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NTE74132
Integrated Circuit
TTL – Quad 2–Input Positive NAND Schmitt Trigger

Description:

The NTE74132 is a quad 2–input positive NAND Schmitt trigger in a 14–Lead plastic DIP type package. Each circuit functions as a 2–input NAND gate, but because of the Schmitt action, it has different input threshold levels for positive (V_{T+}) going and for negative going (V_{T-}) signals.

This device is temperature compensated and can be triggered from the slowest of input ramps and still give clear, jitter–free output signals.

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC} 7V
DC Input Voltage, V_{IN} 5.5V
Operating Temperature Range, T_A . . . . . 0°C to +70°C
Storage Temperature Range, T_{stg} . . . . . –65°C to +150°C

Note 1. Unless otherwise specified, all voltages are referenced to GND.

Recommended Operating Conditions:

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	4.75	5.0	5.25	V
High–Level Output Current	I_{OH}	–	–	–0.8	mA
Low–Level Output Current	I_{OL}	–	–	16	mA
Operating Temperature Range	T_A	0	–	+70	°C

Electrical Characteristics: (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Positive–Going Threshold Voltage	V_{T+}	V_{CC} = 5V	1.5	1.7	2.0	V
Negative–Going Threshold Voltage	V_{T-}	V_{CC} = 5V	0.6	0.9	1.1	V
Hysteresis Voltage	V_H	V_{CC} = 5V	0.4	0.8	–	V
Input Clamp Voltage	V_{IK}	V_{CC} = MIN, I_I = –12mA	–	–	–1.5	V

Note 2. .For conditions shown as MIN or MAX, use the appropriate value specified under “Recommended Operation Conditions”.
Note 3. All typical values are at V_{CC} = 5V, T_A = +25°C.

Electrical Characteristics (Cont'd): (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
High Level Output Voltage	V_{OH}	V_{CC} = MIN, V_I = 0.6V, I_{OH} = −0.8mA	2.4	3.4	–	V
Low Level Output Voltage	V_{OL}	V_{CC} = MIN, V_I = 2V, I_{OL} = 16mA	–	0.2	0.4	V
Positive−Going Threshold Current	I_{T+}	V_{CC} = 5V, V_I = V_{T+}	–	−0.43	–	mA
Negative−Going Threshold Current	I_{T-}	V_{CC} = 5V, V_I = V_{T-}	–	−0.56	–	mA
Input Current	I_I	V_{CC} = MAX, V_I = 5.5V	–	–	1	mA
High Level Input Current	I_{IH}	V_{CC} = MAX, V_I = 2.4V	–	–	40	μA
Low Level Input Current	I_{IL}	V_{CC} = MAX, V_I = 0.4V	–	−0.8	−1.2	mA
Short−Circuit Output Current	I_{OS}	V_{CC} = MAX, Note 4	−18	–	−55	mA
High Level Supply Current	I_{CCH}	V_{CC} = MAX	–	15	24	mA
Low Level Supply Current	I_{CCL}	V_{CC} = MAX	–	26	40	mA

Note 2. .For conditions shown as MIN or MAX, use the appropriate value specified under "Recommended Operation Conditions".

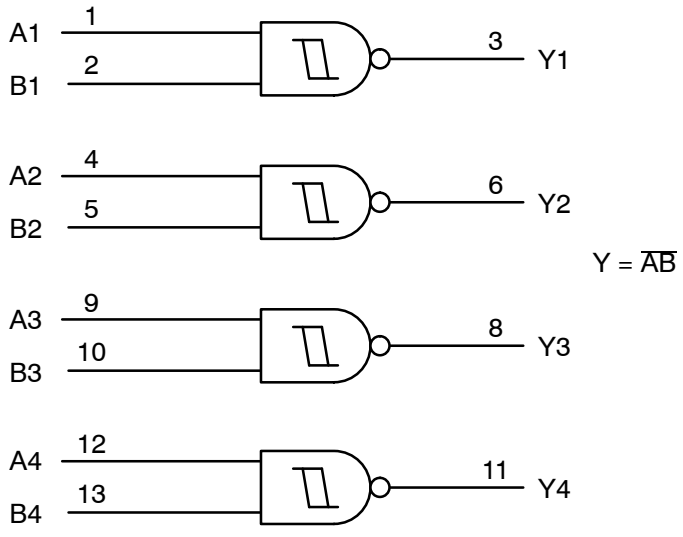
Note 3. All typical values are at V_{CC} = 5V, T_A = +25°C.

Note 4. Not more than one output should be shorted at a time.

Switching Characteristics: (V_{CC} = 5V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time From Any Input to Y Output)	t_{PLH}	R_L = 400Ω, C_L = 15pF	–	15	22	ns
	t_{PHL}		–	15	22	ns

Logic Diagram



Pin14 = V_{CC}
Pin7 = GND

Pin Connection Diagram