

HD74HC253

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

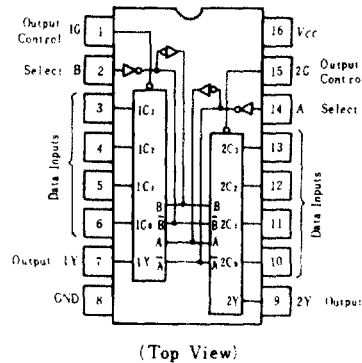
The large output drive and 3-state features of this device make it ideally suited for interfacing with bus lines in bus organized systems. When the output control input is taken high, the multiplexer outputs are sent into a high impedance state.

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. ($C_L = 50\text{pF}$)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: $V_{CC} = 2 \sim 6\text{V}$
- Low Input Current: $1\mu\text{A}$ max.
- Low Quiescent Supply Current: I_{CC} (static) = $4\mu\text{A}$ max.

■ PIN ARRANGEMENT



■ FUNCTION TABLE

Select inputs		Data inputs				Output Control	Output
B	A	C ₀	C ₁	C ₂	C ₃	G	Y
X	X	X	X	X	X	H	Z
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

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

■ DC CHARACTERISTICS

Item	Symbol	$V_{CC}(V)$	Test Conditions	$T_a = 25^\circ\text{C}$			$T_a = -40 \sim +85^\circ\text{C}$		Unit	
				min	typ	max	min	max		
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	$V_{iA} = V_{IH}$ or V_{IL}	$I_{OH} = -20\mu\text{A}$	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		$I_{OH} = -4\text{mA}$	4.18	—	—	4.13	—	
		6.0		$I_{OH} = -5.2\text{mA}$	5.68	—	—	5.63	—	
		V_{OL}		2.0	$V_{iA} = V_{IH}$ or V_{IL}	$I_{OL} = 20\mu\text{A}$	—	0.0	0.1	
	4.5		—	0.0			0.1	—	0.1	
	6.0		—	0.0			0.1	—	0.1	
	4.5		$I_{OL} = 4\text{mA}$	—		—	0.26	—	0.33	
	6.0		$I_{OL} = 5.2\text{mA}$	—		—	0.26	—	0.33	
	Off-state Output Current		I_{OZ}	6.0		$V_{iA} = V_{IH}$ or V_{IL} , $V_{out} = V_{CC}$ or GND	—	—	± 0.5	—
	Input Current	I_{iA}	6.0	$V_{iA} = V_{CC}$ or GND	—	—	± 0.1	—	± 1.0	μA
Quiescent Supply Current	I_{CC}	6.0	$V_{iA} = V_{CC}$ or GND, $I_{out} = 0\mu\text{A}$	—	—	± 4.0	—	± 40	μA	

■ AC CHARACTERISTICS ($C_L=50\text{pF}$, Input $t_r=t_f=6\text{ns}$)

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