HD74HC253 ● Dual 4-to-1-line Data Selectors/Multiplexers (with 3-state outputs)

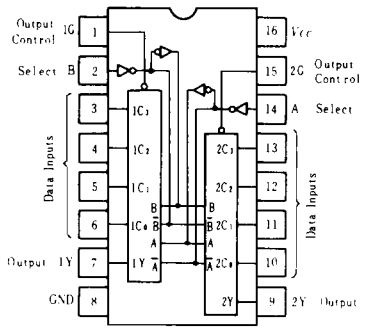
The large output drive and 3-state features of this device make it ideally suited for interfacing with bus lines in bus organized systems. When the output control input is taken high, the multiplexer outputs are sent into a high impedance state.

When the output control is held low, the associated multiplexer chooses the correct output channel for the given input signals determined by the select A and B inputs.

■ FEATURES

- High Speed Operation: t_{pd} (Data to Y) = 18ns typ. (C_L = 50pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: Vcc = 2 ~ 6V
- Low Input Current: 1μA max.
- Low Quiescent Supply Current: Icc (static) = 4μA max.

■ PIN ARRANGEMENT



(Top View)

■ FUNCTION TABLE

Select inputs		Data inputs				Output Control	Output
B	A	C_0	C_1	C_2	C_3	G	Y
×	×	×	×	×	×	H	Z
L	L	L	×	×	×	L	L
L	L	H	×	×	×	L	H
L	H	×	L	×	×	L	L
L	H	×	H	×	×	L	H
H	L	×	×	L	×	L	L
H	L	×	×	H	×	L	H
H	H	×	×	×	L	L	L
H	H	×	×	×	H	L	H

Notes) 1. X: irrelevant
2. Address inputs A and B are common to both sections.

■ DC CHARACTERISTICS

Item	Symbol	V_{CC}(V)	Test Conditions		Ta = 25°C min	Ta = 25°C typ	Ta = 25°C max	Ta = −40 ~ +85°C min	Ta = −40 ~ +85°C max	Unit
Input Voltage	V_{IH}	2.0			1.5	—	—	1.5	—	V
		4.5			3.15	—	—	3.15	—	
		6.0			4.2	—	—	4.2	—	
	V_{IL}	2.0			—	—	0.5	—	0.5	V
		4.5			—	—	1.35	—	1.35	
		6.0			—	—	1.8	—	1.8	
Output Voltage	V_{OH}	2.0	V_{in} = V_{IH} or V_{IL}	I_{OH} = −20μA	1.9	2.0	—	1.9	—	V
		4.5			4.4	4.5	—	4.4	—	
		6.0			5.9	6.0	—	5.9	—	
		4.5		I_{OH} = −4mA	4.18	—	—	4.13	—	
		6.0		I_{OH} = −5.2mA	5.68	—	—	5.63	—	
	V_{OL}	2.0	V_{in} = V_{IH} or V_{IL}	I_{OL} = 20μA	—	0.0	0.1	—	0.1	V
		4.5			—	0.0	0.1	—	0.1	
		6.0			—	0.0	0.1	—	0.1	
		4.5		I_{OL} = 4mA	—	—	0.26	—	0.33	
		6.0		I_{OL} = 5.2mA	—	—	0.26	—	0.33	
Off-state Output Current	I_{OZ}	6.0	V_{in} = V_{IH} or V_{IL}, V_{out} = V_{CC} or GND		—	—	±0.5	—	±5.0	μA
Input Current	I_{in}	6.0	V_{in} = V_{CC} or GND		—	—	±0.1	—	±1.0	μA
Quiescent Supply Current	I_{CC}	6.0	V_{in} = V_{CC} or GND, I_{out} = 0μA		—	—	±4.0	—	±40	μA

■ AC CHARACTERISTICS (C_L=50pF, Input t_r=t_f=6ns)

Item	Symbol	V_{CC}(V)	Test Conditions	Ta=25°C			Ta=−40~+85°C		Unit
				min	typ	max	min	max	
Propagation Delay Time	t_{PLH} t_{PHL}	2.0	Data to Y	—	—	125	—	155	ns
		4.5		—	18	25	—	31	
		6.0		—	—	21	—	26	
		2.0	Select to Y	—	—	160	—	200	
		4.5		—	20	32	—	40	
		6.0		—	—	27	—	34	
Output Enable Time	t_{ZL} t_{ZH}	2.0		—	—	100	—	125	ns
		4.5		—	11	20	—	25	
		6.0		—	—	17	—	21	
Output Disable Time	t_{LZ} t_{HZ}	2.0		—	—	150	—	190	ns
		4.5		—	15	30	—	38	
		6.0		—	—	26	—	33	
Output Rise/Fall Time	t_{TLH} t_{THL}	2.0		—	—	75	—	95	ns
		4.5		—	5	15	—	19	
		6.0		—	—	13	—	16	
Input Capacitance	C_{in}	—		—	5	10	—	10	pF