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!

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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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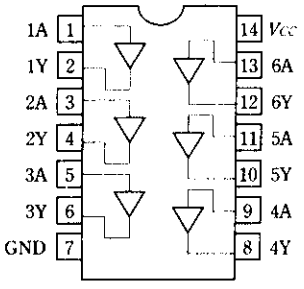
■ PIN ARRANGEMENT



(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	V_{out}	30	V
Operating temperature range	T_{opr}	−20 ~ +75	°C
Storage temperature range	T_{stg}	−65 ~ +150	°C

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
High level output voltage	V_{OH}	–	–	30	V
Low level output current	I_{OL}	–	–	48	mA
Operating temperature range	T_{opr}	−20	25	75	°C

■ 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	V
Output voltage	V_{OL}	V_{CC} = 4.75V,	V_{IL} = 0.8V	I_{OL} = 24mA	–	–	0.4	V
				I_{OL} = 48mA	–	–	0.5	V
Input current	I_{IH}	V_{CC} = 5.25V	V_I = 2.7V		–	–	20	µA
	I_{IL}	V_{CC} = 5.25V,	V_I = 0.4V		–	–	–0.4	mA
	I_I	V_{CC} = 5.25V,	V_I = 7V		–	–	0.1	mA
Output current	I_{OH}	V_{CC} = 4.75V,	V_{IH} = 2V,	V_{OH} = 30V	–	–	250	µA
Supply current	I_{CCH}	V_{CC} = 5.25V			–	22	41	mA
	I_{CCL}	V_{CC} = 5.25V			–	17	30	mA
Input clamp voltage	V_{IK}	V_{CC} = 4.75V,	I_{IN} = –18mA		–	–	–1.5	V

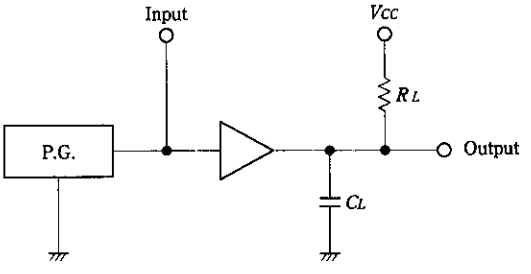
*V_{CC} = 5V, Ta = 25°C

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

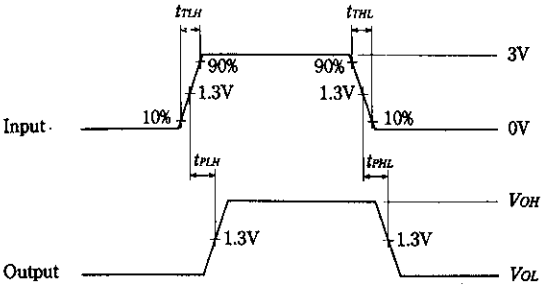
Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	C_L = 15pF, R_L = 110Ω	–	10	15	ns
	t_{PHL}		–	20	30	ns

■ TESTING METHOD

Test Circuit

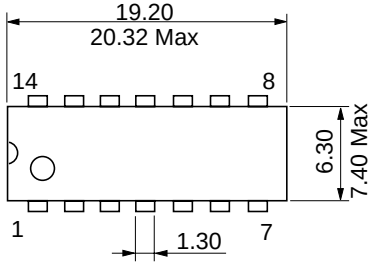


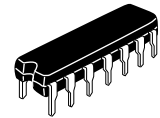
Waveform

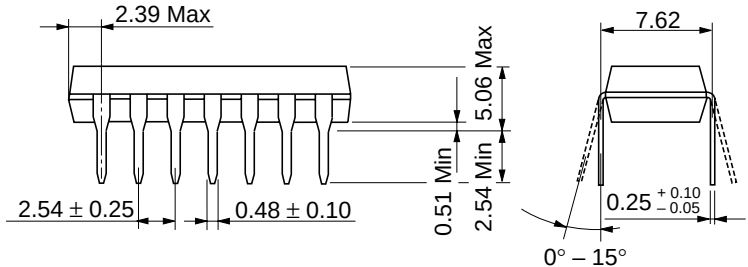


Notes) 1. Input pulse: PRR = 1MHz, duty cycle 50%, Zout = 50Ω, $t_{TLH} \leq 15$ns, $t_{THL} \leq 6$ns
2. C_L includes probe and jig capacitance.
3. All diodes are 1S2074Ⓗ

Unit: mm

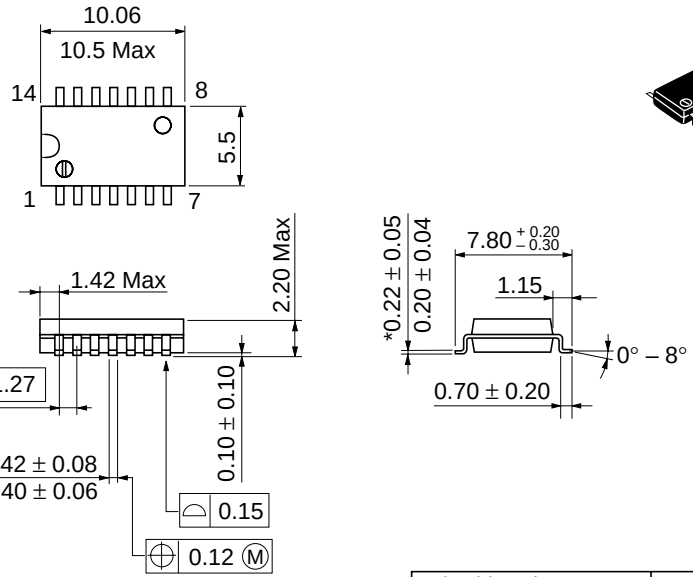


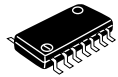




Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g

Unit: mm

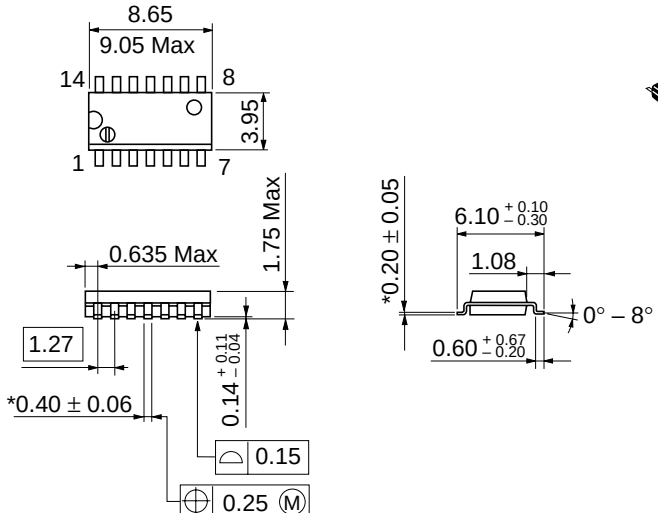




Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

*Dimension including the plating thickness
Base material dimension

Unit: mm



Hitachi Code	FP-14DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.13 g

*Pd plating

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