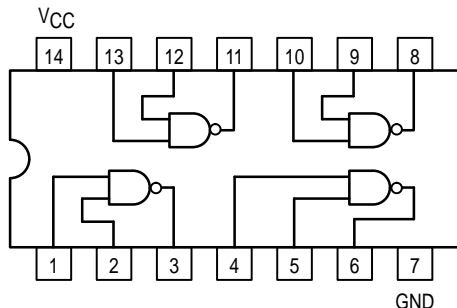


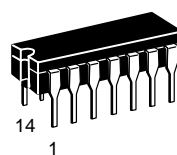


# QUAD 2-INPUT NAND GATE

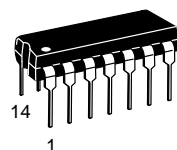


## MC54/74F00

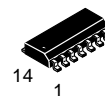
**QUAD 2-INPUT NAND GATE**  
**FAST™ SCHOTTKY TTL**



**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

DataSheet4U.com

DataSheet4U.com

### GUARANTEED OPERATING RANGES

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

## MC54/74F00

### 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	$\mu\text{A}$	$V_{CC} = \text{MAX}$ , $V_{IN} = 2.7 \text{ V}$
				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			2.8	mA	$V_{CC} = \text{MAX}$ , $V_{IN} = \text{GND}$
	Total, Output LOW			10.2	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
		$T_A = +25^\circ\text{C}$		$T_A = -55^\circ\text{C to } +125^\circ\text{C}$		$T_A = 0^\circ\text{C to } 70^\circ\text{C}$		
		Min	Max	Min	Max	Min	Max	
$t_{PLH}$	Propagation Delay	$V_{CC} = +5.0 \text{ V}$ $C_L = 50 \text{ pF}$		$V_{CC} = 5.0 \text{ V} \pm 10\%$ $C_L = 50 \text{ pF}$		$V_{CC} = 5.0 \text{ V} \pm 10\%$ $C_L = 50 \text{ pF}$		ns
$t_{PHL}$	Propagation Delay	2.4	5.0	2.0	7.0	2.4	6.0	ns
		1.5	4.3	1.5	6.5	1.5	5.3	ns