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NTE74153
Integrated Circuit
TTL – Dual 4–Line–to–1–Line Data Selector/Multiplexer

Description:

The NTE74153 is a dual 4–line–to–1–line data selector/multiplexer in a 16–Lead plastic DIP type package that contains inverters and drivers to supply fully complementary, on–chip, binary decoding data selection to the AND–OR gates. Separate strobe inputs are provided for each of the two four–line sections.

Features:

- Permits Multiplexing from N Lines to One Line
- Performs Parallel–to–Serial Conversion
- Strobe (Enable) Line Provided fo cascading (N Lines to n Lines)
- High–Fan–Out, Low–Impedance, Totem–Pole Outputs
- Compatible with most TTL Circuits

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC} 7V
DC Input Voltage, V_{IN} 5.5V
Power Dissipation, P_D 180mW
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}	–	–	–800	μA
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
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 = −12mA	–	–	−1.5	V
High Level Output Voltage	V_{OH}	V_{CC} = MIN, V_{IH} = 2V, V_{IL} = 0.8V, I_{OH} = −800μA	2.4	3.4	–	V
Low Level Output Voltage	V_{OL}	V_{CC} = MIN, V_{IH} = 2V, V_{IL} = 0.8V, I_{OL} = 16mA	–	0.2	0.4	V
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	–	–	−1.6	mA
Short−Circuit Output Current	I_{OS}	V_{CC} = MAX, Note 4	−18	–	−57	mA
Supply Current	I_{CCL}	V_{CC} = MAX, Outputs Open, Note 5	–	36	60	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.

Note 5. I_{CCL} is measured with the outputs open and all inputs grounded.

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 Input to Y Output)	t_{PLH}	R_L = 400Ω, C_L = 30pF	–	12	18	ns
	t_{PHL}		–	15	23	ns
Propagation Delay Time (From Select Input to Y Output)	t_{PLH}		–	22	34	ns
	t_{PHL}		–	22	34	ns
Propagation Delay Time (From Strobe $\overline{G}$ Input to Y Output)	t_{PLH}		–	19	30	ns
	t_{PHL}		–	15	23	ns

Function Table:

Inputs						Strobe	Output
Select		Data					
B	A	C0	C1	C2	C3	$\overline{G}$	Y
X	X	X	X	X	X	H	L
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

Select inputs A and B are common to both sections.

H = HIGH Level

L = LOW Level

X = Don’t Care

Pin Connection Diagram