To all our customers

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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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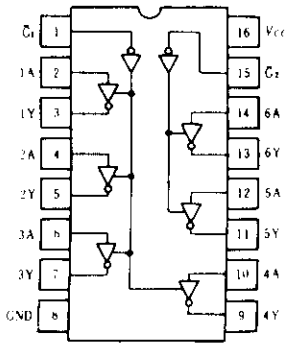
HD74LS368A ●Hex Bus Drivers (inverted data outputs with three-state outputs)

■PIN ARRANGEMENT



(Top View)

■ABSOLUTE MAXIMUM RATINGS

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

■FUNCTION TABLE

$\bar{G}$	A	Y
H	×	Z
L	L	H
L	H	L

Note) H: high level, L: low level,
X: irrelevant
Z: off (high-impedance) state of a 3-state output

■RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
Output current	I_{OH}	—	—	−2.6	mA
Output current	I_{OL}	—	—	24	mA

■ELECTRICAL CHARACTERISTICS (Ta=−20～+75°C)

Item		Symbol	Test Conditions		min	typ*	max	Unit
Input voltage		V_{IH}			2.0	—	—	V
		V_{IL}			—	—	0.8	
Output voltage		V_{OH}	V_{CC}=4.75V, V_{IH}=2V, V_{IL}=0.8V, I_{OH}=−2.6mA		2.4	—	—	V
		V_{OL}	V_{CC}=4.75V, V_{IH}=2V, V_{IL}=0.8V	I_{OL}=12mA	—	—	0.4	
				I_{OL}=24mA			0.5	
Output current		I_{OZ}	V_{CC}=5.25V, V_{IH}=2V, V_{IL}=0.8V	V_O=2.4V	—	—	20	μA
				V_O=0.4V	—	—	−20	
Input current		I_{IH}	V_{CC}=5.25V, V_I=2.7V		—	—	20	μA
	A inputs	I_{IL}	V_{CC}=5.25V, V_I=0.5V, $\overline{G}$ input at 2V		—	—	−20	μA
			V_{CC}=5.25V, V_I=0.4V, $\overline{G}$ inputs at 0.4V		—	—	−0.4	mA
	$\overline{G}$ inputs		V_{CC}=5.25V, V_I=0.4V		—	—	−0.4	
		I_I	V_{CC}=5.25V, V_I=7V		—	—	0.1	mA
Short-circuit output current		I_{OS}	V_{CC}=5.25V		−40	—	−225	mA
Supply current **		I_{CC}	V_{CC}=5.25V		—	12	21	mA
Input clamp voltage		V_{IK}	V_{CC}=5.25V, I_{IN}=−18mA		—	—	−1.5	V

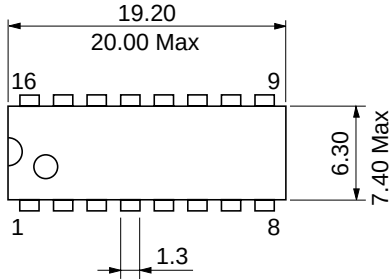
* V_{CC}=5V, Ta=25°C
** With all outputs open, I_{CC} is measured with all inputs grounded and all $\overline{G}$ inputs at 4.5V.

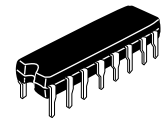
■SWITCHING CHARACTERISTICS (V_{CC}=5V, Ta=25°C)

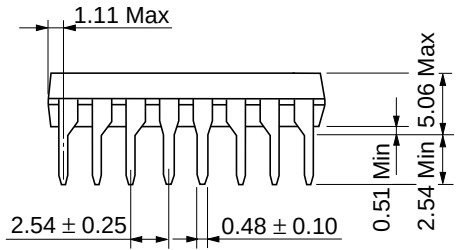
Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	C_L=45pF, R_L=667Ω	—	7	15	ns
	t_{PHL}		—	12	18	
Output enable time	t_{ZH}		—	18	35	
	t_{ZL}		—	28	45	
Output disable time	t_{HZ}	C_L=5pF, R_L=667Ω	—	—	32	
	t_{LZ}		—	—	35	

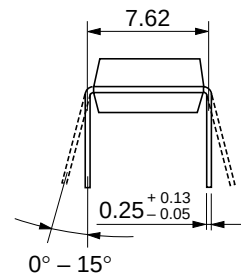
Note) Refer to Test Circuit and Waveform of the Common Item

Unit: mm



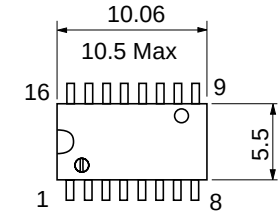


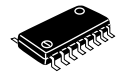


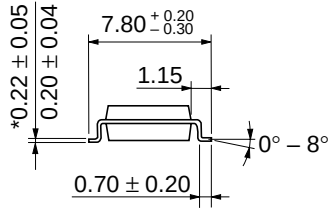


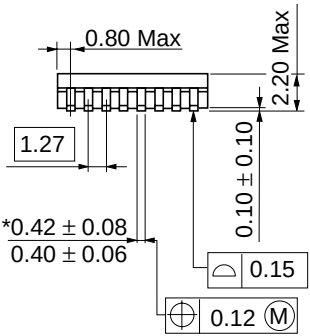
Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g

Unit: mm





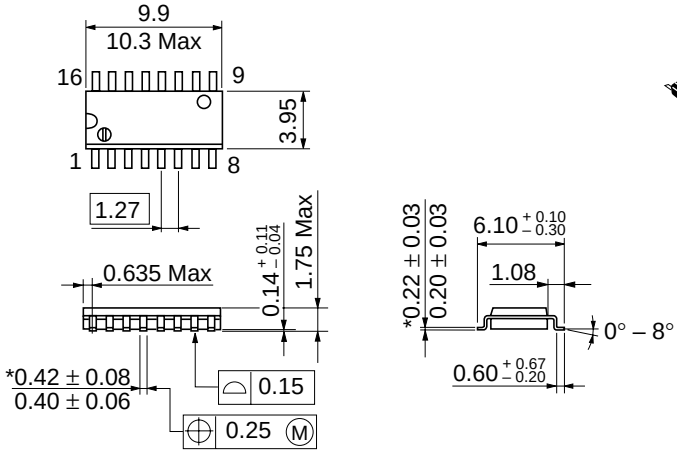


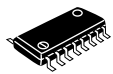


*Dimension including the plating thickness
Base material dimension

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

Unit: mm





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

*Dimension including the plating thickness
Base material dimension

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