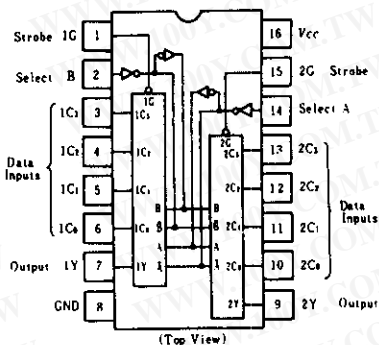
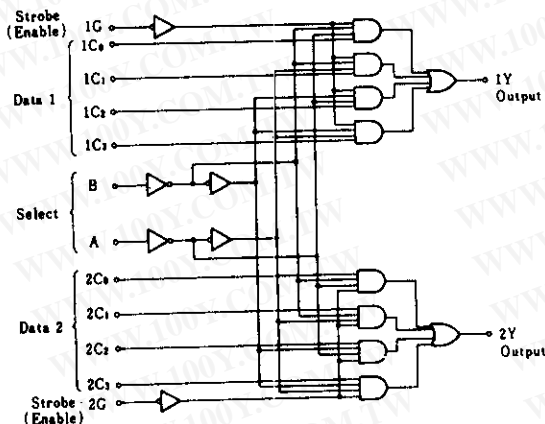


HD74LS153 • Dual 4-Line to 1-Line Data Selectors/Multiplexers

This data selector/multiplexer contains inverters and drivers to supply fully complementary, on-chip, binary decoding data selection to the AND-OR-INVERT gates. Separate strobe inputs are provided for each of the two four-line sections.

■ PIN ARRANGEMENT

■ BLOCK DIAGRAM



■ FUNCTION TABLE

		Inputs					Strobe	Outputs	
		Select		Data					
		B	A	C ₀	C ₁	C ₂	C ₃	G	Y
		X	X	X	X	X	X	H	L
		L	L	L	X	X	X	L	L
		L	L	H	X	X	X	L	H
		L	H	X	L	X	X	L	L
		L	H	X	H	X	X	L	H
		H	L	X	X	L	X	L	L
		H	L	X	X	H	X	L	H
		H	H	X	X	X	L	L	L
		H	H	X	X	X	H	L	H

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

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

Item	Symbol	Test Conditions	min	typ*	max	Unit
Input voltage	V _{IH}		2.0	—	—	V
	V _{IL}		—	—	0.8	V
Output voltage	V _{OH}	V _{CC} =4.75V, V _{IH} =2V, V _{IL} =0.8V, I _{OH} =-400μA	2.7	—	—	V
	V _{OL}	V _{CC} =4.75V, V _{IH} =2V, V _{IL} =0.8V	—	—	0.4	V
		I _{OL} =4mA	—	—	0.5	
Input current	I _{IH}	V _{CC} =5.25V, V _I =2.7V	—	—	20	μA
	I _{IL}	V _{CC} =5.25V, V _I =0.4V	—	—	-0.4	mA
	I _I	V _{CC} =5.25V, V _I =7V	—	—	0.1	mA
Short-circuit output current	I _{OS}	V _{CC} =5.25V	-20	—	-100	mA
Supply current**	I _{CC}	V _{CC} =5.25V	—	6.2	10	mA
Input clamp voltage	V _{IK}	V _{CC} =4.75V, I _{IN} =-18mA	—	—	-1.5	V

* V_{CC}=5V, T_a=25°C

** I_{CC} is measured with all outputs open and all inputs grounded.

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

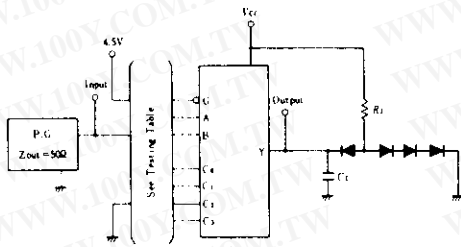
HD74LS153

■ 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}	Data	Y	$C_L=15pF$, $R_L=2k\Omega$	—	10	15	ns
	t_{PHL}	Data	Y		—	17	26	ns
	t_{PLH}	Select	Y		—	19	29	ns
	t_{PHL}	Select	Y		—	25	38	ns
	t_{PLH}	Strobe	Y		—	16	24	ns
	t_{PHL}	Strobe	Y		—	21	32	ns

■ TESTING METHOD

1) Test Circuit



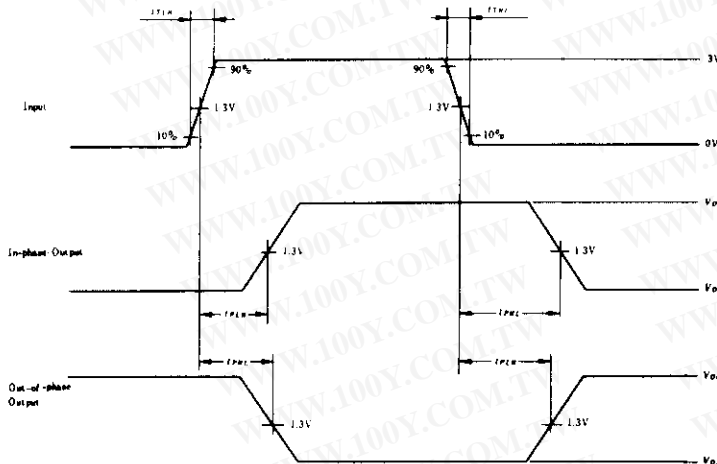
- Notes) 1. C_L includes probe and jig capacitance.
2. All diodes are 1S2074 (H).

2) Testing Table

Item	Inputs							Output
	B	A	C_0	C_1	C_2	C_3	G	
t_{PLH}	GND	GND	IN	×	×	×	GND	OUT
	GND	4.5V	×	IN	×	×	GND	OUT
	4.5V	GND	×	×	IN	×	GND	OUT
	4.5V	4.5V	×	×	×	IN	GND	OUT
t_{PHL}	GND	IN	GND	4.5V	×	×	GND	OUT
			4.5V	GND				
	IN	GND	GND	4.5V	×	×	GND	OUT
			4.5V	GND				
	GND	GND	4.5V	×	×	×	IN	OUT

X: "4.5V" or "GND"

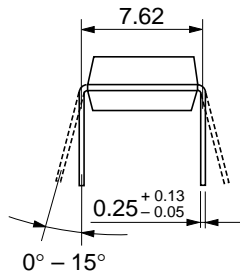
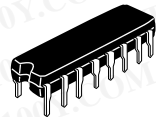
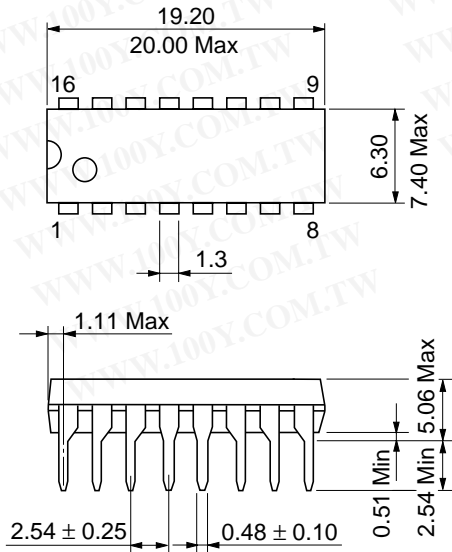
Waveform



Input pulse; $t_{TLH} \leq 15ns$, $t_{THL} \leq 6ns$,
 $PRR=1MHz$, duty cycle 50%.

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Unit: mm

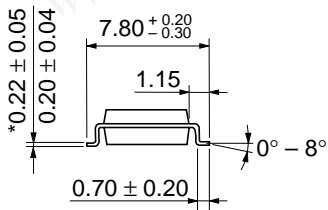
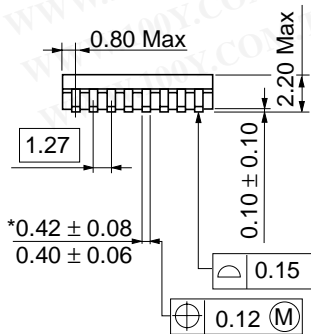
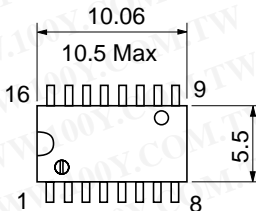
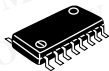


勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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

Unit: mm

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



*Dimension including the plating thickness
 Base material dimension

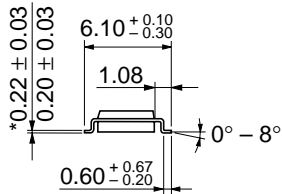
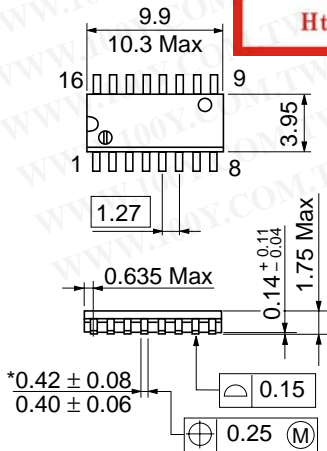
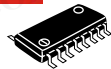
Hitachi Code	FP-16DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.24 g

勝特力材料 886-3-5753170

勝特力电子(上海) 86-21-54151736

勝特力电子(深圳) 86-755-83298787

[Http://www.100y.com.tw](http://www.100y.com.tw)



*Dimension including the plating thickness
Base material dimension

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

Cautions

1. Hitachi neither warrants nor grants licenses of any rights of Hitachi's or any third party's patent, copyright, trademark, or other intellectual property rights for information contained in this document. Hitachi bears no responsibility for problems that may arise with third party's rights, including intellectual property rights, in connection with use of the information contained in this document.
2. Products and product specifications may be subject to change without notice. Confirm that you have received the latest product standards or specifications before final design, purchase or use.
3. Hitachi makes every attempt to ensure that its products are of high quality and reliability. However, contact Hitachi's sales office before using the product in an application that demands especially high quality and reliability or where its failure or malfunction may directly threaten human life or cause risk of bodily injury, such as aerospace, aeronautics, nuclear power, combustion control, transportation, traffic, safety equipment or medical equipment for life support.
4. Design your application so that the product is used within the ranges guaranteed by Hitachi particularly for maximum rating, operating supply voltage range, heat radiation characteristics, installation conditions and other characteristics. Hitachi bears no responsibility for failure or damage when used beyond the guaranteed ranges. Even within the guaranteed ranges, consider normally foreseeable failure rates or failure modes in semiconductor devices and employ systemic measures such as fail-safes, so that the equipment incorporating Hitachi product does not cause bodily injury, fire or other consequential damage due to operation of the Hitachi product.
5. This product is not designed to be radiation resistant.
6. No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without written approval from Hitachi.
7. Contact Hitachi's sales office for any questions regarding this document or Hitachi semiconductor products.

HITACHI