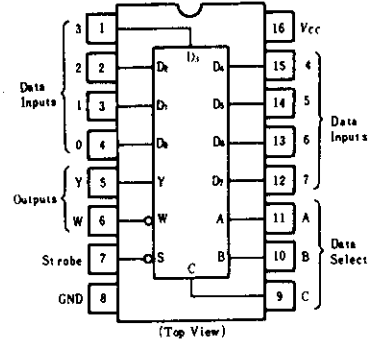


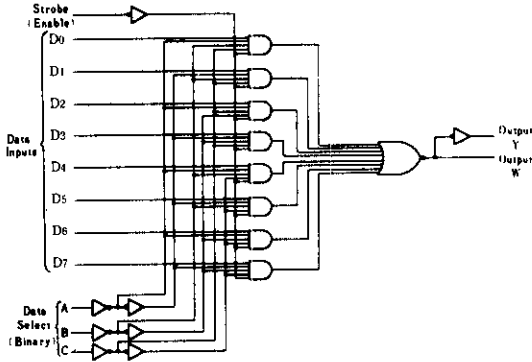
# HD74LS151 ● 1-of-8 Data Selectors/Multiplexers (with strobe)

This data selector/multiplexer contains full-on chip binary decoding to select the desired data sources. The HD74LS151 selects one-of-eight data sources and has a strobe input which must be at a low logic level to enable this device. A high level at the strobe forces the W output high, and the Y output low.

## ■ PIN ARRANGEMENT



## ■ BLOCK DIAGRAM



## ■ FUNCTION TABLE

Inputs				Outputs	
SELECT			STROBE S	Y	W
C	B	A			
X	X	X	H	L	H
L	L	L	L	D <sub>0</sub>	$\bar{D}_0$
L	L	H	L	D <sub>1</sub>	$\bar{D}_1$
L	H	L	L	D <sub>2</sub>	$\bar{D}_2$
L	H	H	L	D <sub>3</sub>	$\bar{D}_3$
H	L	L	L	D <sub>4</sub>	$\bar{D}_4$
H	L	H	L	D <sub>5</sub>	$\bar{D}_5$
H	H	L	L	D <sub>6</sub>	$\bar{D}_6$
H	H	H	L	D <sub>7</sub>	$\bar{D}_7$

H; high level, L; low level, X; irrelevant

## ■ ELECTRICAL CHARACTERISTICS (Ta = -20 ~ +75°C)

Item	Symbol	Test Conditions	min	typ*	max	Unit
Input voltage	V <sub>IH</sub>		2.0	—	—	V
	V <sub>IL</sub>		—	—	0.8	V
Output voltage	V <sub>OH</sub>	V <sub>CC</sub> = 4.75V, V <sub>IH</sub> = 2V, V <sub>IL</sub> = 0.8V, I <sub>OH</sub> = -400μA	2.7	—	—	V
	V <sub>OL</sub>	V <sub>CC</sub> = 4.75V, V <sub>IH</sub> = 2V, V <sub>IL</sub> = 0.8V, I <sub>OL</sub> = 4mA, I <sub>OL</sub> = 8mA	—	—	0.4 0.5	V
Input current	I <sub>I</sub>	V <sub>CC</sub> = 5.25V, V <sub>I</sub> = 7V	—	—	0.1	mA
	I <sub>IH</sub>	V <sub>CC</sub> = 5.25V, V <sub>I</sub> = 2.7V	—	—	20	μA
	I <sub>IL</sub>	V <sub>CC</sub> = 5.25V, V <sub>I</sub> = 0.4V	—	—	-0.4	mA
Short-circuit output current	I <sub>OS</sub>	V <sub>CC</sub> = 5.25V	-20	—	-100	mA
Supply current **	I <sub>CC</sub>	V <sub>CC</sub> = 5.25V	—	6.0	10.0	mA
Input clamp voltage	V <sub>IK</sub>	V <sub>CC</sub> = 4.75V, I <sub>IN</sub> = -18mA	—	—	-1.5	V

\* V<sub>CC</sub> = 5V, Ta = 25°C

\*\* I<sub>CC</sub> is measured with all outputs open and all inputs at 4.5V.

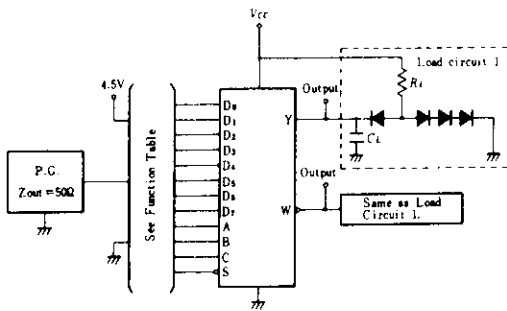
# HD74LS151

## SWITCHING CHARACTERISTICS ( $V_{CC}=5V$ , $T_a=25^\circ C$ )

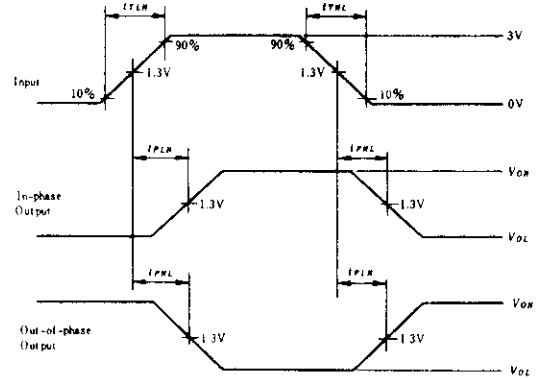
Item	Symbol	Inputs	Outputs	Test Conditions	min	typ	max	Unit
Propagation delay time	$t_{PLH}$	A, B, C	Y	$C_L = 15pF$ , $R_L = 2k\Omega$	—	27	43	ns
	$t_{PHL}$	(4 Level)			—	18	30	
	$t_{PLH}$	A, B, C	W		—	14	23	
	$t_{PHL}$	(3 Level)			—	20	32	
	$t_{PLH}$	Strobe	Y		—	26	42	
	$t_{PHL}$				—	20	32	
	$t_{PLH}$	Strobe	W		—	15	24	
	$t_{PHL}$				—	18	30	
	$t_{PLH}$	D	Y		—	20	32	
	$t_{PHL}$				—	16	26	
	$t_{PLH}$	D	W		—	13	21	
	$t_{PHL}$				—	12	20	

## TESTING METHOD

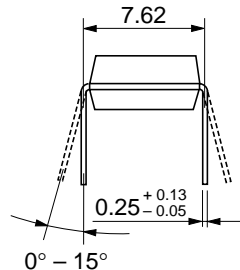
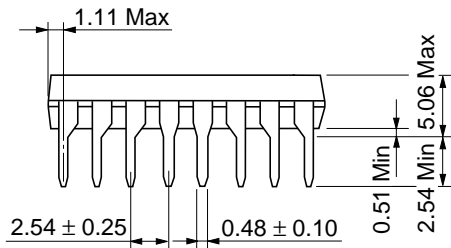
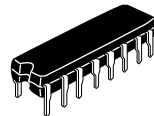
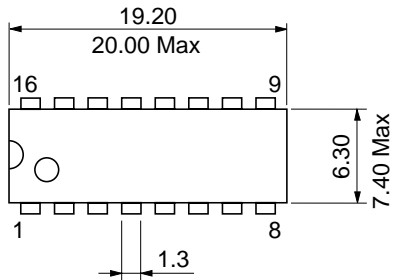
### 1) Test Circuit



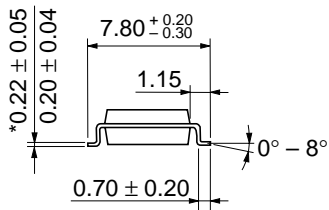
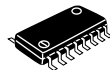
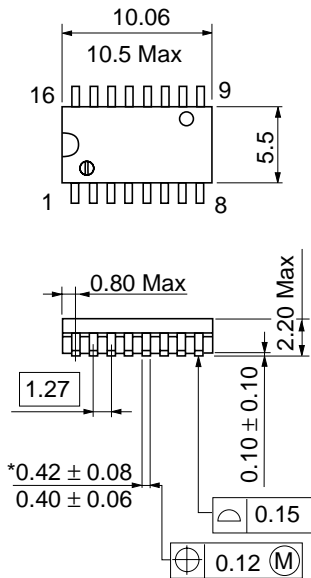
### Waveform



- Notes) 1. Input pulse;  $t_{TLH} \leq 15ns$ ,  $t_{THL} \leq 6ns$ ,  $PRR=1MHz$ , duty cycle=50%  
 2.  $C_L$  includes probe and jig capacitance.  
 3. All diodes are 1S2074 (H).

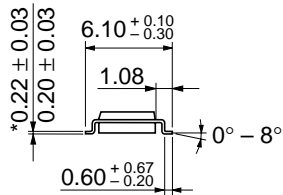
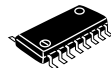
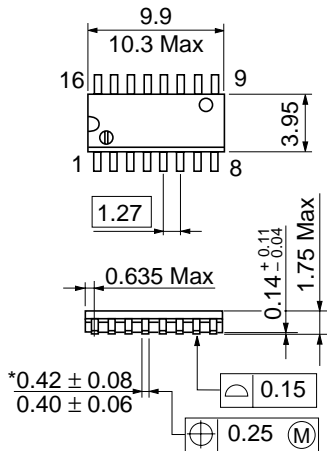


Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g



\*Dimension including the plating thickness  
Base material dimension

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



\*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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