

Quad Two-Input OR Gate

Product Specification

Military Logic Products

### FUNCTION TABLE

INPUTS		OUTPUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	H

H = High voltage level  
L = Low voltage level

### ORDERING INFORMATION

DESCRIPTION	ORDER CODE
14-Pin Ceramic DIP	5432/BCA
14-Pin Ceramic Flat Pack	5432/BDA

### INPUT AND OUTPUT LOADING AND FAN-OUT TABLE

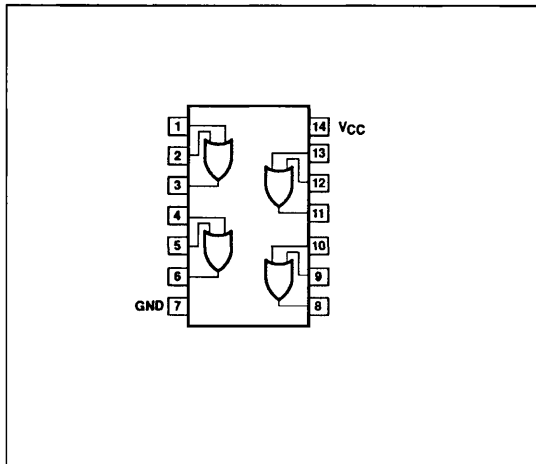
PINS	DESCRIPTION	54
A, B	Inputs	1UL
Y	Output	10UL

NOTE: Where a 54 Unit Load (UL) is understood to be  $40\mu\text{A } I_{IH}$  and  $-1.6\text{mA } I_{IL}$ .

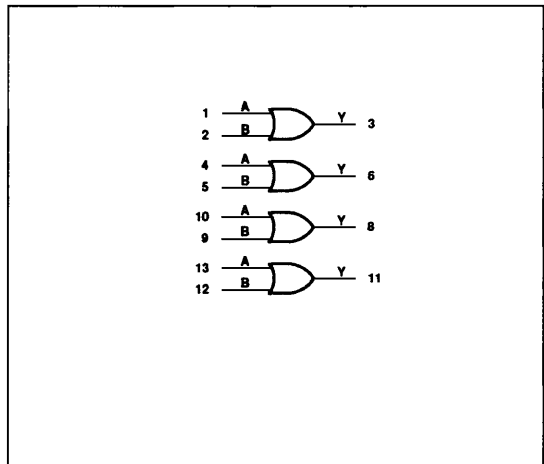
### ABSOLUTE MAXIMUM RATINGS (Over operating free-air temperature range unless otherwise noted.)

SYMBOL	PARAMETER	RATING	UNIT
$V_{CC}$	Supply voltage range	7.0	V
$V_I$	Input voltage range	-0.5 to +5.5	V
$I_I$	Input current range	-30 to +5	mA
$V_O$	Voltage applied to output in High output state range	-0.5 to $V_{CC}$	V
$T_{STG}$	Storage temperature range	-65 to +150	$^{\circ}\text{C}$

### PIN CONFIGURATION



### LOGIC SYMBOL



## Gates

5432

## RECOMMENDED OPERATING CONDITIONS

SYMBOL	PARAMETER	LIMITS			UNIT
		Min	Nom	Max	
V <sub>CC</sub>	Supply voltage	4.5	5.0	5.5	V
V <sub>IH</sub>	High-level input voltage	2.0			V
V <sub>IL</sub>	Low-level input voltage			+0.8	V
I <sub>IK</sub>	Input clamp current			-12	mA
I <sub>OH</sub>	High-level output current			-800	μA
I <sub>OL</sub>	Low-level output current			16	mA
T <sub>A</sub>	Operating free-air temperature range	-55		+125	°C

## DC ELECTRICAL CHARACTERISTICS (Over recommended operating free-air temperature range unless otherwise noted.)

SYMBOL	PARAMETER	TEST CONDITIONS <sup>1</sup>	LIMITS			UNIT
			Min	Typ <sup>2</sup>	Max	
V <sub>OH</sub>	High-level output voltage	V <sub>CC</sub> = Min, V <sub>IH</sub> = Min, I <sub>OH</sub> = Max	2.4	3.4		V
V <sub>OL</sub>	Low-level output voltage	V <sub>CC</sub> = Min, I <sub>OL</sub> = Max, V <sub>IL</sub> = Max		0.2	0.4	V
V <sub>IK</sub>	Input clamp voltage	V <sub>CC</sub> = Min, I <sub>I</sub> = I <sub>IK</sub>			-1.5	V
I <sub>IH2</sub>	Input current at maximum input voltage	V <sub>CC</sub> = Max, V <sub>I</sub> = 5.5V			1.0	mA
I <sub>IH1</sub>	High-level input current	V <sub>CC</sub> = Max, V <sub>I</sub> = 2.4V			40	μA
I <sub>IL</sub>	Low-level input current	V <sub>CC</sub> = Max, V <sub>I</sub> = 0.4V			-1.6	mA
I <sub>OS</sub>	Short-circuit output current <sup>3</sup>	V <sub>CC</sub> = Max	-20		-55	mA
I <sub>CC</sub>	Supply current (total)	V <sub>CC</sub> = Max	I <sub>CC</sub> H Outputs High	15	22	mA
			I <sub>CC</sub> L Outputs Low	23	38	mA

AC ELECTRICAL CHARACTERISTICS T<sub>A</sub> = 25°C, V<sub>CC</sub> = 5.0V<sup>4</sup>

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS		UNIT
			C <sub>L</sub> = 15pF		
			Min	Max	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation delay	Waveform 1		15 22	ns ns

AC ELECTRICAL CHARACTERISTICS T<sub>A</sub> = 25°C, V<sub>CC</sub> = 5.0V

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS		UNIT
			C <sub>L</sub> = 50pF		
			Min	Max	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation delay	Waveform 1		19 26	ns ns

**Gates**

**5432**

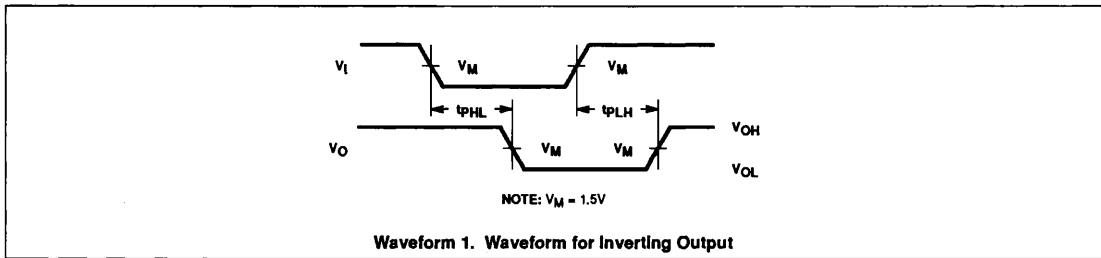
**AC ELECTRICAL CHARACTERISTICS**  $T_A = -55^\circ\text{C}$  and  $+125^\circ\text{C}$ ,  $V_{CC} = 5.0\text{V}^4$

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS		UNIT
			$C_L = 50\text{pF}$		
			Min	Max	
$t_{PLH}$ $t_{PHL}$	Propagation delay	Waveform 1		25 34	ns ns

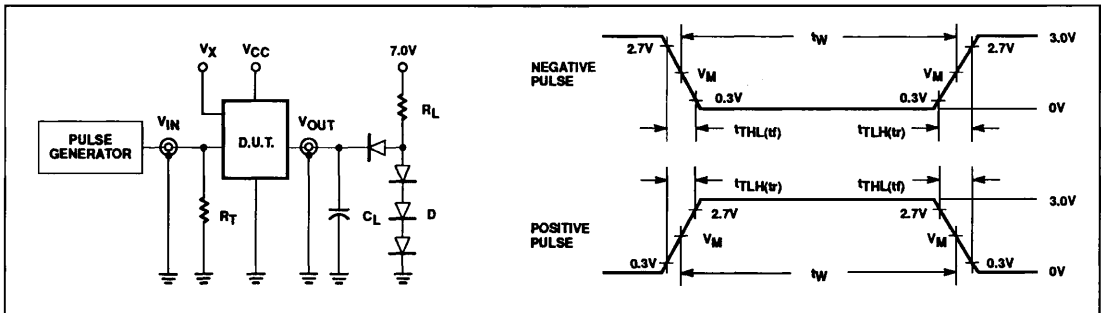
**NOTES:**

1. For conditions shown as Min or Max, use the appropriate value specified under recommended operating conditions for the applicable type and function table operating mode.
2. All typical values are at  $V_{CC} = 5\text{V}$ ,  $T_A = 25^\circ\text{C}$ .
3. Not more than one output should be shorted at a time and duration of the short circuit should not exceed one second.
4. These parameters are guaranteed, but not tested.

**AC WAVEFORM**



**TEST CIRCUIT AND WAVEFORM**



FAMILY	INPUT PULSE CHARACTERISTICS					
	$R_L$	$V_M$	Rep. Rate	$T_w$	$T_{TLH}$	$T_{THL}$
54XXX	$400\Omega$	1.5V	1MHz	500ns	$\leq 7\text{ns}$	$\leq 7\text{ns}$

**DEFINITIONS:**

- $C_L$  = Load capacitance includes jig and probe capacitance; see AC Characteristics for value.
- $R_T$  = Termination resistance should be equal to  $Z_{OUT}$  of Pulse Generators.
- D = Diodes are 1N916, 1N3064, or equivalent.
- $V_X$  = Unlocked pins must be held at:  $\leq 0.8\text{V}$ ;  $\geq 2.7\text{V}$  or open per Function Table.