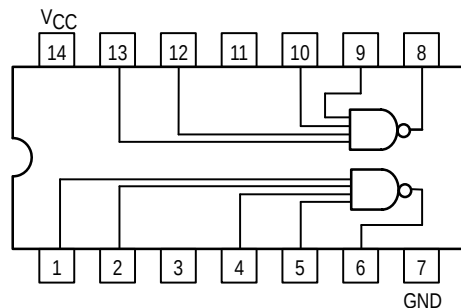


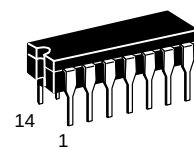


DUAL 4-INPUT NAND GATE

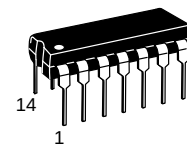


MC54/74F20

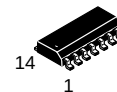
DUAL 4-INPUT NAND GATE
FAST™ SCHOTTKY TTL



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

MC54/74F20

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			1.4	mA	$V_{CC} = \text{MAX}$, $V_{IN} = \text{GND}$
	Total, Output LOW			5.1	mA	$V_{CC} = \text{MAX}$, $V_{IN} = \text{Open}$

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.

AC CHARACTERISTICS

Symbol	Parameter	54/74F		54F		74F		Unit
		T _A = +25°C		T _A = −55°C to +125°C		T _A = 0°C to 70°C		
		V _{CC} = +5.0 V		V _{CC} = 5.0 V ± 10%		V _{CC} = 5.0 V ± 10%		
		C _L = 50 pF		C _L = 50 pF		C _L = 50 pF		
		Min	Max	Min	Max	Min	Max	
t _{PLH}	Propagation Delay	2.4	5.0	2.0	7.0	2.4	6.0	ns
t _{PHL}	Propagation Delay	1.5	4.3	1.5	6.5	1.5	5.3	ns

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