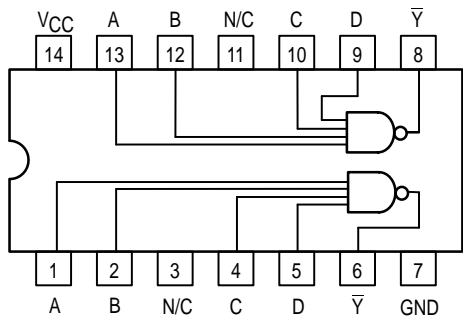




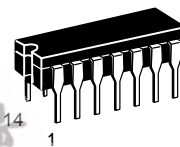
# DUAL 4-INPUT NAND BUFFER



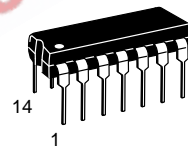
**MC74F40**

**DUAL 4-INPUT NAND BUFFER**

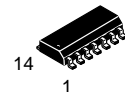
**FAST™ SCHOTTKY TTL**



**J SUFFIX**  
CERAMIC  
CASE 632-08



**N SUFFIX**  
PLASTIC  
CASE 646-06



**D SUFFIX**  
SOIC  
CASE 751A-02

**ORDERING INFORMATION**

MC74FXXJ Ceramic  
MC74FXXN Plastic  
MC74FXXD SOIC

**GUARANTEED OPERATING RANGES**

Symbol	Parameter	74	Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage	74	4.5	5.0	5.5	V
T <sub>A</sub>	Operating Ambient Temperature Range	74	0	25	70	°C
I <sub>OH</sub>	Output Current — High	74			-15	mA
I <sub>OL</sub>	Output Current — Low	74			64	mA

# MC74F40

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions	
		Min	Typ	Max			
V <sub>IH</sub>	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage	
V <sub>IL</sub>	Input LOW Voltage			0.8	V	Guaranteed Input LOW Voltage	
V <sub>IK</sub>	Input Clamp Diode Voltage			-1.2	V	V <sub>CC</sub> = MIN, I <sub>IN</sub> = -18 mA	
V <sub>OH</sub>	Output HIGH Voltage	74	2.0		V	I <sub>OH</sub> = -15 mA	V <sub>CC</sub> = 4.50 V
		74	2.4		V	I <sub>OH</sub> = -1.0 mA	
		74	2.7		V	I <sub>OH</sub> = -1.0 mA	V <sub>CC</sub> = 4.75 V
V <sub>OL</sub>	Output LOW Voltage			0.55	V	I <sub>OL</sub> = 64 mA	V <sub>CC</sub> = MIN
I <sub>IH</sub>	Input HIGH Current			20	μA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 2.7 V	
				0.1	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 7.0 V	
I <sub>IL</sub>	Input LOW Current			-1.2	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.5 V	
I <sub>OS</sub>	Output Short Circuit Current (Note 2)	-100		-225	mA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0 V	
I <sub>CC</sub>	Power Supply Current Total, Output HIGH			4	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = GND	
	Total, Output LOW			17	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 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	74F		74F		Unit
		T <sub>A</sub> = +25°C		T <sub>A</sub> = 0°C to 70°C		
		Min	Max	Min	Max	
t <sub>PLH</sub>	Propagation Delay	V <sub>CC</sub> = +5.0 V C <sub>L</sub> = 50 pF		V <sub>CC</sub> = 5.0 V ± 10% C <sub>L</sub> = 50 pF		ns
t <sub>PHL</sub>	Propagation Delay	1.5	6.0	1.5	7.0	ns
		1.0	5.0	1.0	5.5	ns

## FUNCTION TABLE

Inputs				Output
A	B	C	D	$\bar{Y}$
L	X	X	X	H
X	L	X	X	H
X	X	L	X	H
X	X	X	L	H
H	H	H	H	L

H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Don't Care