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NTE74LS49
Integrated Circuit
TTL − BCD−to−Seven−Segment Decoder/Driver with Open Collector Outputs

Description:

The NTE74LS49 is a BCD−to−Seven−Segment Decoder/Driver in a 14−Lead plastic DIP type package that features active−high outputs designed for driving lamp buffers or common−cathode VLEDs. This device incorporates a direct blanking input. Display patterns for BCD input count above 9 are unique symbols to authenticate input conditions.

The NTE74LS49 contains an overriding blanking input ($\overline{BI}$) which can be used to control the lamp intensity by pulsing or to inhibit the outputs. Inputs and outputs are entirely compatible for use with TTL logic outputs.

Features:

- Open−Collector Outputs Drive Indicators Directly
- Blanking Input

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC} 7V
Input Voltage 7V
Current Forced Into Any Output in the Off−State 1mA
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 Voltage	V_{OH}	−	−	5.5	V
Low−Level Output Current	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
High−Level Input Voltage	V_{IH}		2	−	−	V
Low−Level Input Voltage	V_{IL}		−	−	0.8	V
Input Clamp Voltage	V_{IK}	V_{CC} = MIN, I_I = −18mA	−	−	−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 Current	I_{OH}	V_{CC} = MIN, V_{IH} = 2V, V_{IL} = MAX, V_{OH} = 5.5V		–	–	250	μA
Low Level Output Voltage	V_{OL}	V_{CC} = MIN, V_{IH} = 2V, V_{IL} = MAX	I_{OL} = 4mA	–	0.25	0.4	V
			I_{OL} = 8mA	–	0.35	0.5	V
Input Current	I_I	V_{CC} = MAX, V_I = 7V		–	–	0.1	mA
High Level Input Current	I_{IH}	V_{CC} = MAX, V_I = 2.7V		–	–	20	μA
Low Level Input Current	I_{IL}	V_{CC} = MAX, V_I = 0.4V		–	–	–0.4	mA
Supply Current	I_{CC}	V_{CC} = MAX, Note 4		–	8	15	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. I_{CC} is measured with all outputs open and all inputs at 4.5V.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time from A Input	t_{PHL}, t_{PLH}	R_L = 2kΩ, C_L = 15pF	–	–	100	ns
Propagation Delay Time from $\overline{RBI}$ Input	t_{PHL}, t_{PLH}	R_L = 6kΩ, C_L = 15pF	–	–	100	ns

Function Table:

Decimal or Function	Inputs					Outputs							Notes
	D	C	B	A	$\overline{BI}$	a	b	c	d	e	f	g	
0	L	L	L	L	H	H	H	H	H	H	H	L	1
1	L	L	L	H	H	L	H	H	L	L	L	L	
2	L	L	H	L	H	H	H	L	H	H	L	H	
3	L	L	H	H	H	H	H	H	H	L	L	H	
4	L	H	L	L	H	L	H	H	L	L	H	H	
5	L	H	L	H	H	H	L	H	H	L	H	H	
6	L	H	H	L	H	L	L	H	H	H	H	H	
7	L	H	H	H	H	H	H	H	L	L	L	L	
8	H	L	L	L	H	H	H	H	H	H	H	H	
9	H	L	L	H	H	H	H	H	L	L	H	H	
10	H	L	H	L	H	L	L	L	H	H	L	H	
11	H	L	H	H	H	L	L	H	H	L	L	H	
12	H	H	L	L	H	L	H	L	L	L	H	H	
13	H	H	L	H	H	H	L	L	H	L	H	H	
14	H	H	H	L	H	L	L	L	H	H	H	H	
15	H	H	H	H	H	L	L	L	L	L	L	L	
BI	X	X	X	X	L	L	L	L	L	L	L	L	2

H = HIGH Level, L = LOW Level, X = Irrelevant

Note 1. The blanking input ($\overline{BI}$) must be open or held at a high logic level when output functions 0 through 15 are desired.
Note 2. When a low logic level is applied directly to the blanking input ($\overline{BI}$), all segment outputs are low regardless of the level of any other input.

Pin Connection Diagram