

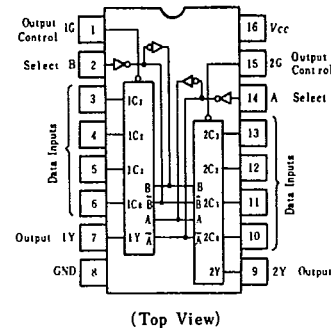
92D 10467 D

HD74HC253 • Dual 4-to-1-line Data Selectors/Multiplexers (with 3-state outputs)

T-67-21-51

The large output drive and 3-state features of this device make it ideally suited for interfacing with bus lines in bus organized systems. When the output control input is taken high, the multiplexer outputs are sent into a high impedance state.

When the output control is held low, the associated multiplexer chooses the correct output channel for the given input signals determined by the select A and B inputs.

PIN ARRANGEMENT

(Top View)

FEATURES

- High Speed Operation: t_{pd} (Data to Y) = 18ns 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.

FUNCTION TABLE

Select inputs		Data inputs				Output Control	Output
B	A	C_0	C_1	C_2	C_3	G	Y
X	X	X	X	X	X	H	Z
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

Notes) 1. X:irrelevant
2. Address inputs
A and B are common
to both sections.

DC CHARACTERISTICS

Item	Symbol	V _{CC} (V)	Test Conditions		T _a = 25°C			T _a = -40 ~ +85°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 _{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		—
		6.0									
	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
		6.0									
Off-state Output Current	I _{OZ}	6.0	V _{in} = V _{IH} or V _{IL} , V _{out} = V _{CC} or GND		—	—	±0.5	—	±5.0	μA	
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	

92D 10468 D

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

Item	Symbol	$V_{CC}(V)$	Test Conditions	$T_a = 25^\circ\text{C}$			$T_a = -40 \sim +85^\circ\text{C}$		Unit
				min	typ	max	min	max	
Propagation Delay Time	t_{PLH}	2.0	Data to Y	—	—	125	—	155	ns
		4.5		—	18	25	—	31	
		6.0		—	—	21	—	26	
	t_{PHL}	2.0	Select to Y	—	—	160	—	200	
		4.5		—	20	32	—	40	
		6.0		—	—	27	—	34	
Output Enable Time	t_{ZL}	2.0		—	—	100	—	125	ns
	t_{ZH}	4.5		—	11	20	—	25	
		6.0		—	—	17	—	21	
Output Disable Time	t_{LZ}	2.0		—	—	150	—	190	ns
	t_{HZ}	4.5		—	15	30	—	38	
		6.0		—	—	26	—	33	
Output Rise/Fall Time	t_{TLH}	2.0		—	—	75	—	95	ns
	t_{THL}	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

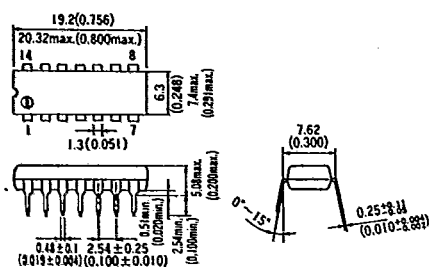
Package code (P : Plastic DIP, FP : Small outline package)
Individual device code
Series code of HS-CMOS logic
Initial code of Hitachi digital IC

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

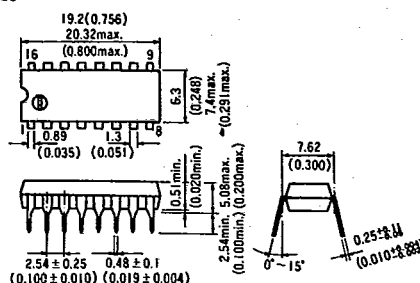
● 14-pin type

● 16-pin type

DP-14



DP-16

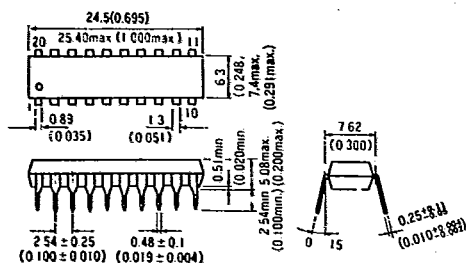


Note) For the present, both packages of 0.89 and 1.3 can be used. Please refer to the Technical Marketing Dept. for further details.

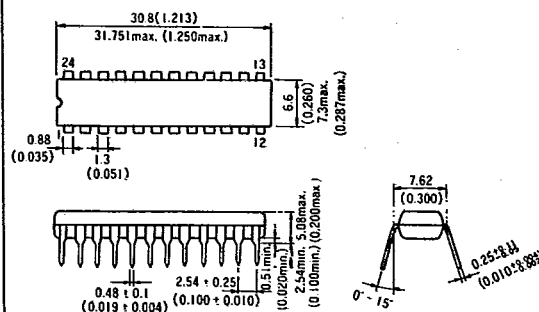
● 20-pin type

● 24-pin type

DP-20N



DP-24N



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

0571

F-06



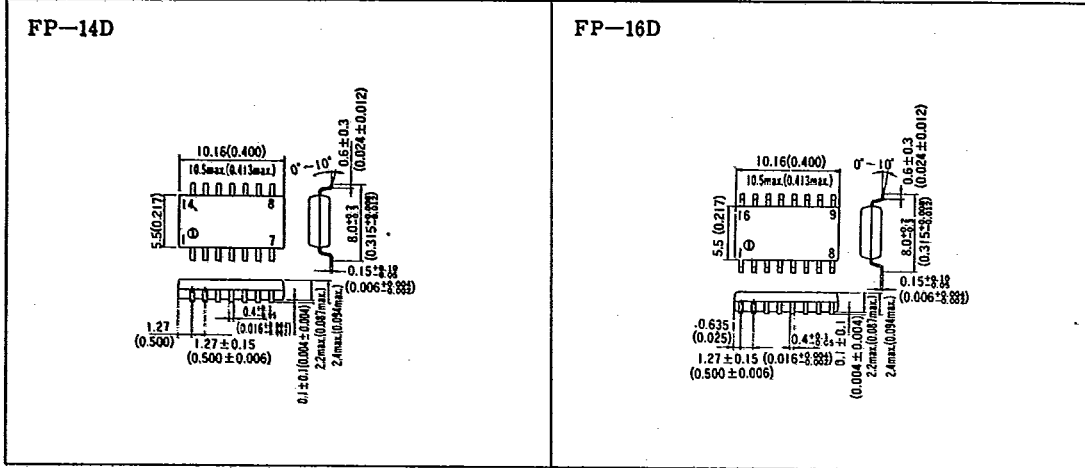
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31

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

● 14—pin type

● 16—pin type



● 20—pin type

