

HD74LS251 • 1 of 8 Data Selectors/Multiplexers(with strobe and three-state outputs)

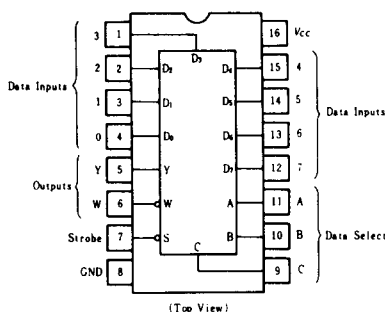
This data selector/multiplexer contains full on-chip binary decoding to select one-of-eight data sources and features a strobe-controlled 3-state output.

The strobe must be at a low logic level to enable this device. The 3-state outputs permit a number of outputs to be connected to a common bus.

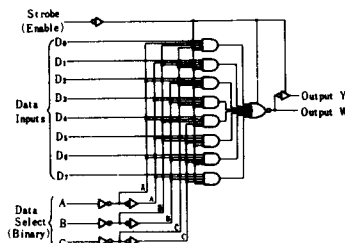
When the strobe input is high, both outputs are in a high-impedance state in which both the upper and lower transistors of each totem-pole output are off, and the output neither drives nor loads the bus significantly. When the strobe is low, the outputs are activated and operate as standard TTL totem-pole outputs.

To minimize the possibility that two outputs will attempt to take a common bus to opposite logic levels, the output control circuitry is designed so that the average output disable time is shorter than the average output enable time.

PIN ARRANGEMENT



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7.0	V
Input voltage	V_{IH}^*	7.0	V
Output voltage (off-state)	$V_{O(off)}$	5.5	V
Operating temperature range	T_{opr}	-20 ~ +75	°C
Storage temperature range	T_{stg}	-65 ~ +150	°C

FUNCTION TABLE

Inputs				Outputs	
SELECT			STROBE	Y	W
C	B	A	S	Y	W
X	X	X	H	Z	Z
L	L	L	L	$\bar{D}_0$	$\bar{D}_0$
L	L	H	L	$\bar{D}_1$	$\bar{D}_1$
L	H	L	L	$\bar{D}_2$	$\bar{D}_2$
L	H	H	L	$\bar{D}_3$	$\bar{D}_3$
H	L	L	L	$\bar{D}_4$	$\bar{D}_4$
H	L	H	L	$\bar{D}_5$	$\bar{D}_5$
H	H	L	L	$\bar{D}_6$	$\bar{D}_6$
H	H	H	L	$\bar{D}_7$	$\bar{D}_7$

- Notes) 1. H; high level, L; low level, X; irrelevant
 2. Z; high impedance (off-state)
 3. $\bar{D}_0$ through $\bar{D}_7$; the level of the respective D input.

ELECTRICAL CHARACTERISTICS ($T_a = -20 \sim +75^\circ\text{C}$)

Item	Symbol	Test Conditions	min	typ*	max	Unit
Input voltage	V_{IH}		2.0	—	—	V
	V_{IL}		—	—	0.8	V
Output voltage	V_{OH}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{IL} = 0.8\text{V}$, $I_{OH} = -2.6\text{mA}$	2.4	—	—	V
	V_{OL}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{IL} = 0.8\text{V}$, $I_{OL} = 4\text{mA}$	—	—	0.4	V
		$I_{OL} = 8\text{mA}$	—	—	0.5	V
Input current	I_{IH}	$V_{CC} = 5.25\text{V}$, $V_I = 2.7\text{V}$	—	—	20	μA
	I_{IL}	$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$	—	—	-0.4	mA
	I_I	$V_{CC} = 5.25\text{V}$, $V_I = 7\text{V}$	—	—	0.1	mA
Output current	I_{OZ}	$V_{CC} = 5.25\text{V}$, $V_{IH} = 2\text{V}$, $V_O = 2.7\text{V}$	—	—	20	μA
		$V_O = 0.4\text{V}$	—	—	-20	μA
Short-circuit output current	I_{OS}	$V_{CC} = 5.25\text{V}$	-30	—	-130	mA
Supply current**	I_{CC}	$V_{CC} = 5.25\text{V}$	Condition A	6.1	10	mA
			Condition B	7.1	12	mA
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}$, $I_{IN} = -18\text{mA}$	—	—	-1.5	V

* $V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$

** I_{CC} is measured with the outputs open and all data and select inputs at 4.5V under the following conditions:
 A. Strobe grounded, B. Strobe at 4.5V



PACKAGING INFORMATION

T-90-20

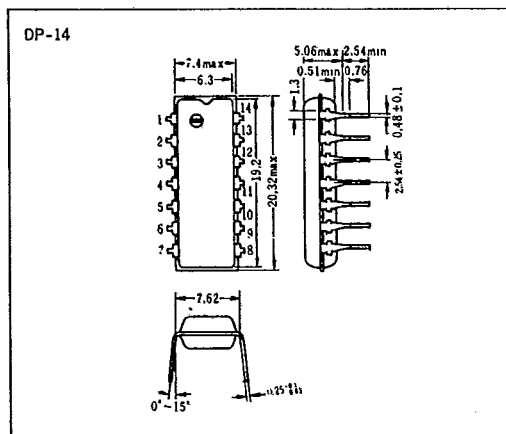
Factory orders for circuits described in this databook should include a three-part type number as explained in the following example.

HD 74LS00 P

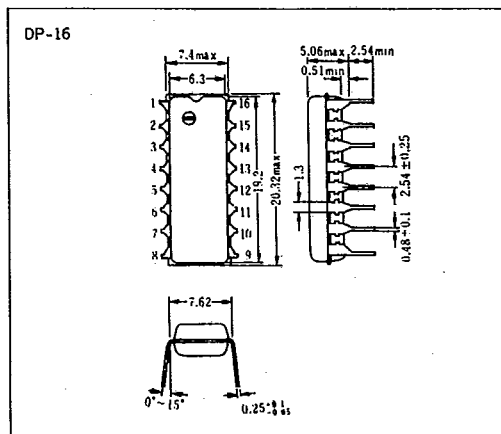
Package ; Plastic DIP ; letters P
Cerdip ; non-letters
Circuit description
Prefix : HD ; Hitachi Digital IC

■ Plastic DIP

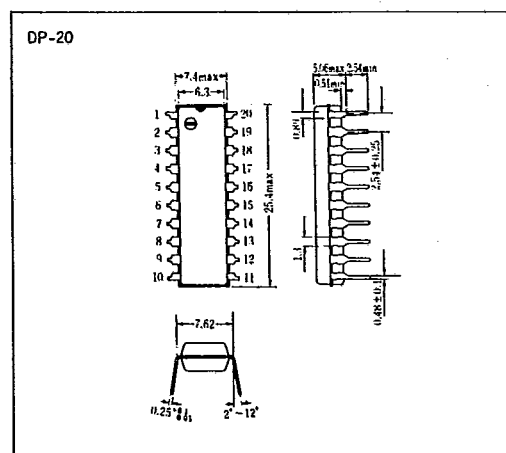
● 14 Pin



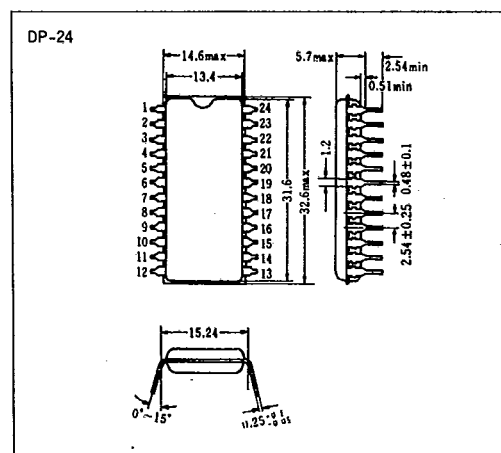
● 16 Pin



● 20 Pin



● 24 Pin



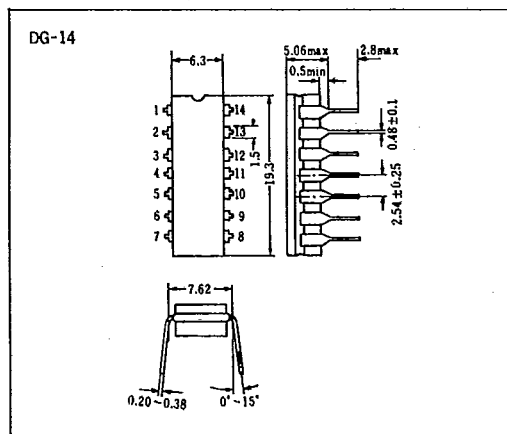
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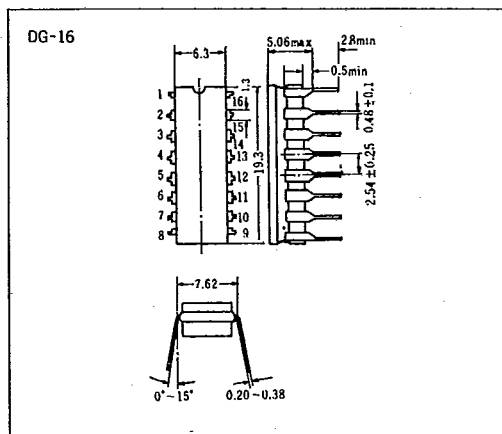
PACKAGING INFORMATION

■Cerdip

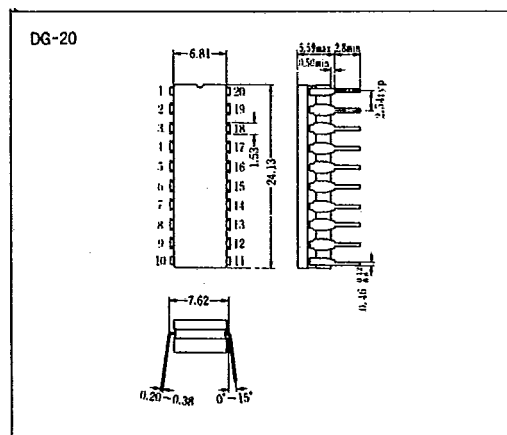
●14 Pin



●16 Pin



●20 Pin



●24 Pin

