



U74VHC1GT32

CMOS IC

SINGLE 2-INPUT OR GATE

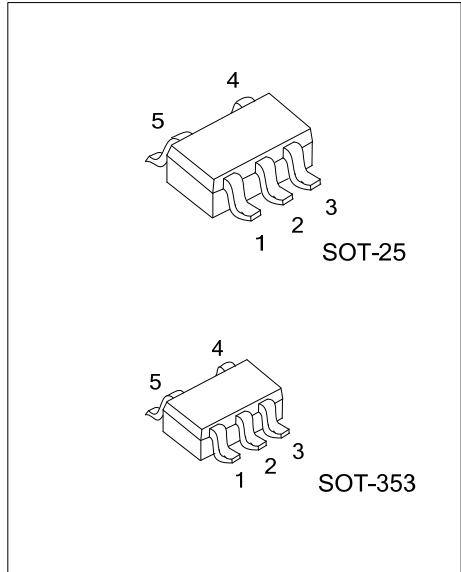
DESCRIPTION

The UTC **U74VHC1GT32** is a single 2-input OR Gate in tiny footprint packages.

The UTC **U74VHC1GT32** has TTL-level thresholds.

FEATURES

- * Operate from 2V to 5.5V
- * Source/Sink 8mA at 5V
- * Inputs are TTL voltage compatible

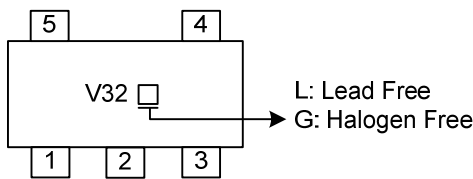


ORDERING INFORMATION

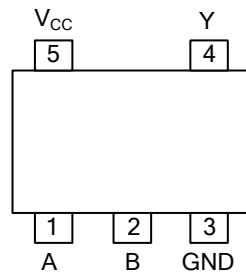
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74VHC1GT32L-AF5-R	U74VHC1GT32G-AF5-R	SOT-25	Tape Reel
U74VHC1GT32L-AL5-R	U74VHC1GT32G-AL5-R	SOT-353	Tape Reel

<p>U74VHC1GT32G-AF5-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AF5: SOT-25, AL5: SOT-353 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ PIN CONFIGURATION

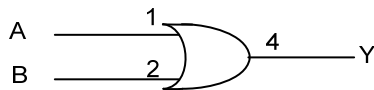


■ FUNCTION TABLE (each gate)

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

Note: H: high voltage level; L: low voltage level.

■ LOGIC DIAGRAM



Logic Symbol

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	-0.5 ~ 6.5	V
Input Voltage	V _{IN}	-0.5 ~ 6.5	V
Output Voltage	V _{OUT}	-0.5 ~ V _{CC} +0.5	V
V _{CC} or GND Current	I _{CC}	±50	mA
Output Current	I _{OUT}	±25	mA
Input Clamp Current	I _{IK}	-20	mA
Output Clamp Current	I _{OK}	±20	mA
Storage Temperature	T _{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC}		2.0		5.5	V
Input Voltage	V _{IN}		0		5.5	V
Output Voltage	V _{OUT}		0		V _{CC}	V
High-level Input Voltage	V _{IH}	V _{CC} =2V	1			V
		V _{CC} =3V	1.4			V
		V _{CC} =4.5V~5.5V	2			V
Low-level Input Voltage	V _{IL}	V _{CC} =2V			0.28	V
		V _{CC} =3V			0.45	V
		V _{CC} =4.5V~5.5V			0.8	V
High-level Output Current	I _{OH}				-8	mA
Low-level Output Current	I _{OL}				8	mA
Input Transition Rise and Fall Time	t _r / t _f	V _{CC} =2V			20	ns/V
		V _{CC} =2.3V~2.7V			20	ns/V
		V _{CC} =3V~3.6V			10	ns/V
		V _{CC} =4.5V~5.5V			5	ns/V
Ambient Operating Temperature	T _A		-40		+125	°C

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Output Voltage	V _{OH}	V _{CC} =2V, I _{OH} =-50μA	1.9			V
		V _{CC} =3V, I _{OH} =-50μA	2.9			V
		V _{CC} =4.5V, I _{OH} =-50μA	4.4			V
		V _{CC} =3V, I _{OH} =-4mA	2.58			V
		V _{CC} =4.5V, I _{OH} =-8mA	3.94			V
Low-Level Output Voltage	V _{OL}	V _{CC} =2V, I _{OL} =50μA		0	0.1	V
		V _{CC} =3V, I _{OL} =50μA		0	0.1	V
		V _{CC} =4.5V, I _{OL} =50μA			0.1	V
		V _{CC} =3V, I _{OL} =4mA			0.36	V
		V _{CC} =4.5V, I _{OL} =8mA			0.36	V
Input Leakage Current	I _{I(LEAK)}	V _{CC} =0~5.5V, V _{IN} =5.5V or GND			±0.1	μA
Quiescent Supply Current	I _Q	V _{CC} =5.5V, V _{IN} =V _{CC} or GND, I _{OUT} =0			1	μA
Additional Quiescent Supply Current	ΔI _Q	V _{CC} =5.5V, One input at 3.4V, Other inputs at V _{CC} or GND			1.35	mA
Input Capacitance	C _{IN}	V _{CC} =4.5V, V _{IN} =V _{CC} or GND		4	10	pF
Output Capacitance	C _{OUT}	Output in High Impedance State		6		pF

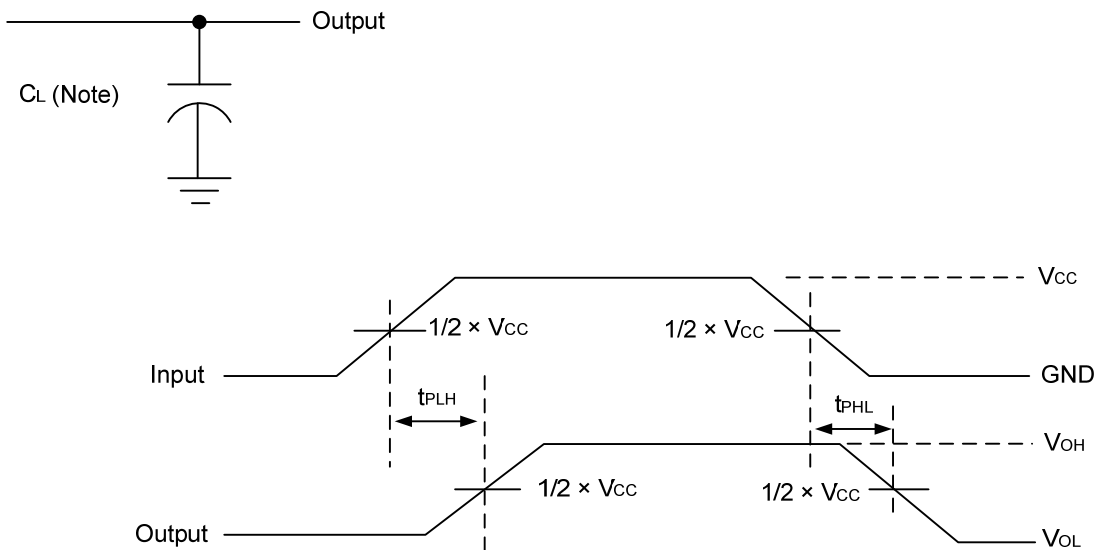
■ DYNAMIC CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Propagation Delay Time Input (A) to Output (Y)	t _{PLH} , t _{PHL}	V _{CC} =3V~3.6V	C _L =15pF		6.3	8.9	ns
			C _L =50pF		7.4	12.4	ns
		V _{CC} =4.5V±0.5V	C _L =15pF		5.2	7.5	ns
			C _L =50pF		5.9	9.5	ns

■ OPERATING CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{PD}	V _{CC} =5V, f=1MHz, No load		8		pF

■ TEST CIRCUIT AND WAVEFORMS



- Notes: 1. C_L includes probe and jig capacitance.
 2. All input pulses are supplied by generators having the following characteristics: $P_{RR} \leq 1\text{MHz}$, $Z_O = 50\Omega$, $t_R \leq 3\text{ns}$, $t_F \leq 3\text{ns}$.

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