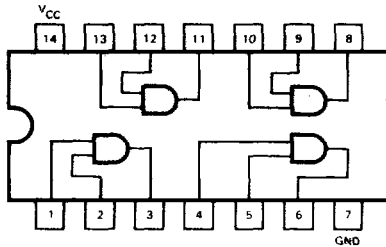




# MC54F/74F08

## QUAD 2-INPUT AND GATE



J Suffix — Case 632-08 (Ceramic)  
 N Suffix — Case 646-06 (Plastic)  
 D Suffix — Case 751A-02 (SOIC)

QUAD 2-INPUT AND GATE  
 FAST™ SCHOTTKY TTL

### 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 74	-55 0	25 25	125 70	°C
I <sub>OH</sub>	Output Current — High	54, 74			-1.0	mA
I <sub>OL</sub>	Output Current — Low	54, 74			20	mA

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

SYMBOL	PARAMETER	LIMITS			UNITS	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	54, 74	2.5		V	I <sub>OH</sub> = -1.0 mA, V <sub>CC</sub> = 4.50 V
		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			0.5	V	I <sub>OL</sub> = 20 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			-0.6	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.5 V
I <sub>OS</sub>	Output Short Circuit Current (Note 2)	-60		-150	mA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0 V
I <sub>CC</sub>	Power Supply Current Total, Output HIGH			8.3	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = Open
	Total, Output LOW			12.9	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 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.

# MC54F08/74F08

## AC CHARACTERISTICS

SYMBOL	PARAMETER	54/74F T <sub>A</sub> = +25°C V <sub>CC</sub> = +5.0 V C <sub>L</sub> = 50 pF		54F T <sub>A</sub> = -55°C to +125°C V <sub>CC</sub> = 5.0 V ± 10% C <sub>L</sub> = 50 pF		74F T <sub>A</sub> = 0°C to 70°C V <sub>CC</sub> = 5.0 V ± 10% C <sub>L</sub> = 50 pF		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
t <sub>PLH</sub>	Propagation Delay	3.0	5.6	2.5	7.5	3.0	6.6	ns
t <sub>PHL</sub>	Propagation Delay	2.5	5.3	2.0	7.5	2.5	6.3	ns

## AC TEST CIRCUIT

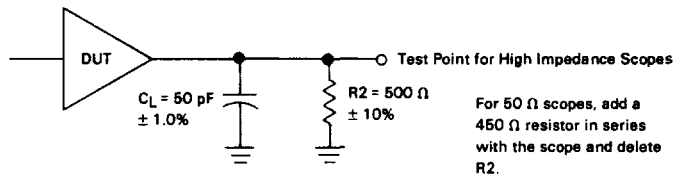


Fig. 1