

92D 10403 D T-67-21-51

HD74HC157

HD74HC158

- Quad. 2-to-1-line Data Selectors/Multiplexers (with noninverted outputs)
- Quad. 2-to-1-line Data Selectors/Multiplexers (with inverted outputs)

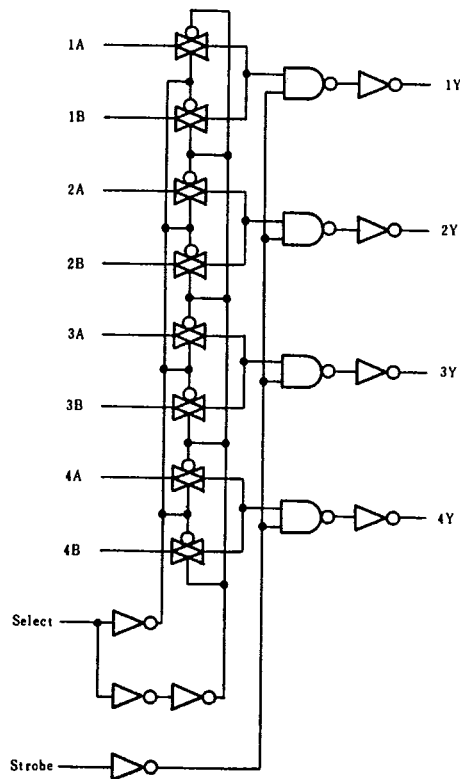
These devices each consist of four 2-input digital multiplexers with common select and strobe inputs. On the HD74HC157, when the strobe input is at logical "L" the four outputs assume the values as selected from the inputs. When the strobe input is at a logical "H" the outputs assume logical "L". The HD74HC158 operates in the same manner, except that its outputs are inverted. Select decoding is done internally resulting in a single select input only. If enabled, the select input determines whether the A or B inputs get routed to their corresponding Y outputs.

FEATURES

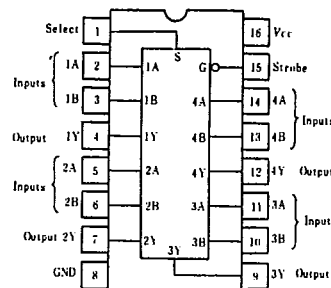
- High Speed Operation: t_{pd} (Data to Output) = 11.5ns typ. ($C_L = 50\text{pF}$)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: $V_{CC} = 2 \sim 6\text{V}$
- Low Input Current: $1\mu\text{A}$ max.
- Low Quiescent Supply Current: I_{CC} (static) = $4\mu\text{A}$ max.

LOGIC DIAGRAM

HD74HC157



PIN ARRANGEMENT

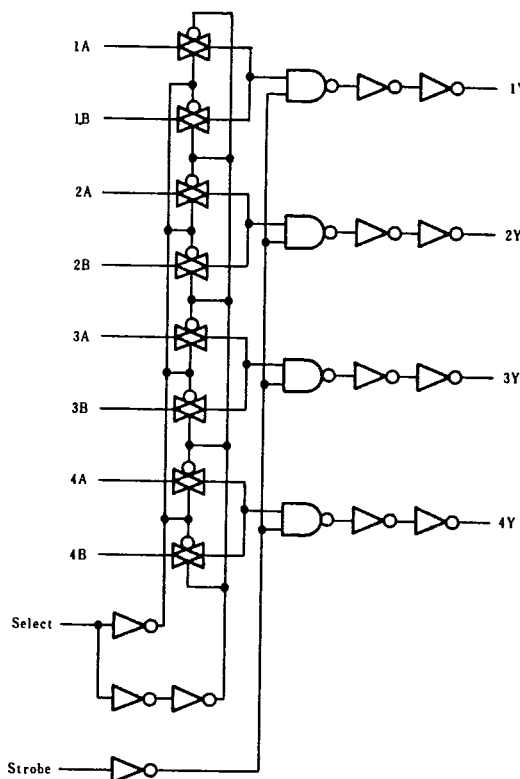


(Top View)

FUNCTION TABLE

Inputs				Output Y	
Strobe	Select	A	B	HC157	HC158
H	x	x	x	L	H
L	L	L	x	L	H
L	L	H	x	H	L
L	H	x	L	L	H
L	H	x	H	H	L

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■ DC CHARACTERISTICS

Item	Symbol	$V_{CC}(V)$	Test Conditions		$T_a=25^{\circ}C$			$T_a=-40\sim+85^{\circ}C$		Unit	
					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	$V_{IL}=V_{IH}$ or V_{IL}	$I_{OH}=-20\mu A$	1.9	2.0	—	1.9	V		
		4.5			4.4	4.5	—	4.4		—	
		6.0			5.9	6.0	—	5.9		—	
		4.5		$I_{OH}=-4mA$		4.18	—	—		4.13	—
		6.0				$I_{OH}=-5.2mA$		5.68		—	—
		6.0									
	V_{OL}	2.0	$V_{IL}=V_{IH}$ or V_{IL}	$I_{OL}=20\mu A$	—	0.0	0.1	—	0.1	V	
		4.5			—	0.0	0.1	—	0.1		
		6.0			—	0.0	0.1	—	0.1		
		4.5		$I_{OL}=4mA$		—	—	0.26	—		0.33
		6.0				$I_{OL}=5.2mA$		—	—		0.26
		6.0									
Input Current	I_{IL}	6.0	$V_{IL}=V_{CC}$ or GND	—	—	± 0.1	—	± 1.0	μA		
Quiescent Supply Current	I_{CC}	6.0	$V_{IL}=V_{CC}$ or GND, $I_{out}=0\mu A$	—	—	4.0	—	40	μA		

■ AC CHARACTERISTICS ($C_L = 50pF$, Input $t_r = t_f = 6ns$)

Item	Symbol	V _{cc} (V)	Test Conditions		T _a = 25°C			T _a = -40 ~ +85°C		Unit
					min	typ	max	min	max	
Propagation Delay Time	t _{PHL} t _{PLH}	2.0	Data to Output	HD74HC157 Only	—	—	125	—	155	ns
		4.5			—	12	25	—	31	
		6.0			—	—	21	—	26	
	t _{PHL} t _{PLH}	2.0		HD74HC158 Only	—	—	110	—	140	ns
		4.5			—	12	22	—	28	
		6.0			—	—	19	—	24	
	t _{PHL}	2.0	Select to Output		—	—	125	—	155	ns
		4.5			—	13	25	—	31	
		6.0			—	—	21	—	26	
	t _{PLH}	2.0			—	—	160	—	200	ns
		4.5			—	17	32	—	40	
		6.0			—	—	27	—	34	
	t _{PHL}	2.0	Strobe to Output		—	—	160	—	200	ns
		4.5			—	12	32	—	40	
		6.0			—	—	27	—	34	
	t _{PLH}	2.0			—	—	160	—	200	ns
		4.5			—	12	32	—	40	
		6.0			—	—	27	—	34	
Output Rise/Fall Time	t _{TLH} t _{THL}	2.0		—	—	75	—	95	ns	
		4.5		—	5	15	—	19		
		6.0		—	—	13	—	16		
Input Capacitance	C _{in}	—		—	5	10	—	10	pF	



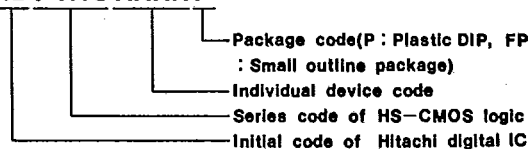
PACKAGE INFORMATION

T-90-20

In the HD74HC series of HS-CMOS logic, either of plastic DIP and small outline packages can be selected.
For your ordering, please refer to the following package code.

● Package code of HS-CMOS Logic

HD74HC XXXXP

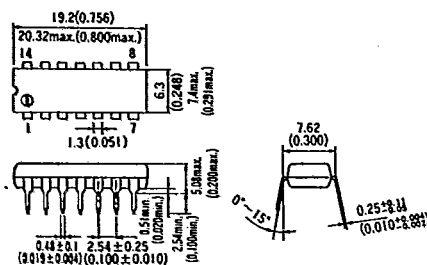


■ PLASTIC DIP PACKAGE [Unit: mm (inch), scale: 1/1]

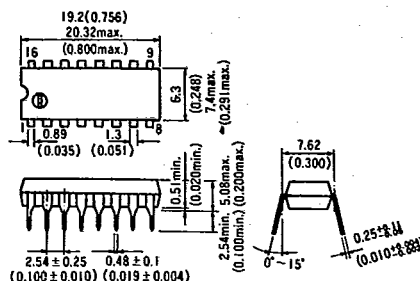
● 14-pin type

● 16-pin type

DP-14



DP-16

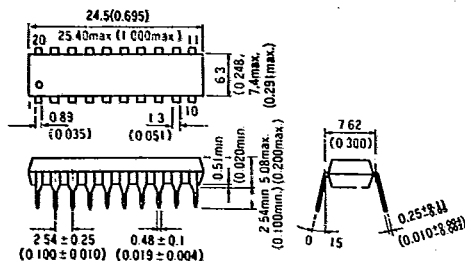


Note) For the present, both packages of 0.89 and 1.3 can be used. Please refer to the Technical Marketing Dept. for further details.

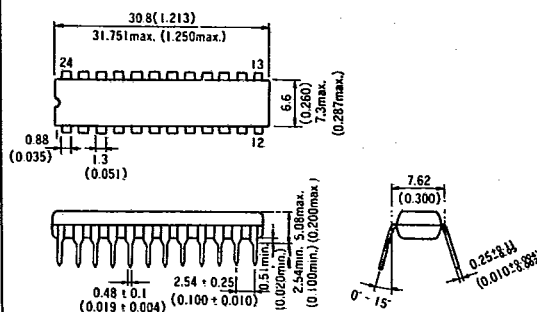
● 20-pin type

● 24-pin type

DP-20N



DP-24N



Note) Because this is under development, the dimensions may be changed partly.

0571

F-06



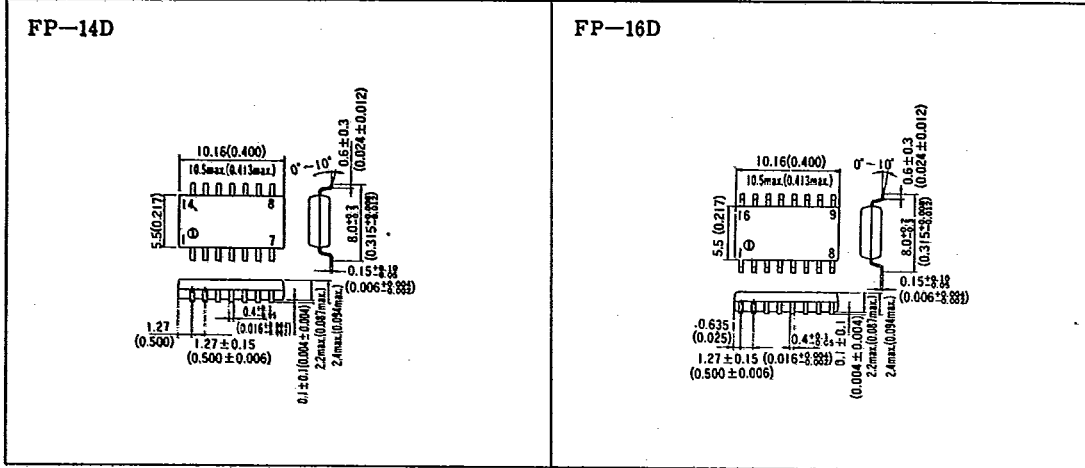
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■ SMALL OUTLINE PACKAGE [Unit: mm (inch), scale: 1½]

● 14-pin type

● 16-pin type



● 20-pin type

