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NTE74LS157
Integrated Circuit
TTL – Quad 2–Line–to–1–Line Data Selector/Demultiplexer

Description:

The NTE74LS157 is a quad 1–line–to–4–line data selector/multiplexer in a 16–Lead plastic DIP type package that contains inverters and drivers to supply full on–chip data selection to the four output gates. A separate strobe input is provided. A 4–bit word is selected from one of two sources and is routed to the four outputs. The NTE74LS157 presents true data outputs to minimize propagation delay time.

Features:

- Buffered Inputs and Outputs

Applications:

- Expand Any Data Input Point
- Multiplex Dual Data Buses
- Generate Four Functions of Two variables (One Variable is Common)
- Source Programmable Counters

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC} 7V
DC Input Voltage, V_{IN} 7V
Power Dissipation, P_D 49mW
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}	–	–	–400	μA
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
High Level Output Voltage	V_{OH}	V_{CC} = MIN, V_{IH} = 2V, V_{IL} = MAX, I_{OH} = –400μA		2.7	3.4	–	V
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	$\overline{A}$/B or $\overline{G}$	–	–	0.2	mA
			A or B	–	–	0.1	mA
High Level Input Current	I_{IH}	V_{CC} = MAX, V_I = 2.7V	$\overline{A}$/B or $\overline{G}$	–	–	40	μA
			A or B	–	–	20	μA
Low Level Input Current	I_{IL}	V_{CC} = MAX, V_I = 0.4V	$\overline{A}$/B or $\overline{G}$	–	–	–0.8	mA
			A or B	–	–	–0.4	mA
Short–Circuit Output Current	I_{OS}	V_{CC} = MAX, Note 4		–20	–	–100	mA
Supply Current	I_{CC}	V_{CC} = MAX, Note 5		–	9.7	16	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 and duration of short–circuit should not exceed one second.

Note 5. I_{CC} is measured with 4.5V applied to all inputs and all outputs open.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time (From Data Inputs to Y Output)	t_{PLH}	R_L = 2kΩ, C_L = 15pF	–	9	14	ns
	t_{PHL}		–	9	14	ns
Propagation Delay Time (From Strobe $\overline{G}$ Input to Y Output)	t_{PLH}		–	13	20	ns
	t_{PHL}		–	14	21	ns
Propagation Delay Time (From Select $\overline{A}$/B Input to Y Output)	t_{PLH}		–	15	23	ns
	t_{PHL}		–	18	27	ns

Function Table:

Inputs				Output
Strobe $\overline{G}$	Select $\overline{A}$/B	A	B	Y
H	X	X	X	H
L	L	L	X	H
L	L	H	X	L
L	H	X	L	H
L	H	X	H	L

H = HIGH Level

L = LOW Level

X = Don’t Care

Pin Connection Diagram