

To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

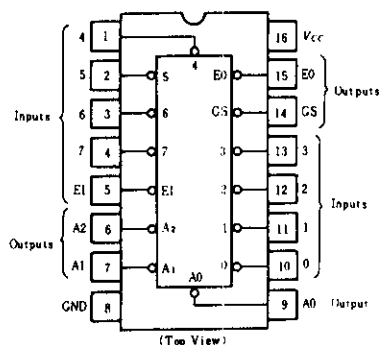
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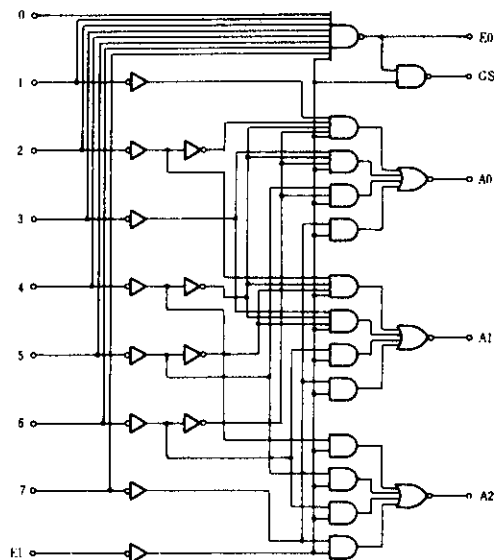
HD74LS148 ● 8-line-to-3-line Octal Priority Encoders

The HD74LS148 encodes eight data lines to three-line (4-2-1) binary (octal). Cascading circuitry (enable input EI and enable output EO) has been provided to allow octal expansion without the need for external circuitry. The data inputs and outputs are active at the low logic level.

■ PIN ARRANGEMENT



■ BLOCK DIAGRAM



■ FUNCTION TABLE

Inputs									Outputs				
EI	0	1	2	3	4	5	6	7	A2	A1	A0	CS	EO
H	X	X	X	X	X	X	X	X	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	L
L	X	X	X	X	X	X	X	L	L	L	L	L	H
L	X	X	X	X	X	X	L	H	L	H	H	L	H
L	X	X	X	X	L	H	H	H	L	H	H	L	H
L	X	X	X	L	H	H	H	H	H	L	L	L	H
L	X	X	L	H	H	H	H	H	H	L	H	L	H
L	X	L	H	H	H	H	H	H	H	H	L	L	H
L	L	H	H	H	H	H	H	H	H	H	H	L	H

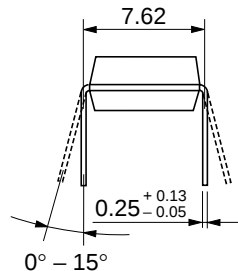
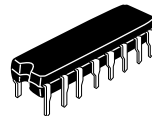
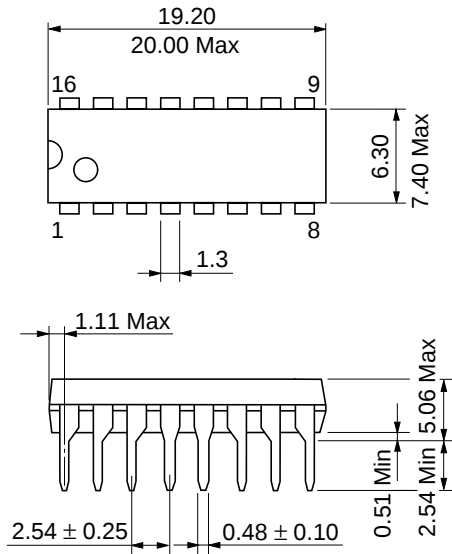
H; high level, L; low level, X; irrelevant

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

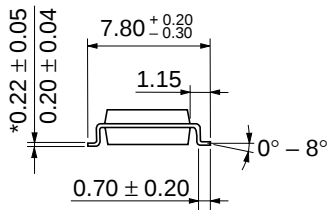
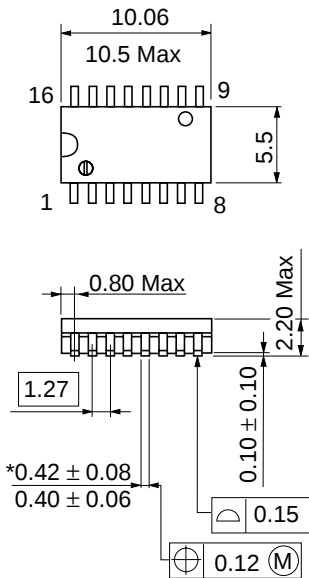
Item	Symbol	Test Conditions	min	typ*	max	Unit
Input voltage	V_{IH}		2.0	—	—	V
	V_{IL}		—	—	0.8	V
Output voltage	V_{OH}	$V_{CC}=4.75\text{V}, V_{IH}=2\text{V}, V_{IL}=0.8\text{V}, I_{OH}=-400\mu\text{A}$	2.7	—	—	V
	V_{OL}	$V_{CC}=4.75\text{V}, V_{IH}=2\text{V}, I_{OL}=4\text{mA}$	—	—	0.4	V
		$V_{IL}=0.8\text{V}, I_{OL}=8\text{mA}$	—	—	0.5	
Input current	I_{IH}	$V_{CC}=5.25\text{V}, V_I=2.7\text{V}$	—	—	40	μA
			—	—	20	
	I_{IL}	$V_{CC}=5.25\text{V}, V_I=0.4\text{V}$	—	—	-0.8	mA
			—	—	-0.4	
	I_I	$V_{CC}=5.25\text{V}, V_I=7\text{V}$	—	—	0.2	mA
			—	—	0.1	
Short-circuit output current	I_{OS}	$V_{CC}=5.25\text{V}$	-20	—	-100	mA
Supply current **	I_{CC}	$V_{CC}=5.25\text{V}$	Condition 1	12	20	mA
			Condition 2	10	17	
Input clamp voltage	V_{IK}	$V_{CC}=4.75\text{V}, I_{IH}=-18\text{mA}$	—	—	-1.5	V

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

** The condition 1 is measured with inputs 7 and EI grounded, other inputs and outputs open, the condition 2 is measured with all inputs and outputs open.

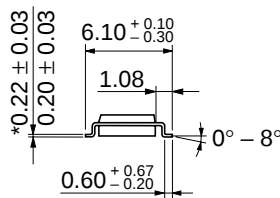
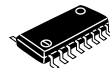
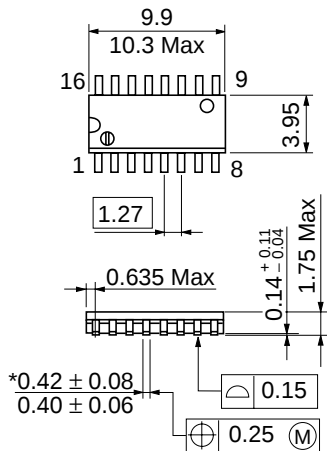


Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g



*Dimension including the plating thickness
Base material dimension

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



*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 Straße 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
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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
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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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