

HD100164

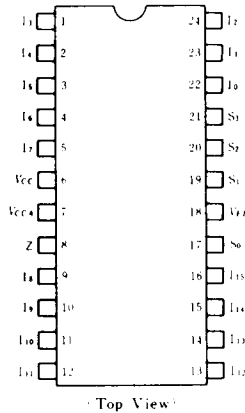
16-input Multiplexer

The HD100164 is a 16-input Multiplexer. Data paths are controlled by four select line (S_0-S_3).

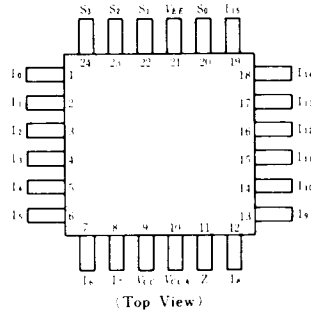
Their decoding is shown in the truth table. Output data polarity is the same as the selected input data.

PIN ARRANGEMENT

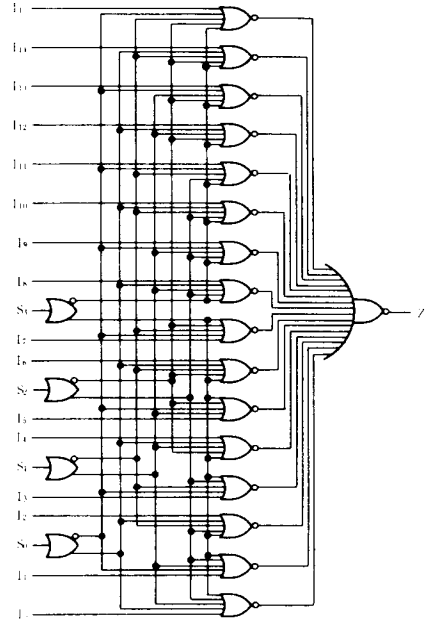
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HD100164F



LOGIC DIAGRAM



TRUTH TABLE

S_0	S_1	S_2	S_3	Z
L	L	L	L	I_0
H	L	L	L	I_1
L	H	L	L	I_2
H	H	L	L	I_3
L	L	H	L	I_4
H	L	H	L	I_5
L	H	H	L	I_6
H	H	H	L	I_7
L	L	L	H	I_8
H	L	L	H	I_9
L	H	L	H	I_{10}
H	H	L	H	I_{11}
L	L	H	H	I_{12}
H	L	H	H	I_{13}
L	H	H	H	I_{14}
H	H	H	H	I_{15}

■DC CHARACTERISTICS ($V_{EE} = -4.2$ to -4.8V , $V_{CC} = V_{CCA} = \text{GND}$, $T_a = 0$ to $+85^\circ\text{C}$)

Item	Symbol	Test Condition		min	typ	max	Unit
Supply Current	I_{EE}	All input open		43	70	98	mA
Input Current	I_{IH}	$V_{IN} = V_{IH \text{ max}}$	I_o input			280	μA
			S_0, S_1 input			240	μA
			S_2, S_3 input			200	μA

Note) As for other items, refer to the "Common DC Characteristics".

■AC CHARACTERISTICS ($V_{EE} = -2.2$ to -2.8V , $V_{CC} = V_{CCA} = 2.0\text{V}$)

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Item	Symbol	Test Condition	0°C		25°C			85°C		Unit
			min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}, t_{PHL}	See test circuit and waveform	In input to output		0.85	2.20	0.90	1.35	2.35	ns
			S_0, S_1 input to output		1.45	3.10	1.45	1.90	3.20	
			S_2, S_3 input to output		1.05	2.40	1.10	1.50	2.50	
Transition Time	t_{TLH}, t_{THL}		0.55	1.60	0.55	0.90	1.60	0.55	1.60	ns

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Item	Symbol	Test Condition	0°C		25°C			85°C		Unit
			min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}, t_{PHL}	See test circuit and waveform	In input to output		0.90	2.00	1.00	1.35	2.15	ns
			S_0, S_1 input to output		1.35	2.90	1.45	2.00	3.00	
			S_2, S_3 input to output		1.00	2.20	1.10	1.50	2.30	
Transition Time	t_{TLH}, t_{THL}		0.50	1.50	0.50	0.90	1.50	0.50	1.50	ns

Note) The circuits in a test socket or mounted on a printed circuit board and transverse air flow greater than 2.5m/s (500 linear fpm) is maintained.