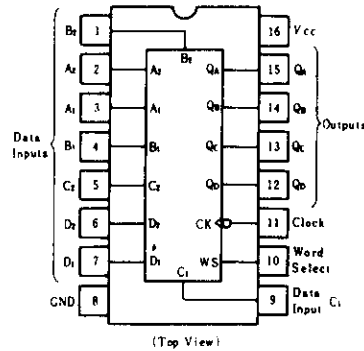


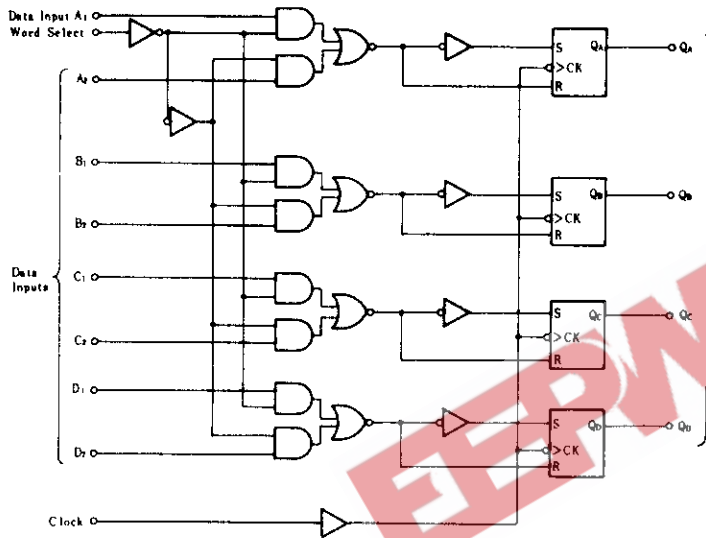
HD74LS298 • Quadruple 2-input Multiplexers (with storage)

This quadruple two-input multiplexer with storage provides essentially the equivalent functional capabilities of two separate MSI functions (HD74LS157 and HD74LS175). When the word-select input is low, word 1 (A_1, B_1, C_1, D_1) is applied to the flip-flops. A high input to word select will cause the selection of word 2 (A_2, B_2, C_2, D_2). The selected word is clocked to the output terminals on the negative-going edge of the clock pulse.

■ PIN ARRANGEMENT



■ BLOCK DIAGRAM



■ FUNCTION TABLE

Inputs		Outputs			
Word Select	Clock	Q_A	Q_B	Q_C	Q_D
L	↓	a_1	b_1	c_1	d_1
H	↓	a_2	b_2	c_2	d_2
X	H	Q_{A0}	Q_{B0}	Q_{C0}	Q_{D0}

- Notes
1. H; high level, L; low level, X; irrelevant (any input, including transition)
 2. ↓; transition from high to low level
 3. a_1, a_2 , etc; the level of steady-state input at A_1, A_2 , etc.
 4. Q_{A0}, Q_{B0} , etc; the level of Q_A, Q_B , etc. entered on the most-recent ↓ transition of the clock input.

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
Clock pulse width	$t_{w(CK)}$	20	—	—	ns
Setup time	Data	15	—	—	ns
	Word Select	25	—	—	
Hold time	Data	5	—	—	ns
	Word Select	0	—	—	

HD74LS298

■ 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}	$V_{CC}=4.75\text{V}, V_{IH}=2\text{V}, V_{IL}=0.8\text{V}, I_{OH}=-400\mu\text{A}$	2.7	—	—	V
	V_{OL}	$V_{CC}=4.75\text{V}, V_{IH}=2\text{V}, V_{IL}=0.8\text{V}$				
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
Short-circuit output current	I_{OS}	$V_{CC}=5.25\text{V}$	-20	—	-100	mA
Supply current **	I_{CC}	$V_{CC}=5.25\text{V}$	—	13	21	mA
Input clamp voltage	V_{IK}	$V_{CC}=4.75\text{V}, I_{IN}=-18\text{mA}$	—	—	-1.5	V

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

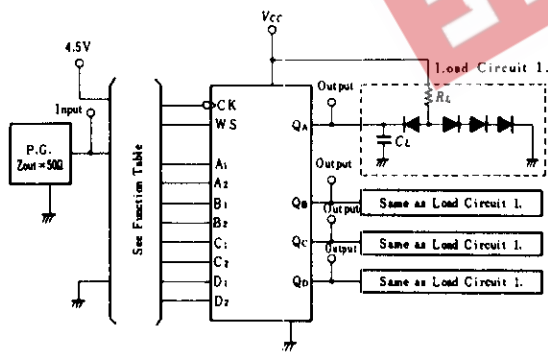
** With all outputs open and all inputs except clock low, I_{CC} is measured after applying a momentary 4.5V, followed by ground, to the clock input.

■ SWITCHING CHARACTERISTICS ($V_{CC}=5\text{V}, T_a=25^\circ\text{C}$)

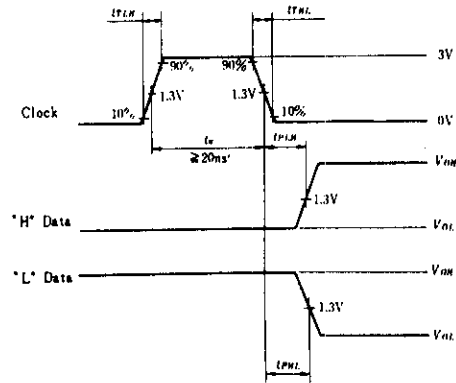
Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	$C_L=15\text{pF}, R_L=2\text{k}\Omega$	—	18	27	ns
	t_{PHL}		—	21	32	ns

■ TESTING METHOD

1) Test Circuit



Waveform

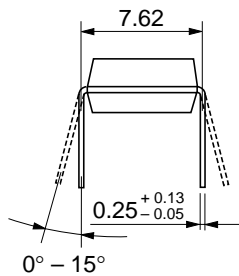
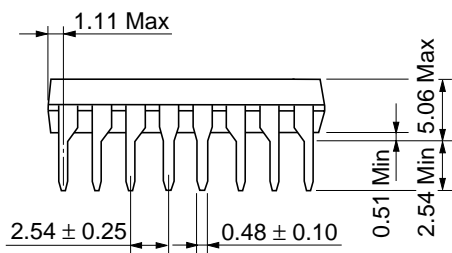
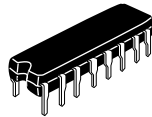
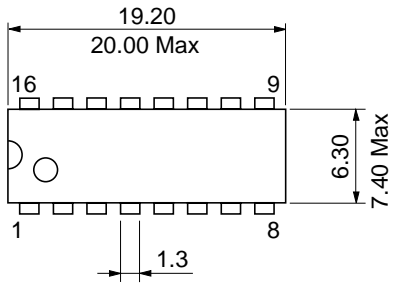


- Notes) 1. C_L includes probe and jig capacitance.
2. All diodes are 1S2074 (H).

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

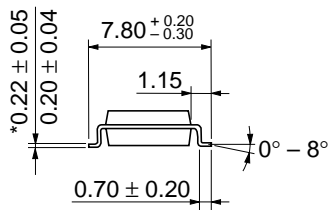
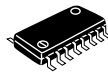
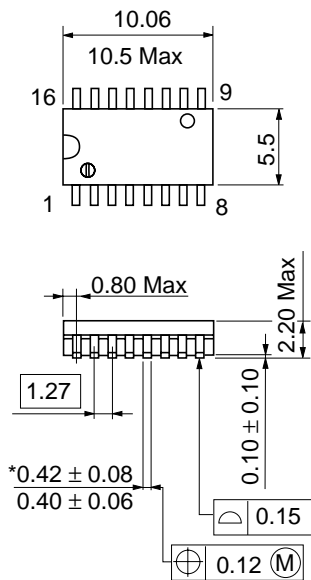
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Unit: mm



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

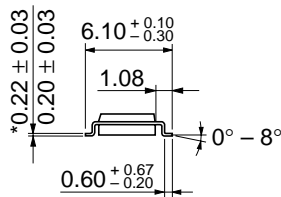
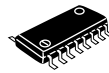
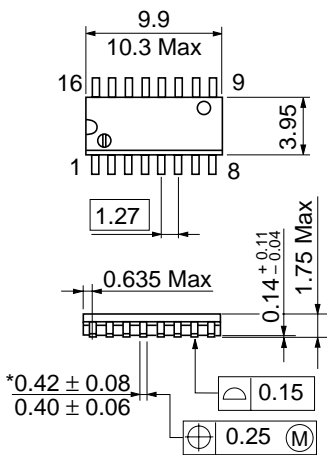
Unit: mm



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

*Dimension including the plating thickness
Base material dimension

Unit: mm



*Dimension including the plating thickness
Base material dimension

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

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HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher StraÙe 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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