL	50pF	3.3		–	–	1.5	–	1.5	ns
			5.0		–	–	1.0	–	1.0	
Input Capacitance	CIN	–	–		–	4	10	–	10	pF
Output Capacitance	COUT	–	–		–	6	–	–	–	pF
Power Dissipation Capacitance	Cpd	–	–		–	17	–	–	–	pF

Note: tOSLH and tOSHL arethe guaranteed parameters.

tOSLH = | tPLHm – tPHLn | , tOSHL = | tPHLm – tPHLn |

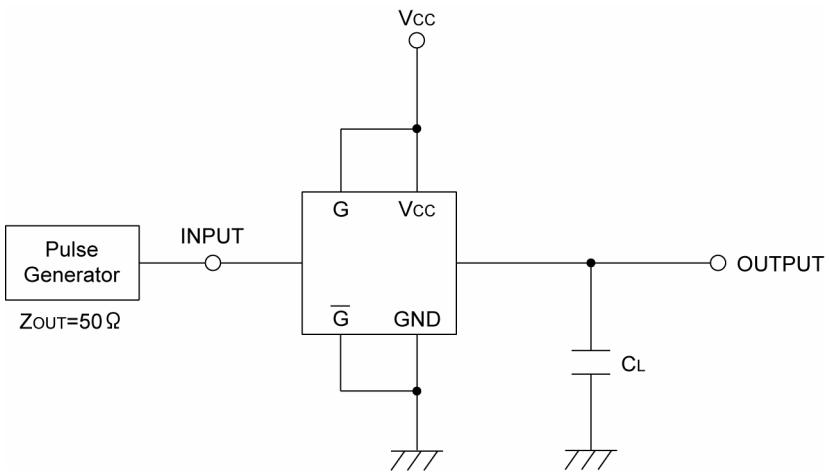
■NOISE CHARACTERISTICS

(tr=tf=3ns)

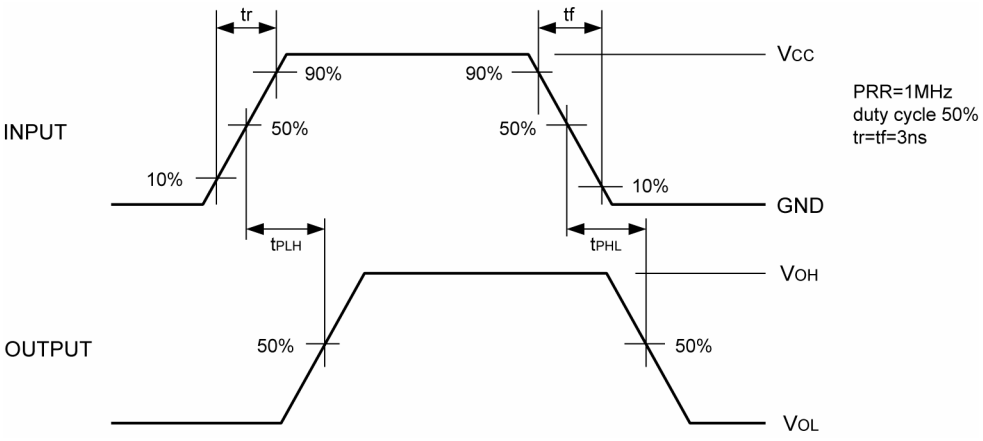
PARAMETER	SYMBOL	CL	VCC(V)	CONDITIONS	Ta=25℃ MIN.	Ta=25℃ TYP.	Ta=25℃ MAX.	UNITS
Non Functional Output Maximum Dynamic VOL	VOLP	50pF	5.0		–	0.5	0.8	V
Non Functional Output Minimum Dynamic VOL	VOLV	50pF	5.0		-0.8	-0.5	–	V
Minimum Dnamic VIH	VIHD	50pF	5.0		–	–	3.5	V
Maximum Dnamic VIL	VILD	50pF	5.0		–	–	1.5	V

■DELAY TIME

●Test Circuit

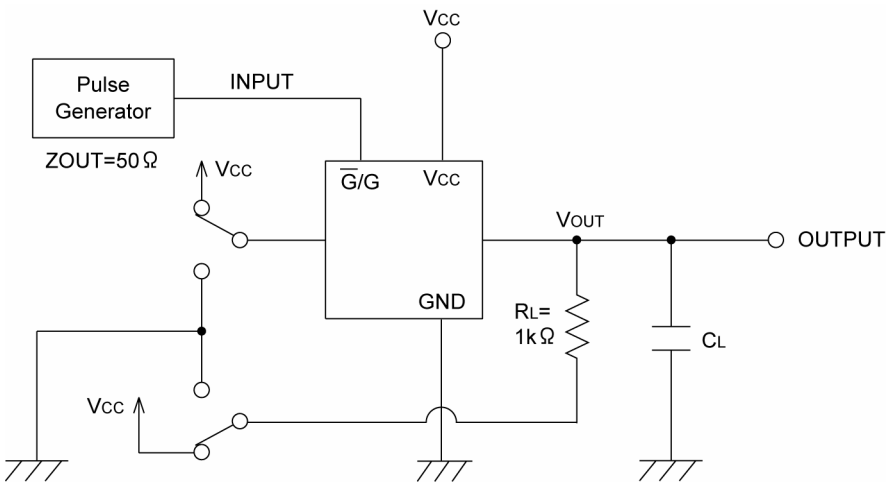


●Waveform

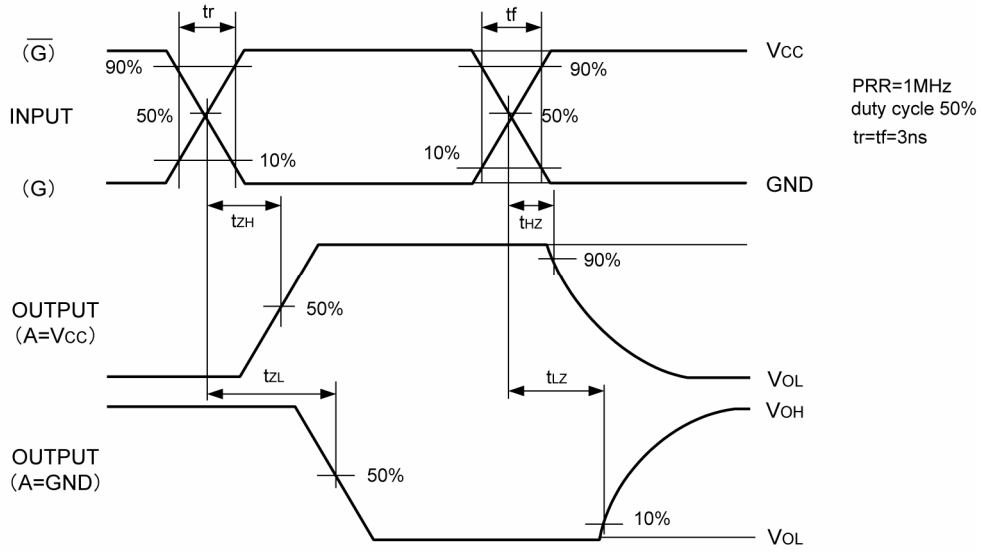


■OUTPUT ENABLE TIME, OUTPUT DISABLE TIME

●Test Circuit



●Waveform



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