92D 10403 D T-67-21-51

HD74HC157
HD74HC158

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

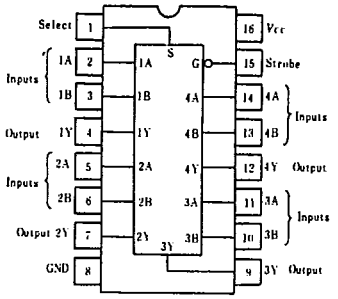
● Quad. 2-to-1-line Data Selectors/Multiplexers (with inverted outputs)

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=50pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: Vcc=2~6V
- Low Input Current: 1μA max.
- Low Quiescent Supply Current: Icc (static)=4μA max.

■ PIN ARRANGEMENT



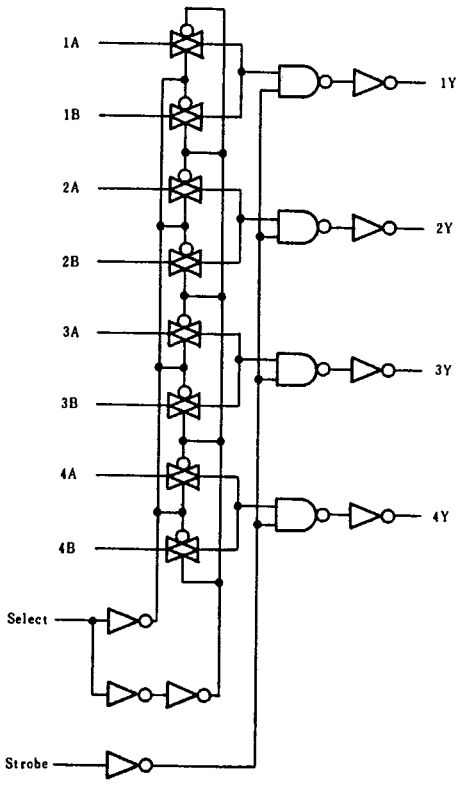
(Top View)

■ FUNCTION TABLE

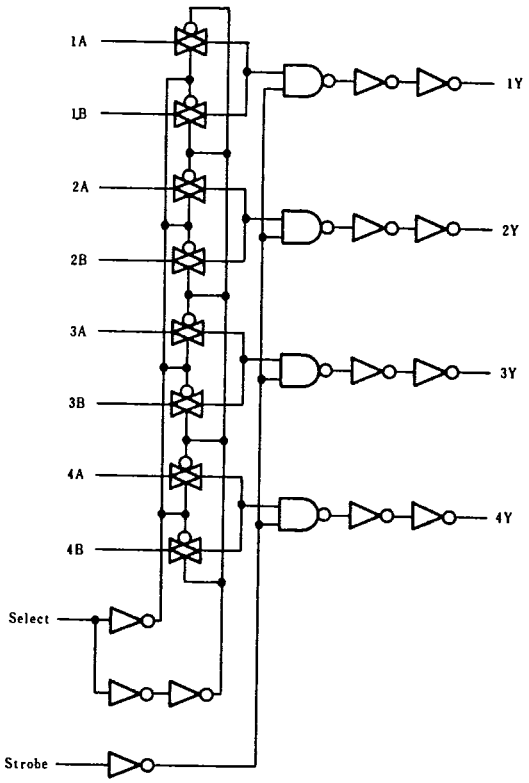
Inputs				Output Y	
Strobe	Select	A	B	HC157	HC158
H	×	×	×	L	H
L	L	L	×	L	H
L	L	H	×	H	L
L	H	×	L	L	H
L	H	×	H	H	L

■ LOGIC DIAGRAM

●HD74HC157



●HD74HC158



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■ DC CHARACTERISTICS

Item	Symbol	V_{CC}(V)	Test Conditions		Ta=25°C min	Ta=25°C typ	Ta=25°C max	Ta=−40~+85°C min	Ta=−40~+85°C max	Unit
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_{in}=V_{IH} or V_{IL}	I_{OH}=−20μA	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	—	—	5.63	—	
	V_{OL}	2.0	V_{in}=V_{IH} or V_{IL}	I_{OL}=20μA	—	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	—	0.33	
Input Current	I_{in}	6.0	V_{in}=V_{CC} or GND		—	—	±0.1	—	±1.0	μA
Quiescent Supply Current	I_{CC}	6.0	V_{in}=V_{CC} or GND, I_{out}=0μA		—	—	4.0	—	40	μA

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

Item	Symbol	V_{CC}(V)	Test Conditions		Ta=25°C min	Ta=25°C typ	Ta=25°C max	Ta=−40~+85°C min	Ta=−40~+85°C max	Unit
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

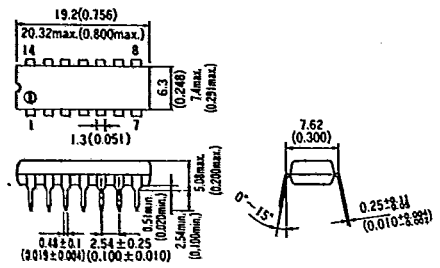
HD74HC XXXX P

- P : Package code (P : Plastic DIP, FP : Small outline package)
- XXXX : Individual device code
- HC : Series code of HS-CMOS logic
- HD74 : Initial code of Hitachi digital IC

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

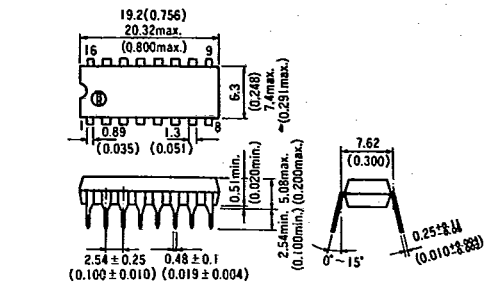
●14-pin type

DP-14



●16-pin type

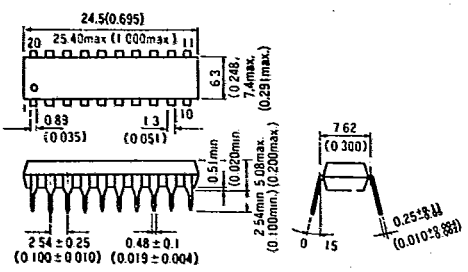
DP-16



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.

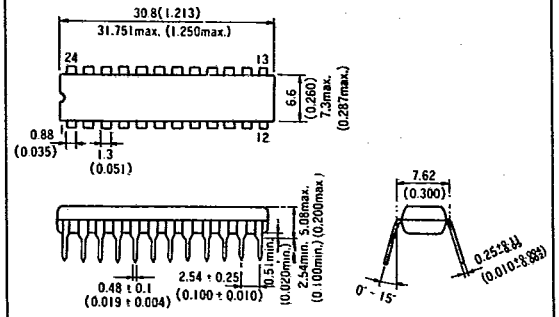
●20-pin type

DP-20N



●24-pin type

DP-24N



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

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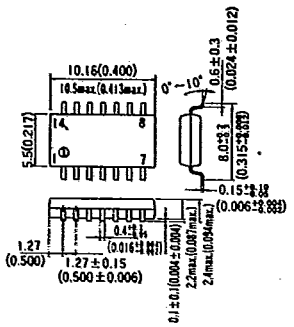
PACKAGE INFORMATION

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

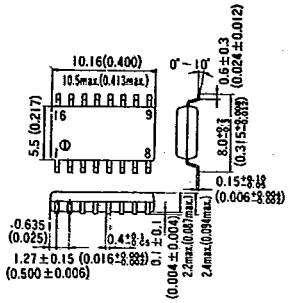
●14—pin type

FP—14D



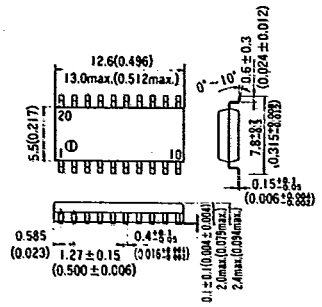
●16—pin type

FP—16D



●20—pin type

FP—20DN



Note) Preliminary

0572 F-07

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