

HD100123

Hex Bus Drivers

The HD100123 contains six bus drivers capable of driving terminated lines with terminations as low as 25Ω. To reduce crosstalk, each output has its respective ground connection and transition times were designed to be longer than on other HD100K devices.

The driver itself performs the positive logic AND of a data input (A, B inputs) and the OR of two

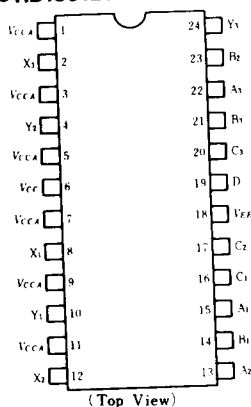
select inputs (C, D inputs).

The output voltage low level is designed to be more negative than normal ECL outputs.

This allows an emitter-follower output transistor to turn off when the termination supply is $-2.0\text{V} \pm 10\%$, and thus present a high impedance to the data bus.

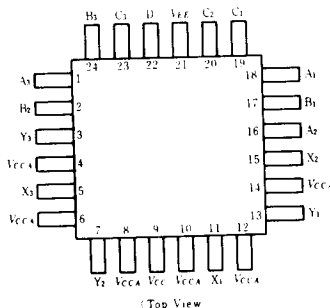
PIN ARRANGEMENT

● HD100123



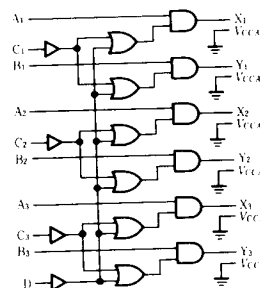
(Top View)

● HD100123F



(Top View)

LOGIC DIAGRAM



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		113	162	235	mA
Input Current	I_{IH}	$V_{IN} = V_{IH \text{ max}}$	A, B, C input	—	—	230	μA
			D input	—	—	330	μA
Output Voltage	I_{IL}	$V_{IN} = V_{IL \text{ max}}$	$R_T = 25\Omega$	0.5	—	—	μA
	V_{OH}	$V_{IN} = V_{IH \text{ max}}$ or					
	V_{OL}	$V_{IN} = V_{IL \text{ min}}$					
	V_{ONC}	$V_{IN} = V_{IH \text{ min}}$ or					
Output Threshold Voltage	V_{OLC}	$V_{IN} = V_{IL \text{ max}}$	$R_T = 25\Omega$	—	—	—	mV
	V_{IH}						
Input Voltage	V_{IH}		$R_T = 25\Omega$	—	—	—	mV
	V_{IL}						

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

● HD100123

Item	Symbol	Test Condition		0℃		25℃			85℃		Unit
				min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}	See test circuit and waveform	A, B input	1.80	3.90	1.85	3.00	4.00	1.85	4.00	ns
	t_{PHL}			0.95	2.00	1.00	1.30	2.10	1.00	2.10	
	t_{PLH}		C input	2.05	4.40	2.10	3.40	4.50	2.10	4.50	
	t_{PHL}			1.30	2.50	1.40	1.80	2.50	1.40	2.50	
	t_{PLH}		D input	2.10	4.80	2.20	3.50	4.90	2.20	4.90	
	t_{PHL}			1.40	2.45	1.50	1.80	2.55	1.50	2.55	
Transition Time	t_{TLH}			0.70	1.80	0.75	1.30	1.80	0.75	1.80	ns
	t_{THL}			0.40	1.10	0.45	0.80	1.20	0.45	1.20	

● HD100123F

Item	Symbol	Test Condition		0°C		25°C			85°C		Unit
				min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}	See test circuit and waveform	A, B input	1.90	3.90	1.95	2.50	4.00	1.95	4.00	ns
	t_{PHL}			0.95	1.80	1.00	1.30	1.90	1.00	1.90	
	t_{PLH}		C input	2.10	4.20	2.15	2.50	4.30	2.15	4.30	
				t_{PHL}	1.40	2.25	1.40	1.70	2.35	1.40	
	t_{PLH}		D input	2.30	4.60	2.40	2.70	4.70	2.40	4.70	
				t_{PHL}	1.40	2.25	1.50	1.70	2.35	1.50	
Transition Time	t_{TLH}			0.75	1.70	0.80	1.00	1.70	0.80	1.70	ns
	t_{THL}			0.45	1.10	0.45	0.65	1.20	0.45	1.20	

Notes) 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.