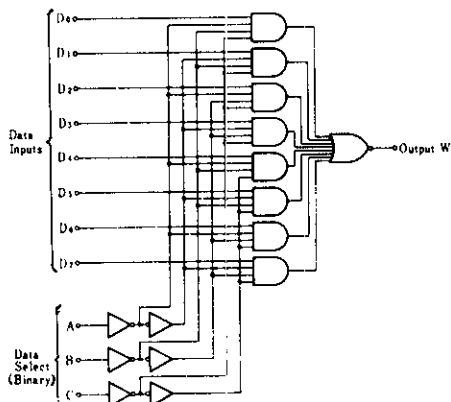


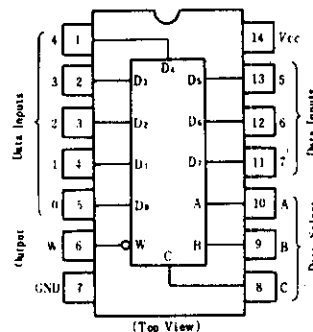
# HD74LS152 • 1-of-8 Data Selectors/Multiplexers

This data selector/multiplexer contains full-on-chip binary decoding to select the desired data source. The HD74LS152 selects one-of-eight data sources.

## ■ BLOCK DIAGRAM



## ■ PIN ARRANGEMENT



## ■ FUNCTION TABLE

Select inputs			Output	Select inputs			Output
C	B	A	W	C	B	A	W
L	L	L	$\overline{D}_0$	H	L	L	$\overline{D}_4$
L	L	H	$\overline{D}_1$	H	L	H	$\overline{D}_5$
L	H	L	$\overline{D}_2$	H	H	L	$\overline{D}_6$
L	H	H	$\overline{D}_3$	H	H	H	$\overline{D}_7$

Notes) D<sub>0</sub>~D<sub>7</sub>; the level of the D respective input  
H; high level  
L; low level

## ■ ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = -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, I <sub>OH</sub> = -400μA, V <sub>IH</sub> = 2V, V <sub>IL</sub> = 0.8V	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	—	—	0.4	V
			I <sub>OL</sub> = 8mA	—	—	0.5	
Input current	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	
	I <sub>I</sub>	V <sub>CC</sub> = 5.25V, V <sub>I</sub> = 7V	—	—	0.1	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	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, T<sub>a</sub> = 25°C

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

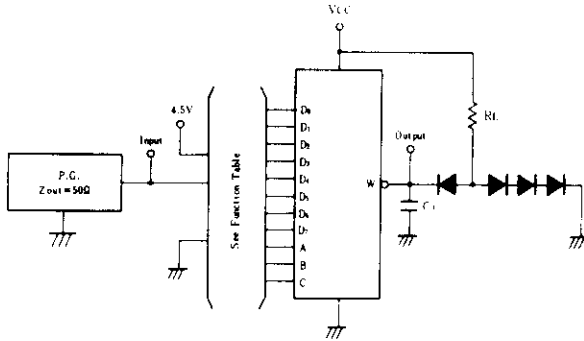
# HD74LS152

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

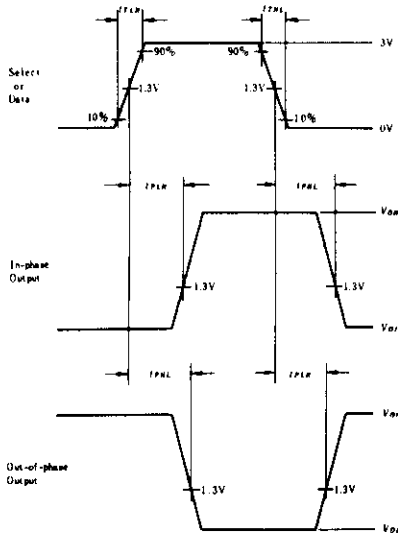
Item	Symbol	Inputs	Outputs	Test Conditions	min	typ	max	Unit
Propagation delay time	$t_{PLH}$	A, B, C	W	$C_L = 15pF$ , $R_L = 2k\Omega$	—	14	23	ns
	$t_{PHL}$				—	20	32	
	$t_{PLH}$	Data	W		—	13	21	
	$t_{PHL}$				—	12	20	

## TESTING METHOD

### 1) Test Circuit



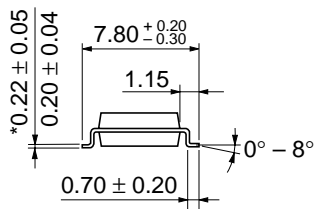
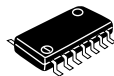
### Waveform



- 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  $\text{\textcircled{H}}$ .



Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g



Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

\*Dimension including the plating thickness  
Base material dimension



Hitachi Code	FP-14DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.13 g

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