

- ◆ COMS 2-Input OR Gate
- ◆ High Speed Operation : tpd = 3.8ns TYP
- ◆ Operating Voltage Range : 2V ~ 5.5V
- ◆ Low Power Consumption : 1μA (max)

■ General Description

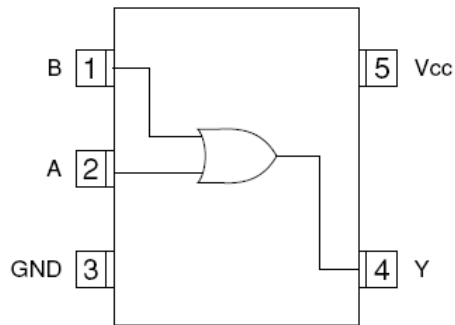
The ML74UL32MRG is a 2-input CMOS OR gate, manufactured using silicon gate CMOS fabrication.

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

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

As the ML74UL32 is integrated into mini molded, SOT-23-5 package, high density mounting possible.

■ Pin Configuration



SOT-23-5 (TOP VIEW)

■ Absolute Maximum Ratings

Ta=-40°C~85°C

PARAMETER	SYMBOL	RATINGS	UNITS
Power 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
Continuous Total Power Dissipation (Ta=55°C)	Pd	150	mW
Storage Temperature	Tstg	-65 ~ +150	°C

Note: Voltage is all Ground standardized.

■ Applications

- Palmtops
- Digital Equipment

■ Features

High Speed Operation : tpd = 3.8ns TYP

Operating Voltage Range: 2V ~ 5.5V

Low Power Consumption: 1μA (max)

Ultra Small Package : SOT-23-5

■ Function

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

H=High level, L=Low level

■ Recommended Operating Conditions

PARAMETER	SYMBOL	Vcc(V)	CONDITIONS	UNITS
Supply Voltage	Vcc	-	2 ~ 5.5	V
Input Voltage	VIN	-	0 ~ 5.5	V
Output Voltage	VOUT	-	0 ~ Vcc	V
Operating Temperature	Topr	-	-40 ~ +85	°C
Output Current	IOH	3.0	-4	mA
		4.5	-8	
	IOL	3.0	4	
		4.5	8	
Input Rise and Fall Time	tr, tf	3.3	0 ~ 100	ns
		5.0	0 ~ 20	

■ DC Electrical Characteristics

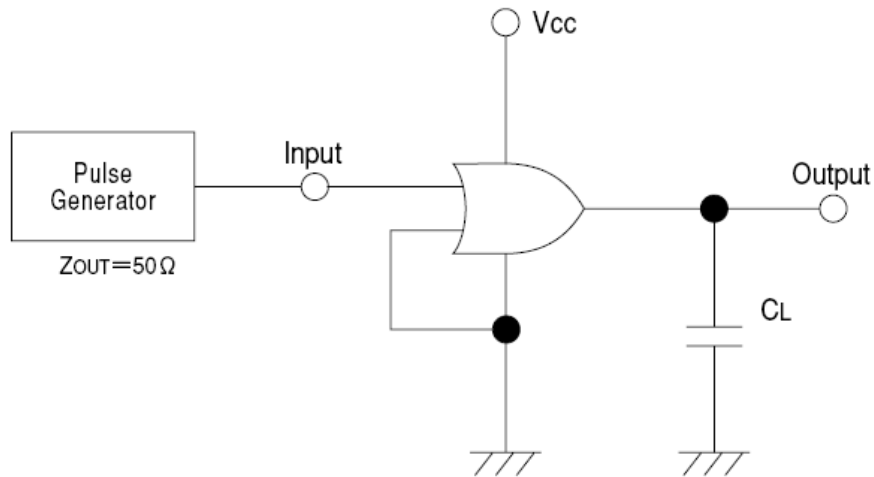
PARAMETER	SYMBOL	Vcc(V)	CONDITIONS	Ta=25°C			Ta=-40~85°C		UNITS	
				MIN	TYP	MAX	MIN	MAX		
Input Voltage	VIH	2.0		1.5	-	-	1.5	-	V	
		3.0		2.1	-	-	2.1	-		
		5.5		3.85	-	-	3.85	-		
	VIL	2.0		-	-	0.5	-	0.5	V	
		3.0		-	-	0.9	-	0.9		
		5.5		-	-	1.65	-	1.65		
Output Voltage	VOH	2.0	VIN=VIH or VIL	IOH=-50μA	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	-	
	VOL	VIN=VIH		IOL=50μA	-	-	0.1	-	0.1	V
					-	-	0.1	-	0.1	
					-	-	0.1	-	0.1	
					-	-	0.36	-	0.44	
					-	-	0.36	-	0.44	
Input Current	IIN	5.5	VIN=Vcc or GND	-0.1	-	0.1	-1.0	1.0	μA	
Quiescent Supply Current	Icc	5.5	VIN=Vcc or GND, IOUT=0μA	-	-	1.0	-	10.0	μA	

■ Switching Electrical Characteristics

PARAMETER	SYMBOL	CL	Vcc(V)	CONDITIONS	Ta=25°C			Ta=-40~85°C		UNITS
					MIN	TYP	MAX	MIN	MAX	
Propagation Delay Time	tPLH	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	11.4	1.0	13	ns
			5.0		-	5.3	7.5	1.0	8.5	
	tPHL	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	11.4	1.0	13	ns
			5.0		-	5.3	7.5	1.0	8.5	
Input Capacitance	CIN	-	5.0	VIN=Vcc or GND	-	2	10	-	10	pF
Power Dissipation Capacitance	Cpd	No Load, f=1MHz			-	8.9	-	-	-	pF

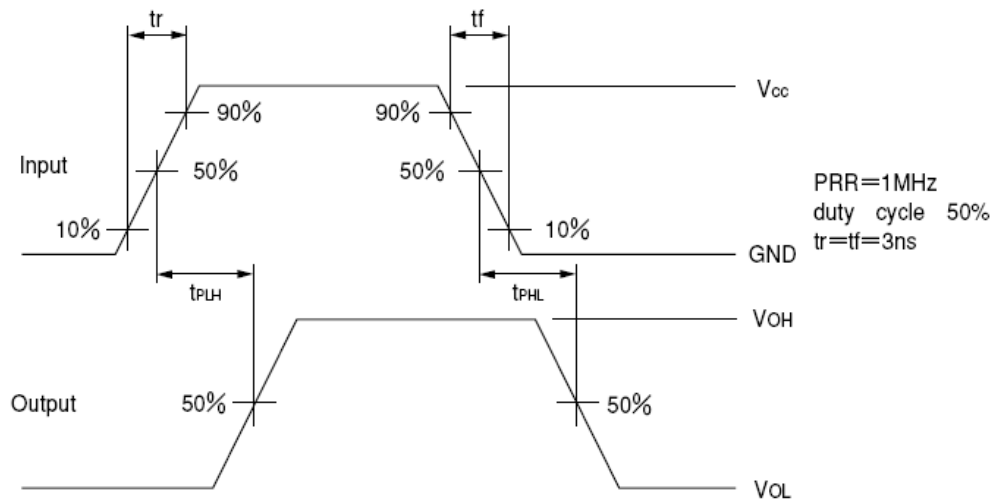
Tr=tf=3ns

■ Typical Application Circuit



Note: Open output when measuring supply current

■ Waveforms



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