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

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Keep safety first in your circuit designs!

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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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HD74AC240/HD74ACT240

Octal Buffer/Line Driver with 3-State Output

RENESAS

ADE-205-381 (Z)
1st. Edition
Sep. 2000

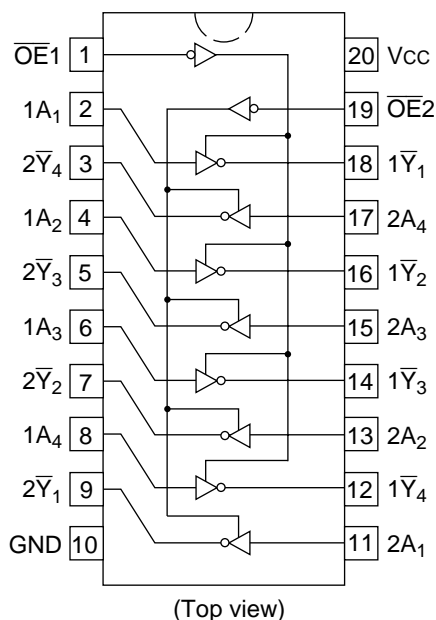
Description

The HD74AC240/HD74ACT240 is an octal buffer and line driver designed to be employed as a memory address driver, clock driver and bus oriented transmitter or receiver which provides improved PC board density.

Features

- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- Outputs Source/Sink 24 mA
- HD74ACT240 has TTL-Compatible Inputs

Pin Arrangement



Truth Tables

Inputs **Outputs (Pins 12, 14, 16, 18)**

\overline{OE}_1	A	Y
L	L	H
L	H	L
H	X	Z

Inputs **Outputs (Pins 3, 5, 7, 9)**

\overline{OE}_2	A	Y
L	L	H
L	H	L
H	X	Z

H : High Voltage Level

L : Low Voltage Level

X : Immaterial

Z : High Impedance

DC Characteristics (unless otherwise specified)

Item	Symbol	Max	Unit	Condition
Maximum quiescent supply current	I_{CC}	80	μA	$V_{IN} = V_{CC}$ or ground, $V_{CC} = 5.5 V$, $T_a = \text{Worst case}$
Maximum quiescent supply current	I_{CC}	8.0	μA	$V_{IN} = V_{CC}$ or ground, $V_{CC} = 5.5 V$, $T_a = 25^\circ C$
Maximum additional I_{CC} /input (HD74ACT240)	I_{CCT}	1.5	mA	$V_{IN} = V_{CC} - 2.1 V$, $V_{CC} = 5.5 V$, $T_a = \text{Worst case}$

AC Characteristics: HD74AC240

Item	Symbol	V _{CC} (V) ^{*1}	Ta = +25°C C _L = 50 pF			Ta = -40°C to +85°C C _L = 50 pF		Unit
			Min	Typ	Max	Min	Max	
Propagation delay	t _{PLH}	3.3	1.0	6.0	8.0	1.0	9.0	ns
Data to output		5.0	1.0	4.5	6.5	1.0	7.0	
Propagation delay	t _{PHL}	3.3	1.0	5.0	8.0	1.0	8.5	ns
Data to output		5.0	1.0	4.5	6.0	1.0	6.5	
Output enable time	t _{ZH}	3.3	1.0	6.0	10.5	1.0	11.0	ns
		5.0	1.0	5.0	7.0	1.0	8.0	
Output enable time	t _{ZL}	3.3	1.0	7.0	10.0	1.0	11.0	ns
		5.0	1.0	5.5	8.0	1.0	8.5	
Output disable time	t _{HZ}	3.3	1.0	7.0	10.0	1.0	10.5	ns
		5.0	1.0	6.5	9.0	1.0	9.5	
Output disable time	t _{LZ}	3.3	1.0	7.5	10.5	1.0	11.5	ns
		5.0	1.0	6.5	9.0	1.0	9.5	

Note: 1. Voltage Range 3.3 is 3.3 V ± 0.3 V
Voltage Range 5.0 is 5.0 V ± 0.5 V

AC Characteristics: HD74ACT240

Item	Symbol	V _{CC} (V) ^{*1}	Ta = +25°C C _L = 50 pF			Ta = -40°C to +85°C C _L = 50 pF		Unit
			Min	Typ	Max	Min	Max	
Propagation delay Data to output	t _{PLH}	5.0	1.0	6.0	8.5	1.0	9.5	ns
Propagation delay Data to output	t _{PHL}	5.0	1.0	5.5	7.5	1.0	8.5	ns
Output enable time	t _{ZH}	5.0	1.0	7.0	8.5	1.0	9.5	ns
Output enable time	t _{ZL}	5.0	1.0	7.0	9.5	1.0	10.5	ns
Output disable time	t _{HZ}	5.0	1.0	8.0	9.5	1.0	10.5	ns
Output disable time	t _{LZ}	5.0	1.0	6.5	10.0	1.0	10.5	ns

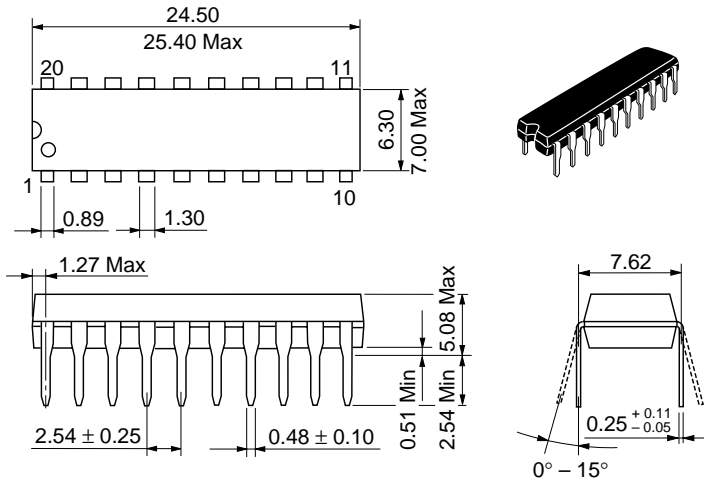
Note: 1. Voltage Range 5.0 is 5.0 V ± 0.5 V

Capacitance

Item	Symbol	Typ	Unit	Condition
Input capacitance	C_{IN}	4.5	pF	$V_{CC} = 5.5\text{ V}$
Power dissipation capacitance	C_{PD}	45.0	pF	$V_{CC} = 5.0\text{ V}$

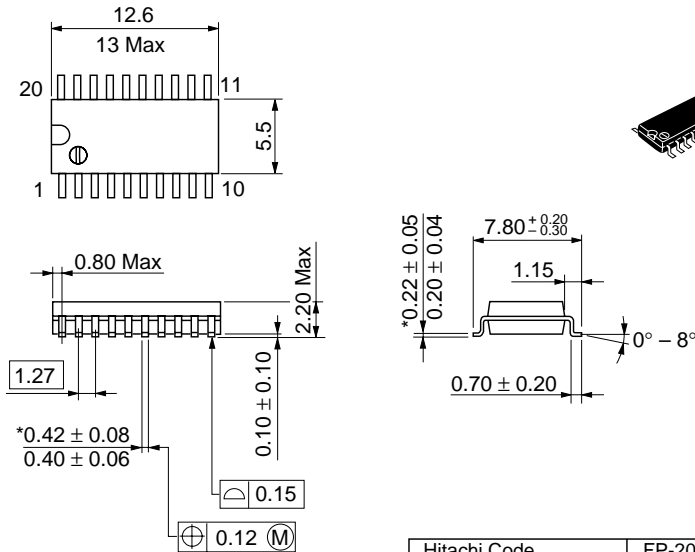
Package Dimensions

Unit: mm



Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Mass (reference value)	1.26 g

Unit: mm

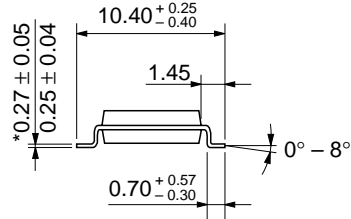
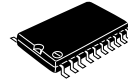
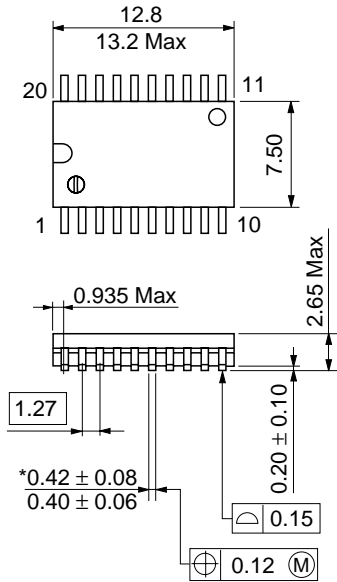


*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-20DA
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.31 g

HD74AC240/HD74ACT240

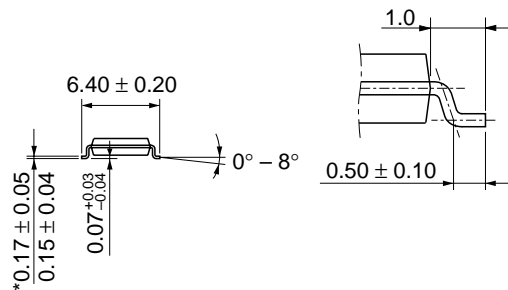
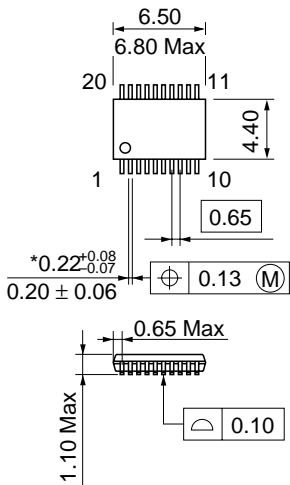
Unit: mm



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-20DB
JEDEC	Conforms
EIAJ	—
Mass (reference value)	0.52 g

Unit: mm



*Dimension including the plating thickness
Base material dimension

Hitachi Code	TTP-20DA
JEDEC	—
EIAJ	—
Mass (reference value)	0.07 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

URL	NorthAmerica	:	http://semiconductor.hitachi.com/
	Europe	:	http://www.hitachi-eu.com/hel/ecg
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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) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel : <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : <http://www.hitachi.com.sg>

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel : <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : <http://www.hitachi.com.tw>

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
URL : <http://www.hitachi.com.hk>

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