

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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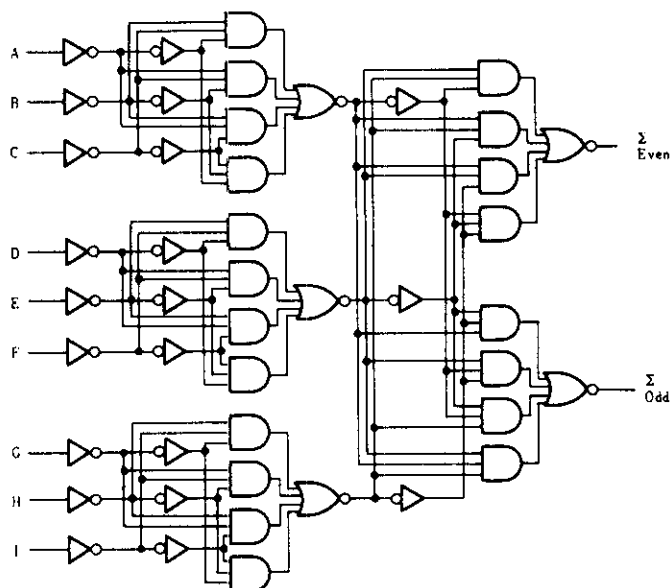
HD74LS280 • 9-bit Odd/Even Parity Generators/Checkers

This parity generator/checker offers the designer a trade-off between reduced power consumption and high performance. Although the HD74LS280 is implemented without expander inputs, the corresponding function is provided by the availability of an input at pin 4 and the absence of any internal connection at pin 3.

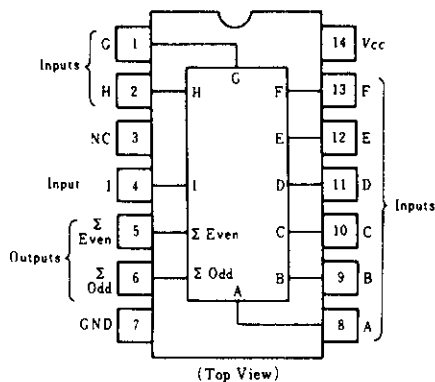
■ FUNCTION TABLE

Number of inputs A through I that are high	Outputs	
	Σ Even	Σ Odd
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

■ BLOCK DIAGRAM



■ PIN ARRANGEMENT



■ 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}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{IL} = 0.8\text{V}$	$I_{OL} = 4\text{mA}$	—	0.4	V
			$I_{OL} = 8\text{mA}$	—	0.5	
Input current	I_{IN}	$V_{CC} = 5.25\text{V}$, $V_I = 2.7\text{V}$	—	—	20	μA
	I_{IL}	$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$	—	—	-0.4	mA
	I_I	$V_{CC} = 5.25\text{V}$, $V_I = 7\text{V}$	—	—	0.1	mA
Short-circuit output current	I_{OS}	$V_{CC} = 5.25\text{V}$	-20	—	-100	mA
Supply current**	I_{CC}	$V_{CC} = 5.25\text{V}$	—	16	27	mA
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}$, $I_{IN} = -18\text{mA}$	—	—	-1.5	V

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

** I_{CC} is measured with all outputs open and all inputs grounded.

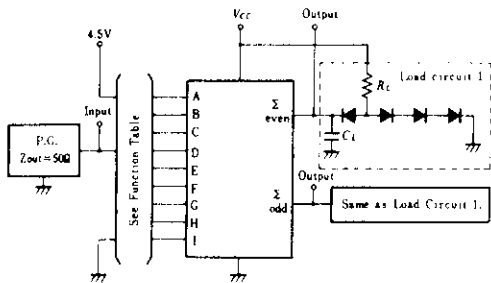
HD74LS280

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

Item	Symbol	Outputs	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	Σ Even	$C_L=15\text{pF}, R_L=2\text{k}\Omega$	—	33	50	ns
	t_{PHL}			—	29	45	ns
	t_{PLH}	Σ Odd		—	23	45	ns
	t_{PHL}			—	31	50	ns

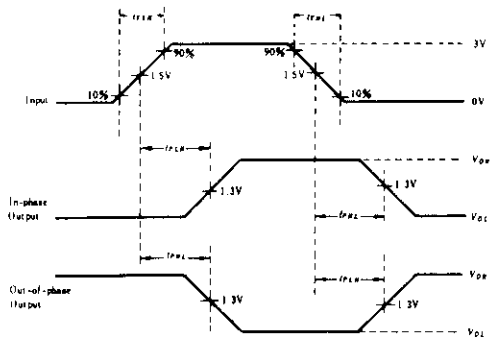
TESTING METHOD

1) Test circuit

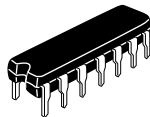
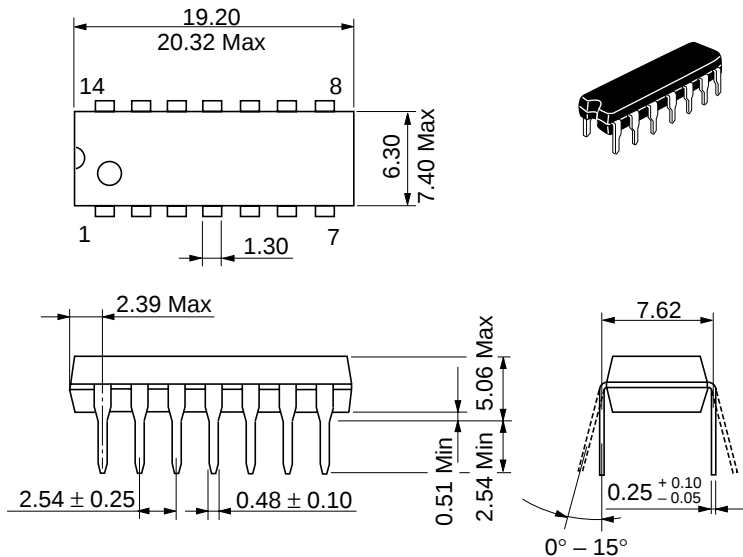


- Notes) 1. C_L includes probe and jig capacitance.
2. All diodes are 1S2074 (H)

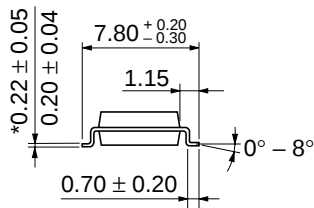
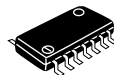
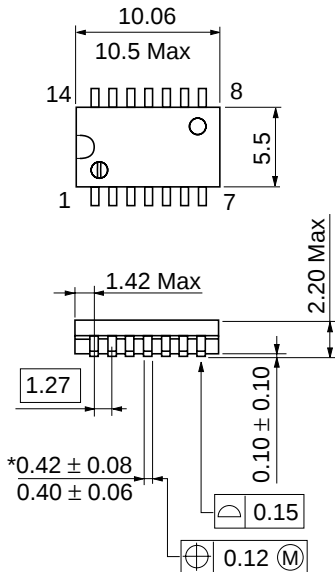
Waveform



Input pulse; $t_{TLH} \leq 15\text{ns}$, $t_{THL} \leq 6\text{ns}$,
 $PRR=1\text{MHz}$, duty cycle 50%.

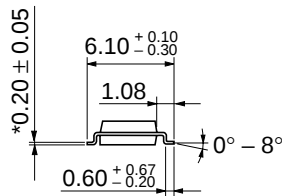
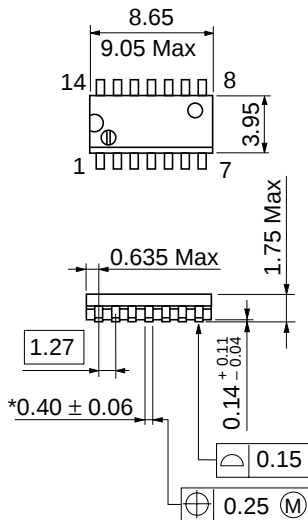


Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g



*Dimension including the plating thickness
Base material dimension

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



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

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