ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE74LS136
Integrated Circuit
TTL – Quad 2–Input Exclusive–OR Gate with Open Collector Outputs

Description:

The NTE74LS136 contains four independent 2–Input gates in a 14–Lead plastic DIP type package, each of which performs the logic exclusive–OR function.

Absolute Maximum Ratings: (Note 1)

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

Note 1. The “Absolute Maximum Ratings” are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the “Electrical Characteristics” tables are not guaranteed at the “Absolute Maximum Ratings”. The “Recommended Operating Conditions” table will define the conditions for actual device operation.

Recommended Operating Conditions:

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	4.75	5.0	5.25	V
High Level Input Voltage	V_{IH}	2	–	–	V
Low Level Input Voltage	V_{IL}	–	–	0.8	V
Low Level Output Curent	I_{OL}	–	–	8	mA
Operating Temperature Range	T_A	0	–	+70	°C

Electrical Characteristics: (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Clamp Voltage	V_{IK}	V_{CC} = MIN, I_I = –18mA	–	–	–1.5	V
High Level Output Current	I_{OH}	V_{CC} = MIN, V_O = 5.5V	–	–	100	μA
Low Level Output Voltage	V_{OL}	V_{CC} = MIN, V_{IH} = 2V, I_{OL} = 4mA	–	0.25	0.4	V
		V_{CC} = MIN, V_{IH} = 2V, I_{OL} = 8mA	–	0.35	0.5	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
Input Current	I_I	V_{CC} = MAX, V_I = 7V	–	–	0.2	mA
High Level Input Current	I_{IH}	V_{CC} = MAX, V_I = 2.7V	–	–	40	μA
Low Level Input Current	I_{IL}	V_{CC} = MAX, V_I = 0.4V	–	–	–0.6	mA
Supply Current	I_{CC}	V_{CC} = MAX	–	–	10	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.

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

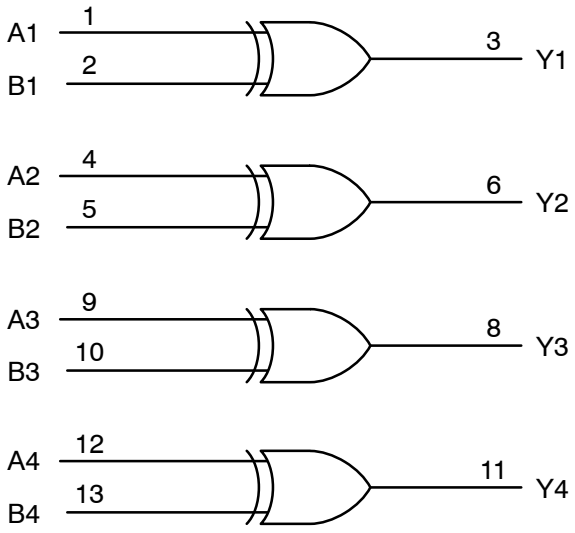
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time	t_{PLH}, t_{PHL}	R_L = 2kΩ, C_L = 15pF	–	–	23	ns

Truth Table:

Inputs		Output
A	**B**	**Y**
L	L	L
L	H	H
H	L	H
H	H	L

H = HIGH Voltage Level
L = LOW Voltage Level

Logic Diagram



Pin14 = V_{CC}
Pin7 = GND

Pin Connection Diagram