

HD74HC151

1 of-8-line Data Selector/Multiplexer

HITACHI

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
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[Http://www.100y.com.tw](http://www.100y.com.tw)

Description

The HD74HC151 selects one of the 8 data sources, depending on the address presented on the A, B and C inputs. It features both true (Y) and complement (W) outputs. The strobe input must be at a low logic level to enable this multiplexer. A high logic level at the strobe forces the W output high and the Y output low.

Features

- High Speed Operation: t_{pd} (Any D to Y or W) = 18 ns typ ($C_L = 50$ pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: $V_{CC} = 2$ to 6 V
- Low Input Current: 1 μ A max
- Low Quiescent Supply Current: I_{CC} (static) = 4 μ A max ($T_a = 25^\circ\text{C}$)

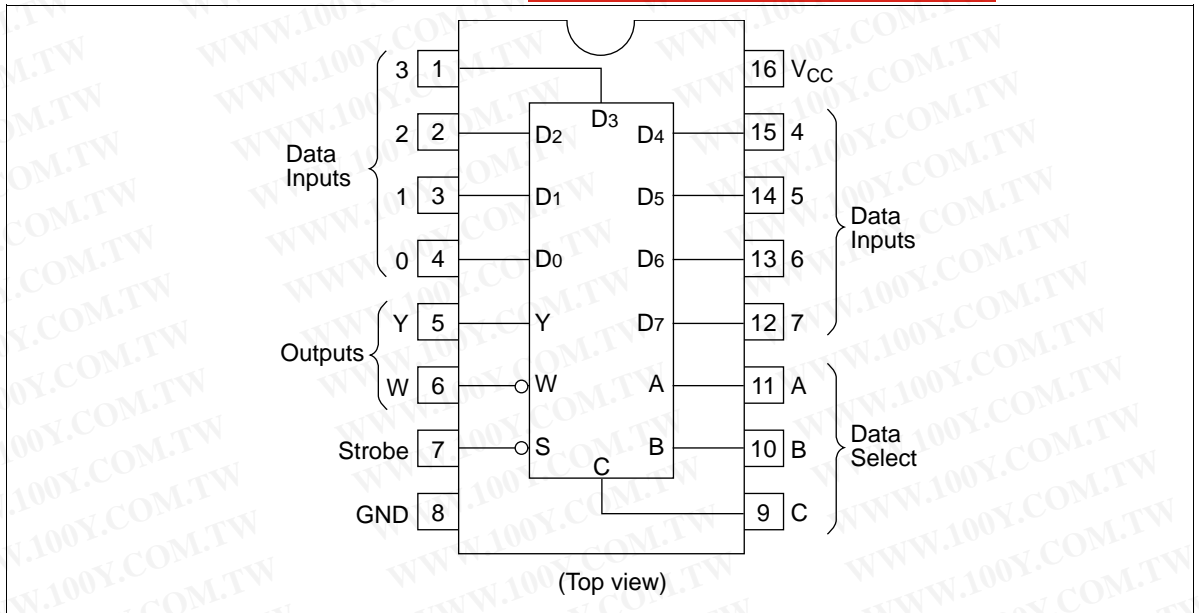
Function Table

Inputs

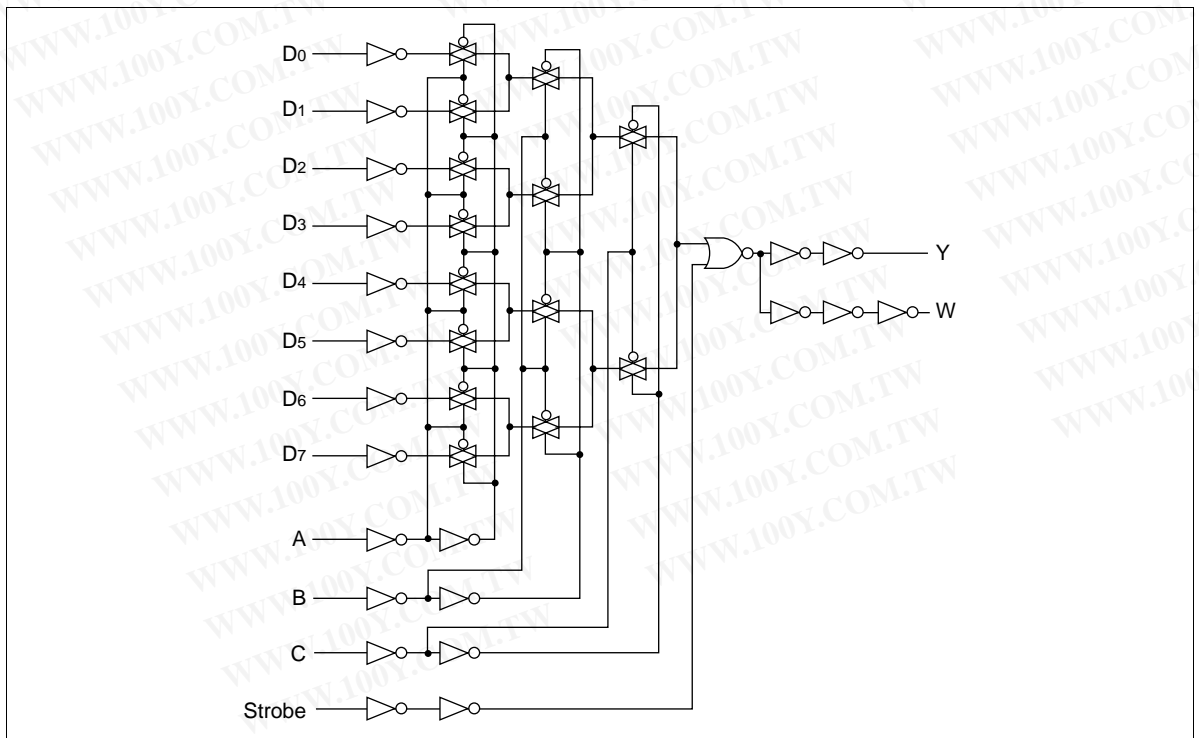
Select				Outputs	
C	B	A	Strobe S	Y	W
X	X	X	H	L	H
L	L	L	L	D_0	\bar{D}_0
L	L	H	L	D_1	\bar{D}_1
L	H	L	L	D_2	\bar{D}_2
L	H	H	L	D_3	\bar{D}_3
H	L	L	L	D_4	\bar{D}_4
H	L	H	L	D_5	\bar{D}_5
H	H	L	L	D_6	\bar{D}_6
H	H	H	L	D_7	\bar{D}_7

X : Irrelevant

Pin Arrangement



Logic Diagram



DC Characteristics

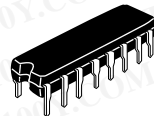
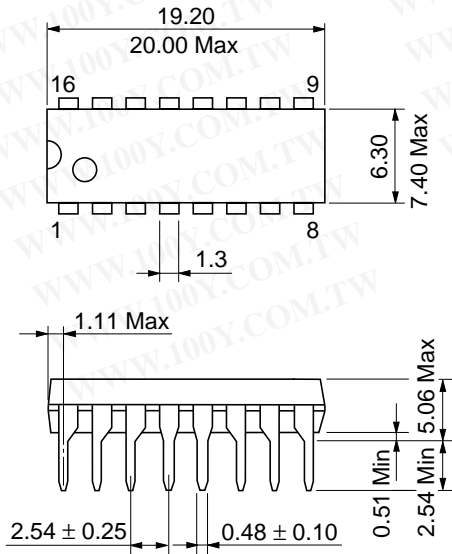
Item	Symbol	V _{CC} (V)	Ta = 25°C			Ta = -40 to +85°C		Unit	Test Conditions	
			Min	Typ	Max	Min	Max			
Input voltage	V _{IH}	2.0	1.5	—	—	1.5	—	V		
		4.5	3.15	—	—	3.15	—			
		6.0	4.2	—	—	4.2	—			
	V _{IL}	2.0	—	—	0.5	—	0.5			V
		4.5	—	—	1.35	—	1.35			
		6.0	—	—	1.8	—	1.8			
Output voltage	V _{OH}	2.0	1.9	2.0	—	1.9	—	V	Vin = V _{IH} or V _{IL} I _{OH} = -20 μA	
		4.5	4.4	4.5	—	4.4	—			
		6.0	5.9	6.0	—	5.9	—			
		4.5	4.18	—	—	4.13	—			I _{OH} = -4 mA
		6.0	5.68	—	—	5.63	—			I _{OH} = -5.2 mA
		6.0	5.68	—	—	5.63	—			I _{OH} = -5.2 mA
	V _{OL}	2.0	—	0.0	0.1	—	0.1	V	Vin = V _{IH} or V _{IL} I _{OL} = 20 μA	
		4.5	—	0.0	0.1	—	0.1			
		6.0	—	0.0	0.1	—	0.1			
		4.5	—	—	0.26	—	0.33			I _{OL} = 4 mA
		6.0	—	—	0.26	—	0.33			I _{OL} = 5.2 mA
		6.0	—	—	0.26	—	0.33			I _{OL} = 5.2 mA
Input current	I _{in}	6.0	—	—	±0.1	—	±1.0	μA	Vin = V _{CC} or GND	
Quiescent supply current	I _{CC}	6.0	—	—	4.0	—	40	μA	Vin = V _{CC} or GND, I _{out} = 0 μA	

HD74HC151

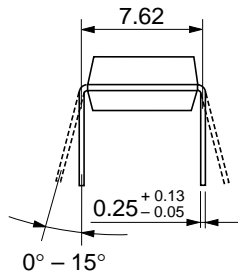
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AC Characteristics ($C_L = 50 \text{ pF}$, Input $t_r = t_f = 6 \text{ ns}$)

Item	Symbol	V_{CC} (V)	$T_a = 25^\circ\text{C}$			$T_a = -40 \text{ to } +85^\circ\text{C}$		Unit	Test Conditions
			Min	Typ	Max	Min	Max		
Propagation delay time	t_{PLH}	2.0	—	—	205	—	255	ns	A, B or C to Y
		4.5	—	18	41	—	51		
		6.0	—	—	35	—	43		
		t_{PHL}	2.0	—	—	185	—	230	A, B or C to W
			4.5	—	18	37	—	46	
			6.0	—	—	31	—	39	
			2.0	—	—	175	—	220	Any D to Y
			4.5	—	16	35	—	44	
			6.0	—	—	30	—	37	
			2.0	—	—	170	—	215	Any D to W
			4.5	—	16	34	—	43	
			6.0	—	—	29	—	37	
			2.0	—	—	125	—	155	Strobe to Y
			4.5	—	10	25	—	31	
			6.0	—	—	21	—	26	
			2.0	—	—	115	—	145	Strobe to W
			4.5	—	10	23	—	29	
			6.0	—	—	20	—	25	
Output rise/fall time	t_{TLH}	2.0	—	—	75	—	95	ns	
		4.5	—	5	15	—	19		
		6.0	—	—	13	—	16		
Input capacitance	C_{in}	—	—	5	10	—	10	pF	



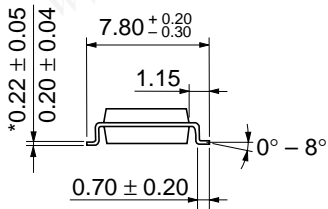
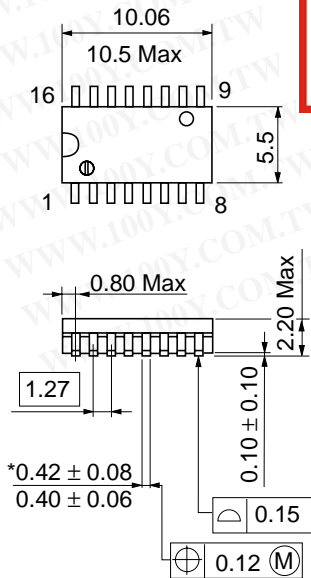
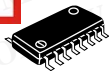
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Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g

Unit: mm

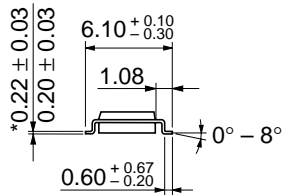
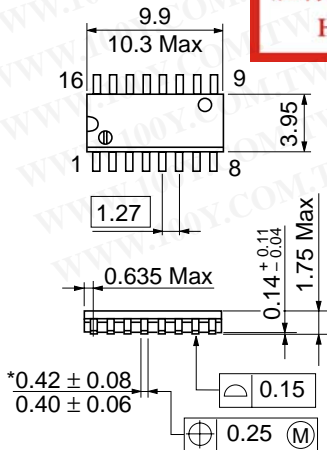
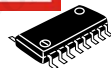
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*Dimension including the plating thickness
 Base material dimension

Hitachi Code	FP-16DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.24 g

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*Dimension including the plating thickness
 Base material dimension

Hitachi Code	FP-16DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.15 g

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