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NTE9370 Integrated Circuit HTL, Quad D-Type Flip-Flop

Description:

Four D-type flip-flops utilizing a common clock line make up the NTE9370. Each flip-flop has complementary passive pull up outputs with a single D input. This circuit is ideal as a quad latch for temporary storage of 4-bit binary numbers.

Data is transferred from D inputs to outputs when the clock line is low. With the clock line high, output data is held and D inputs are ignored.

Absolute Maximum Ratings:

Supply Voltage:

Continuous 16.5V
 Pulsed (< 0.1sec) 18V

Input Voltage -0.5V to 16.5V

Voltage Applied to Output -0.5V to +16.5V

Continuous Sink Current ($T_A = +25^\circ\text{C}$):

Continuous 15mA
 Surge (< 1sec) 20mA

Output Short Circuit Duration to GND Continuous

Operating Temperature Range, T_{opr} -30° to $+85^\circ\text{C}$

Storage Temperature Range, T_{stg} -55° to $+100^\circ\text{C}$

Lead Temperature (During Soldering, 1/16" from case, 10sec max), T_L $+300^\circ\text{C}$

Electrical Characteristics: ($V_{CC} = 12V \pm 1V$ unless otherwise specified)

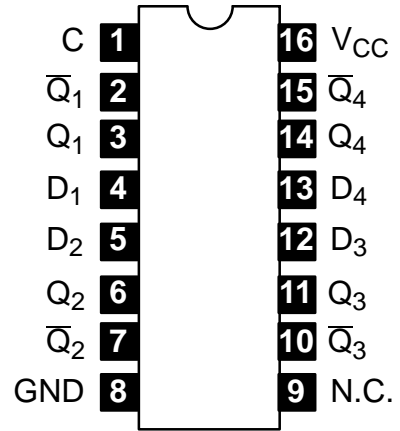
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Threshold Voltage, Low	V_{IL}	Guaranteed input low threshold for all inputs	5	-	-	V
Input Threshold Voltage, High	V_{IH}	Guaranteed input high threshold for all inputs	-	-	6.5	V
Input Current, Low (1 Unit Load)	I_{IL}	$V_{CC} = \text{Max}, V_{IN} = V_{OL1} \text{ max}$	-	-	2.1	mA
Input Leakage Current (1 Unit Load)	I_{IH}	$V_{CC} = \text{Max}, V_{IN} = V_{CC}$	-	-	10	μA
Output Low Voltage	V_{OL}	$V_{CC} = \text{Min}, V_{IL} = 5V, V_{IH} = 6.5V,$ $I_{OL} = \text{F.O.} \times \text{U.L.}$	-	-	1.5	V
Output High Voltage	V_{OH}		10	-	-	V
Test Supply Voltage	V_{CC}		11	12	13	V

Note 1. F.O. is fanout in unit loads (U.L.). A unit load is defined by the above input specifications.

Truth Table

C	D	Q^{n+1}
1	1	Q^n
1	0	Q^n
0	1	1
0	0	0

Pin Connection Diagram



<u>Pins</u>	<u>Function</u>	<u>Loading</u>
D	Data Inputs	2 UL
C	Clock Input	1 UL
Q, Q	Outputs	5 UL at 1.5V

