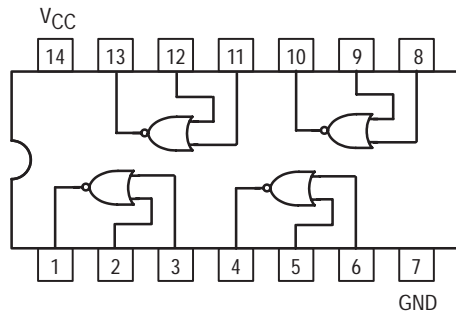




MOTOROLA

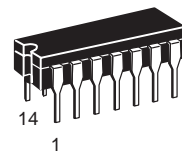
QUAD 2-INPUT NOR GATE



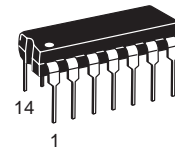
MC54/74F02

QUAD 2-INPUT NOR GATE

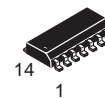
FAST™ SCHOTTKY TTL



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

MC54FXXJ	Ceramic
MC74FXXN	Plastic
MC74FXXD	SOIC

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V _{CC}	Supply Voltage	54, 74	4.5	5.0	5.5	V
T _A	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I _{OH}	Output Current — High	54, 74			-1.0	mA
I _{OL}	Output Current — Low	54, 74			20	mA

MC54/74F02

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter		Limits			Unit	Test Conditions	
			Min	Typ	Max			
V_{IH}	Input HIGH Voltage		2.0			V	Guaranteed Input HIGH Voltage	
V_{IL}	Input LOW Voltage				0.8	V	Guaranteed Input LOW Voltage	
V_{IK}	Input Clamp Diode Voltage				-1.2	V	$V_{CC} = \text{MIN}$, $I_{IN} = -18 \text{ mA}$	
V_{OH}	Output HIGH Voltage	54, 74	2.5			V	$I_{OH} = -1.0 \text{ mA}$	$V_{CC} = 4.50 \text{ V}$
		74	2.7			V	$I_{OH} = -1.0 \text{ mA}$	$V_{CC} = 4.75 \text{ V}$
V_{OL}	Output LOW Voltage				0.5	V	$I_{OL} = 20 \text{ mA}$	$V_{CC} = \text{MIN}$
I_{IH}	Input HIGH Current				20	μA	$V_{CC} = \text{MAX}$, $V_{IN} = 2.7 \text{ V}$	
					0.1	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 7.0 \text{ V}$	
I_{IL}	Input LOW Current				-0.6	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 0.5 \text{ V}$	
I_{OS}	Output Short Circuit Current (Note 2)		-60		-150	mA	$V_{CC} = \text{MAX}$, $V_{OUT} = 0 \text{ V}$	
I_{CC}	Power Supply Current Total, Output HIGH				5.6	mA	$V_{CC} = \text{MAX}$, $V_{IN} = \text{GND}$	
	Total, Output LOW				13	mA	$V_{CC} = \text{MAX}$, $V_{IN} = \text{Note 3}$	


NOTES:

1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.
3. Measured with one input high, one input low for each gate.

AC CHARACTERISTICS

Symbol	Parameter	54/74F		54F		74F		Unit
		T _A = +25°C V _{CC} = +5.0 V C _L = 50 pF		T _A = −55°C to +125°C V _{CC} = 5.0 V ± 10% C _L = 50 pF		T _A = 0°C to 70°C V _{CC} = 5.0 V ± 10% C _L = 50 pF		
		Min	Max	Min	Max	Min	Max	
tPLH	Propagation Delay	2.5	5.5	2.5	7.5	2.5	6.5	ns
tPHL	Propagation Delay	1.5	4.3	1.5	6.5	1.5	5.3	ns

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