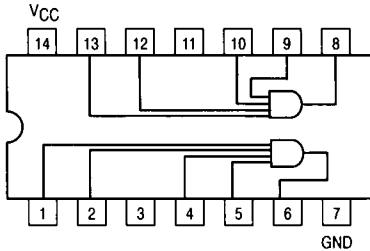




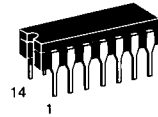
DUAL 4-INPUT AND GATE

CONNECTION DIAGRAM

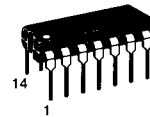


MC54/74F21

**DUAL 4-INPUT AND 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

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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

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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} = MIN, I _{IN} = -18 mA
V _{OH}	Output HIGH Voltage	54, 74	2.5		V	I _{OH} = -1.0 mA, V _{CC} = 4.50 V
		74	2.7		V	I _{OH} = -1.0 mA, V _{CC} = 4.75 V
V _{OL}	Output LOW Voltage			0.5	V	I _{OL} = 20 mA, V _{CC} = MIN
I _{IH}	Input HIGH Current			20	μA	V _{CC} = MAX, V _{IN} = 2.7 V
				0.1	mA	V _{CC} = MAX, V _{IN} = 7.0 V
I _{IL}	Input LOW Current			-0.6	mA	V _{CC} = MAX, V _{IN} = 0.5 V
I _{OS}	Output Short Circuit Current (Note 2)	-60		-150	mA	V _{CC} = MAX, V _{OUT} = 0 V
I _{CC}	Power Supply Current Total, Output HIGH			4.1	mA	V _{CC} = MAX, V _{IN} = Open
	Total, Output LOW			6.4	mA	V _{CC} = MAX, V _{IN} = GND

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.

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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		
		Min	Max	Min	Max	Min	Max	
t _{PLH}	Propagation Delay	V _{CC} = +5.0 V C _L = 50 pF		V _{CC} = 5.0 V ± 10% C _L = 50 pF		V _{CC} = 5.0 V ± 10% C _L = 50 pF		ns
t _{PHL}	Propagation Delay	2.0	5.6	2.0	7.5	2.0	6.6	ns
t _{PHL}	Propagation Delay	2.5	5.3	2.0	7.5	2.5	6.3	ns