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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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HD74AC241/HD74ACT241

Octal Buffer/Line Driver with 3-State Output

RENESAS

ADE-205-382 (Z)
1st. Edition
Sep. 2000

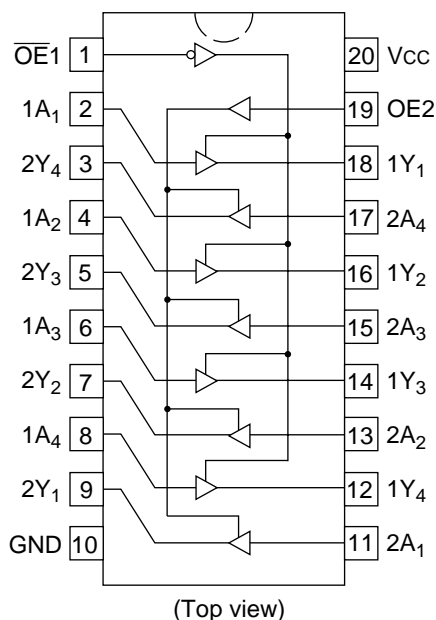
Description

The HD74AC241/HD74ACT241 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
- HD74ACT241 has TTL-Compatible Inputs

Pin Arrangement



Truth Tables

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

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

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

Inputs	A	Y
\overline{OE}_2	A	Y
H	L	L
H	H	H
L	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 (HD74ACT241)	I_{CCT}	1.5	mA	$V_{IN} = V_{CC} - 2.1 V$, $V_{CC} = 5.5 V$, $T_a = \text{Worst case}$

AC Characteristics: HD74AC241

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	9.0	1.0	10.0	ns
Data to output		5.0	1.0	5.0	7.0	1.0	7.5	
Propagation delay	t _{PHL}	3.3	1.0	6.0	9.0	1.0	10.5	ns
Data to output		5.0	1.0	4.5	7.0	1.0	7.5	
Output enable time	t _{ZH}	3.3	1.0	6.5	12.5	1.0	13.0	ns
		5.0	1.0	5.5	9.0	1.0	9.5	
Output enable time	t _{ZL}	3.3	1.0	7.0	12.0	1.0	13.0	ns
		5.0	1.0	5.5	9.0	1.0	9.5	
Output disable time	t _{HZ}	3.3	1.0	8.0	12.0	1.0	12.5	ns
		5.0	1.0	6.5	10.0	1.0	10.5	
Output disable time	t _{LZ}	3.3	1.0	7.0	12.5	1.0	13.5	ns
		5.0	1.0	6.0	10.0	1.0	10.5	

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: HD74ACT241

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	6.5	9.0	1.0	10.0	ns
Propagation delay Data to output	t _{PHL}	5.0	1.0	7.0	9.0	1.0	10.0	ns
Output enable time	t _{ZH}	5.0	1.0	6.0	9.0	1.0	10.0	ns
Output enable time	t _{ZL}	5.0	1.0	7.0	10.0	1.0	11.0	ns
Output disable time	t _{HZ}	5.0	1.0	8.0	10.5	1.0	11.5	ns
Output disable time	t _{LZ}	5.0	1.0	7.0	10.5	1.0	11.5	ns

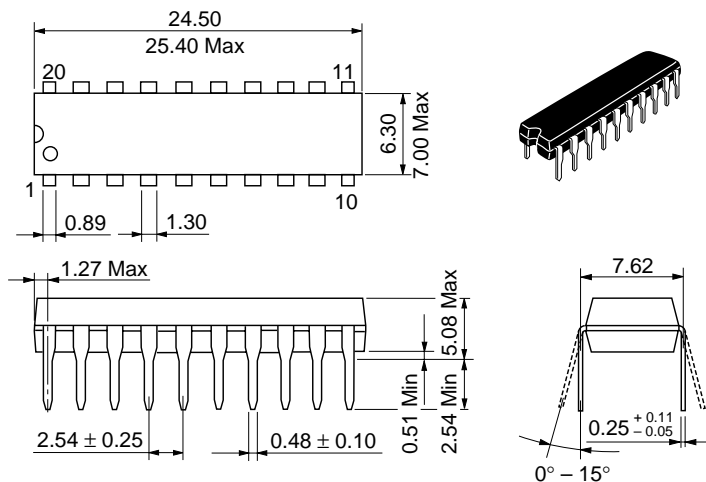
Note: 1. Voltage Range 5.0 is 5.0 V ± 0.5 V

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	$V_{CC} = 5.0\text{ V}$

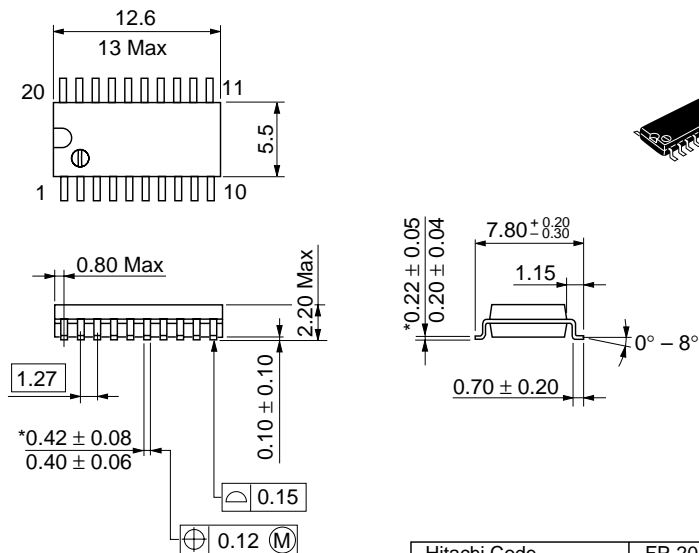
Package Dimensions

Unit: mm



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

Unit: mm

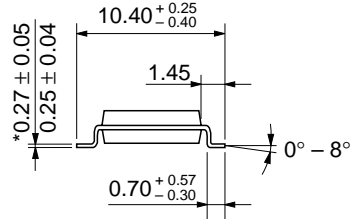
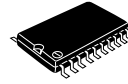
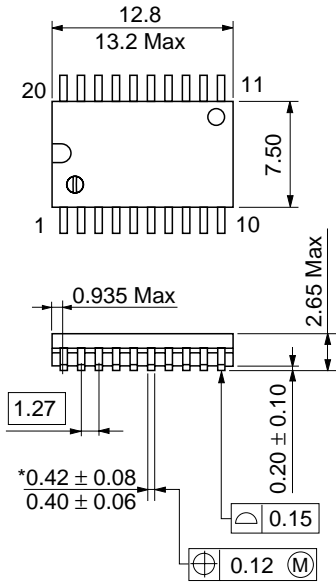


*Dimension including the plating thickness
Base material dimension

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

HD74AC241/HD74ACT241

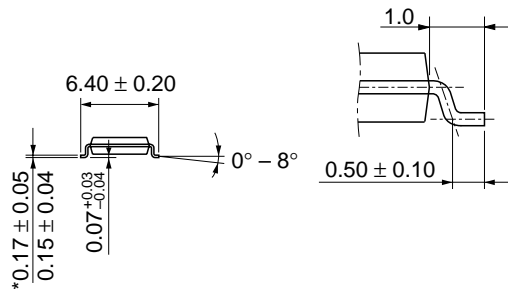
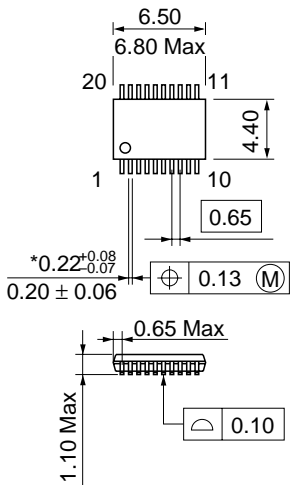
Unit: mm



*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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