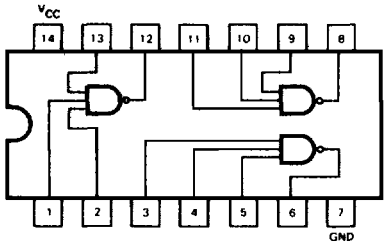
MOTOROLA

MC54F/74F10

TRIPLE 3-INPUT NAND GATE



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

TRIPLE 3-INPUT NAND GATE

FAST™ SCHOTTKY TTL

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 74	-55 0	25 25	125 70	°C
I_{OH}	Output Current — High	54, 74			-1.0	mA
I_{OL}	Output Current — Low	54, 74			20	mA

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER		LIMITS MIN	LIMITS TYP	LIMITS MAX	UNITS	TEST CONDITIONS	
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				2.1	mA	V_{CC} = MAX, V_{IN} = GND	
	Total, Output LOW				7.7	mA	V_{CC} = MAX, V_{IN} = Open	

NOTES:
1. For conditions shown as MIN or MAX, use the appropiate value specified under recommended operating conditions for the applicable device type.
2. Not more than one output should be shorted at a time, nor for more than 1 second.

AC CHARACTERISTICS

SYMBOL	PARAMETER	54/74F T_A = +25°C V_{CC} = +5.0 V C_L = 50 pF		54F T_A = -55°C to +125°C V_{CC} = 5.0 V ± 10% C_L = 50 pF		74F T_A = 0°C to 70°C V_{CC} = 5.0 V ± 10% C_L = 50 pF		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
tPLH	Propagation Delay	2.4	5.0	2.0	7.0	2.4	6.0	ns
tPHL	Propagation Delay	1.5	4.3	1.5	6.5	1.5	5.3	ns

AC TEST CIRCUIT

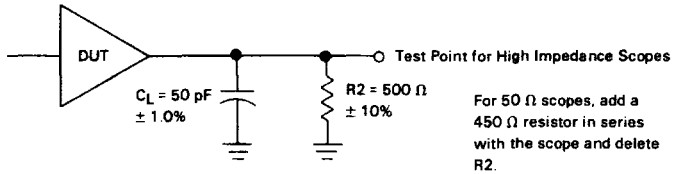


Fig. 1