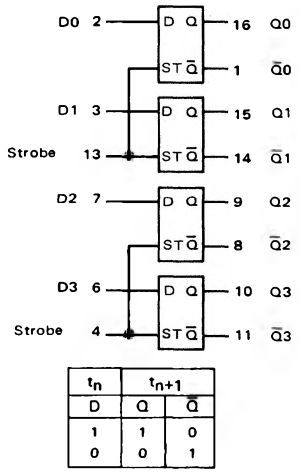
MC7475P*



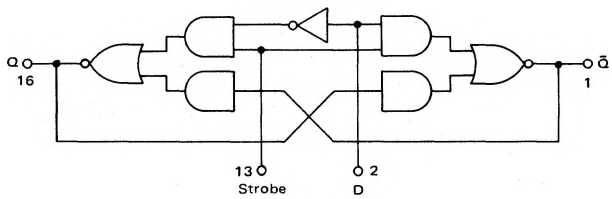
t_n	t_{n+1}	
D	Q	Q̄
1	1	0
0	0	1

Input Loading Factor:
D = 2
Strobe = 4

Output Loading Factor = 10
Total Power Dissipation = 160 mW typ/pkg
Propagation Delay Time = 30 ns typ

This device consists of four bistable latch circuits in one 16-pin package. Both Q and Q̄ outputs are available on all four devices. When the strobe is in the logic "1" state, the Q output will follow the state of the data input. When the strobe goes to the logic "0" state, the Q output will retain the state of the data input at the time of the transition from the logic "1" state.

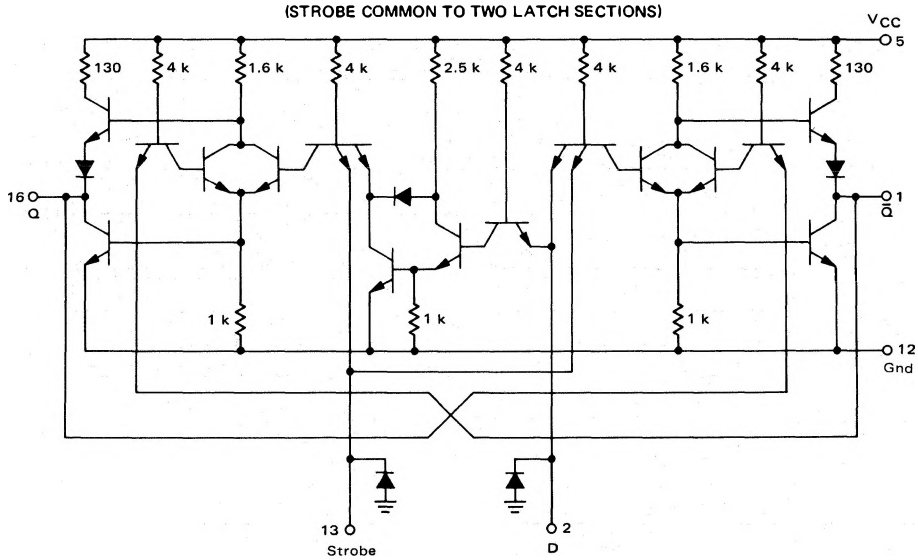
LOGIC DIAGRAM
(1/4 OF DEVICE SHOWN; STROBE COMMON TO TWO LATCH SECTIONS)



V_{CC} = Pin 5
Gnd = Pin 12
16 – Pin Package

* P suffix = 16-pin plastic package (Case 612)
See General Information section for package outline dimensions.

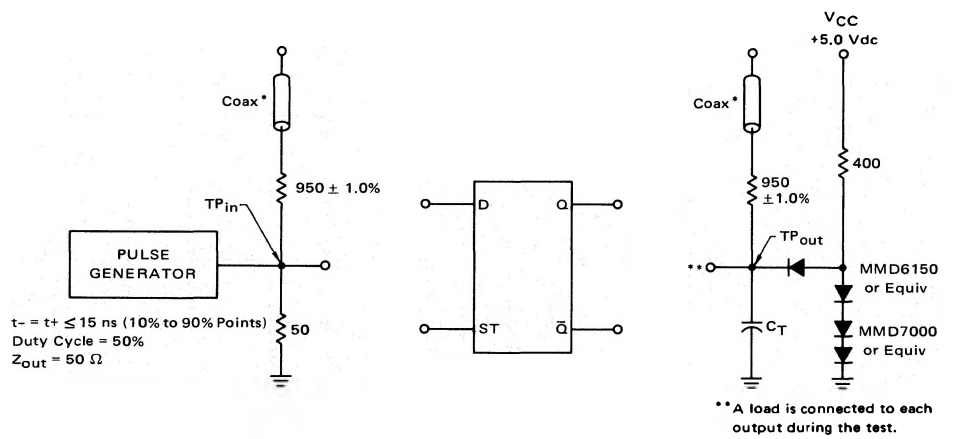
1/4 OF CIRCUIT SHOWN
(STROBE COMMON TO TWO LATCH SECTIONS)



OPERATING CHARACTERISTICS

Data present on the D input between the setup and hold times will be transferred to the Q output when the strobe input changes from the logic "0" state to the logic "1" state. As long as the strobe remains in the logic "1" state, the Q output will follow the state of the D input. When the strobe input changes from the logic "1" state to the logic "0" state, data present on the D input between the setup and hold times will be retained on the Q output until the strobe returns to the logic "1" state.

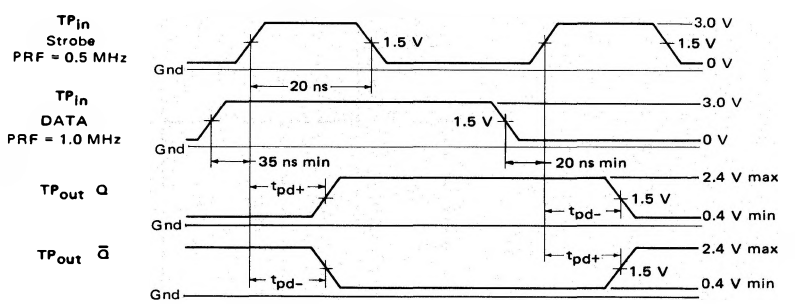
SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



Two pulse generators are required and must be slaved together to provide the waveforms shown.

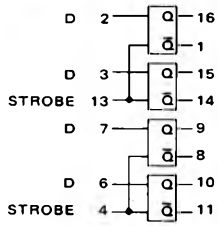
*The coax delays from input to scope and output to scope must be matched. The scope must be terminated in 50-ohm impedance. The 950-ohm resistor and the scope termination impedance constitute a 20:1 attenuator probe. Coax shall be CT-070-50 or equivalent.

C_T = 15 pF = total parasitic capacitance, which includes probe, wiring, and load capacitances.



ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one latch. The other latches are tested in the same manner.



Characteristic	Symbol	Pin Under Test	MC7475 Test Limits 0 to +70°C Min	Max	Unit	TEST CURRENT/VOLTAGE VALUES (All Temperatures) mA I_{OL}	I_{OH}	Volts V_{IL}	V_{IH}	V_{IHH}	V_{R1}	V_{th1}	V_{th0}	V_{CC}	V_{CCL}	V_{CCH}	Gnd
						16	-0.4	0.4	2.4	5.5	4.5	2.0	0.8	5.0	4.75	5.25	
						TEST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW:											
Input																	
Forward Current	I_F	2	-	-3.2	mAdc	-	-	2	-	-	13	-	-	-	-	5	12
		13	-	-3.2	mAdc	-	-	13	-	-	-	-	-	-	-	5	12
Leakage Current	I_{R1}	2	-	80	μAdc	-	-	-	2	-	-	-	-	-	-	5	12,13
		13	-	80	μAdc	-	-	-	13	-	-	-	-	-	-	5	2,3,12
	I_{R2}	2	-	1.0	mAdc	-	-	-	-	2	-	-	-	-	-	5	12,13
		13	-	1.0	mAdc	-	-	-	-	13	-	-	-	-	-	5	2,3,12
Output																	
Output Voltage	V_{OL}	1	-	0.4	Vdc	1	-	-	-	-	-	2,13	-	-	5	-	12
		16	-	0.4	Vdc	16	-	-	-	-	-	13	2	-	5	-	12
	V_{OH}	1	2.4	-	Vdc	-	1	-	-	-	-	13	2	-	5	-	12
		16	2.4	-	Vdc	-	16	-	-	-	-	2,13	-	-	5	-	12
Short-Circuit Current	I_{SC}	1	-18	-57	mAdc	-	-	-	-	-	13	-	-	-	-	5	1,2,12
		16	-18	-57	mAdc	-	-	-	-	-	2,13	-	-	-	-	5	12,16
Power Requirements (Total Device)																	
Power Supply Drain	I_{PD}	5	-	49	mAdc	-	-	-	-	-	-	-	-	5	-	-	2,3,4,6,7,12,13