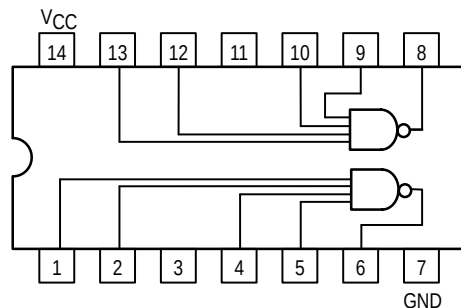


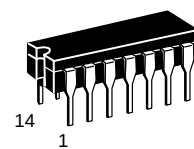


DUAL 4-INPUT NAND GATE

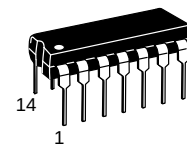


MC54/74F20

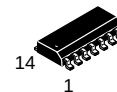
DUAL 4-INPUT NAND GATE
FAST™ SCHOTTKY TTL



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:

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- 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 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	
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