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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Not recommended
for new design

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HD74LS280

9-bit Odd / Even Parity Generator / Checker

REJ03D0475-0300

Rev.3.00

Jul.15.2005

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.

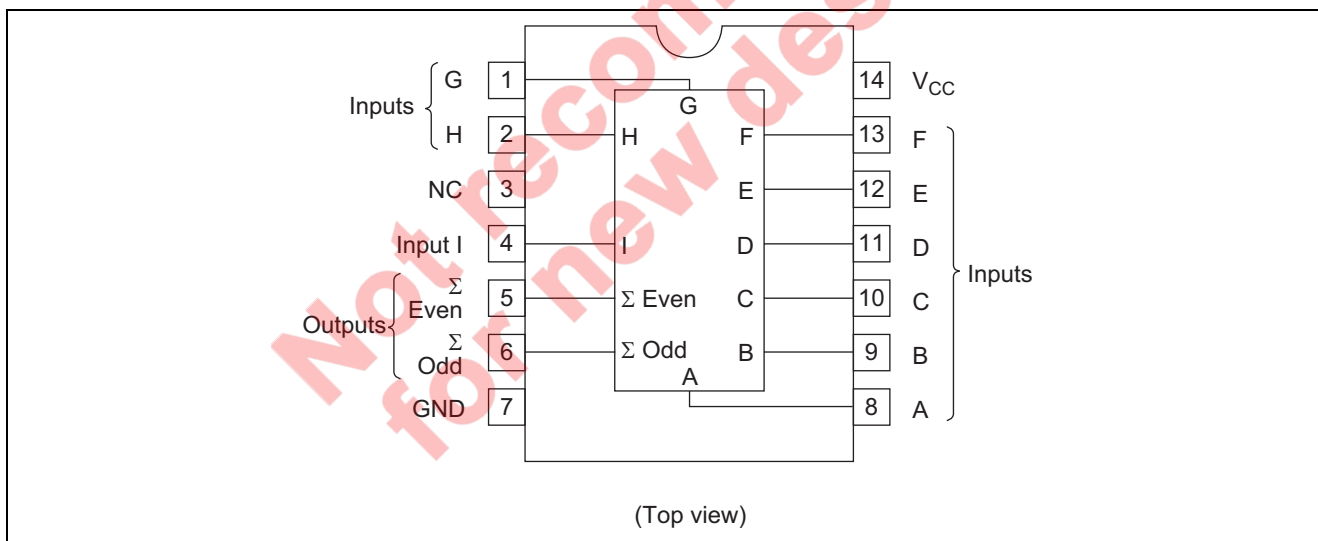
Features

- Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS280P	DILP-14 pin	PRDP0014AB-B (DP-14AV)	P	—
HD74LS280FPEL	SOP-14 pin (JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)

Notes: Please consult the sales office for the above package availability.

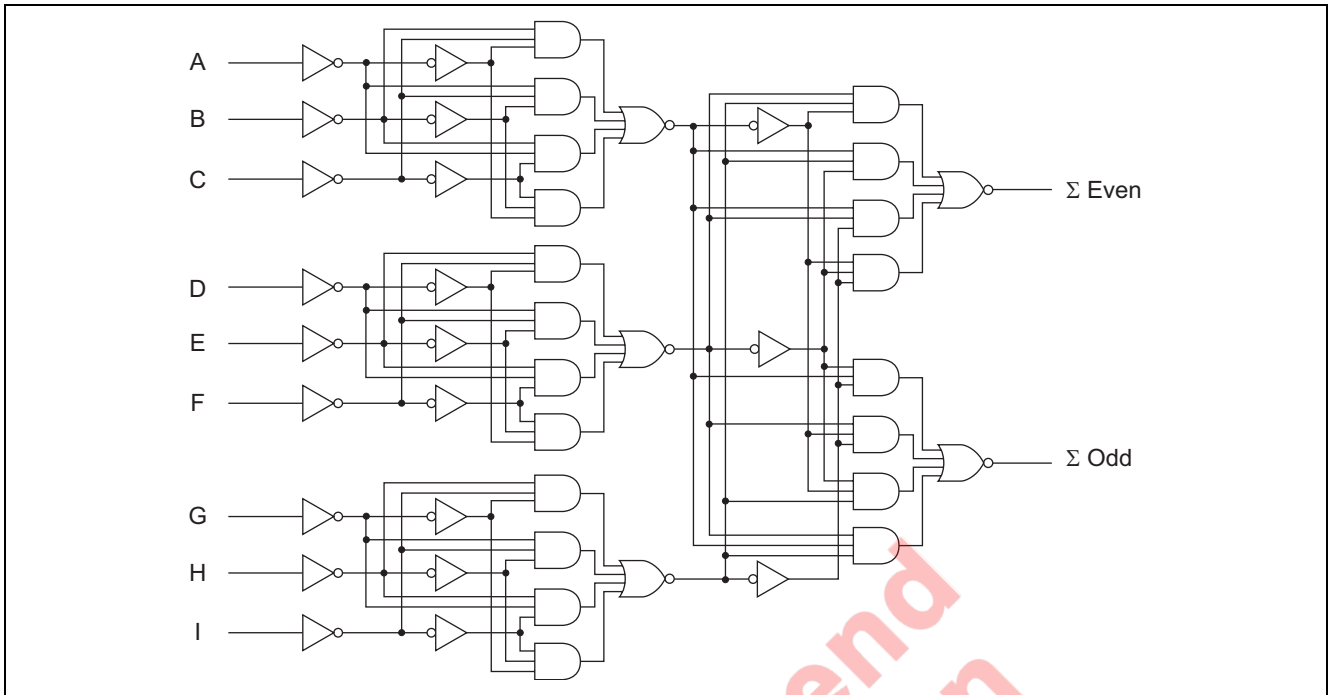
Pin Arrangement



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



Absolute Maximum Ratings

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7	V
Input voltage	V_{IN}	7	V
Power dissipation	P_T	400	mW
Storage temperature	T_{stg}	-65 to +150	°C

Note: Voltage value, unless otherwise noted, are with respect to network ground terminal.

Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
Output current	I_{OH}	—	—	-400	μA
	I_{OL}	—	—	8	mA
Operating temperature	T_{opr}	-20	25	75	°C

Electrical Characteristics

(Ta = -20 to +75 °C)

Item	Symbol	min.	typ.*	max.	Unit	Condition
Input voltage	V _{IH}	2.0	—	—	V	
	V _{IL}	—	—	0.8	V	
Output voltage	V _{OH}	2.7	—	—	V	V _{CC} = 4.75 V, V _{IH} = 2 V, V _{IL} = 0.8 V, I _{OH} = -400 μA
	V _{OL}	—	—	0.4	V	V _{CC} = 4.75 V, V _{IH} = 2 V, V _{IL} = 0.8 V
—		—	0.5			
Input current	I _{IH}	—	—	20	μA	V _{CC} = 5.25 V, V _I = 2.7 V
	I _{IL}	—	—	-0.4	mA	V _{CC} = 5.25 V, V _I = 0.4 V
	I _I	—	—	0.1	mA	V _{CC} = 5.25 V, V _I = 7 V
Short-circuit output current	I _{OS}	-20	—	-100	mA	V _{CC} = 5.25 V
Supply current**	I _{CC}	—	16	27	mA	V _{CC} = 5.25 V
Input clamp voltage	V _{IK}	—	—	-1.5	V	V _{CC} = 4.75 V, I _{IN} = -18 mA

Notes: * V_{CC} = 5 V, Ta = 25°C** I_{CC} is measured with all outputs open and all inputs grounded.

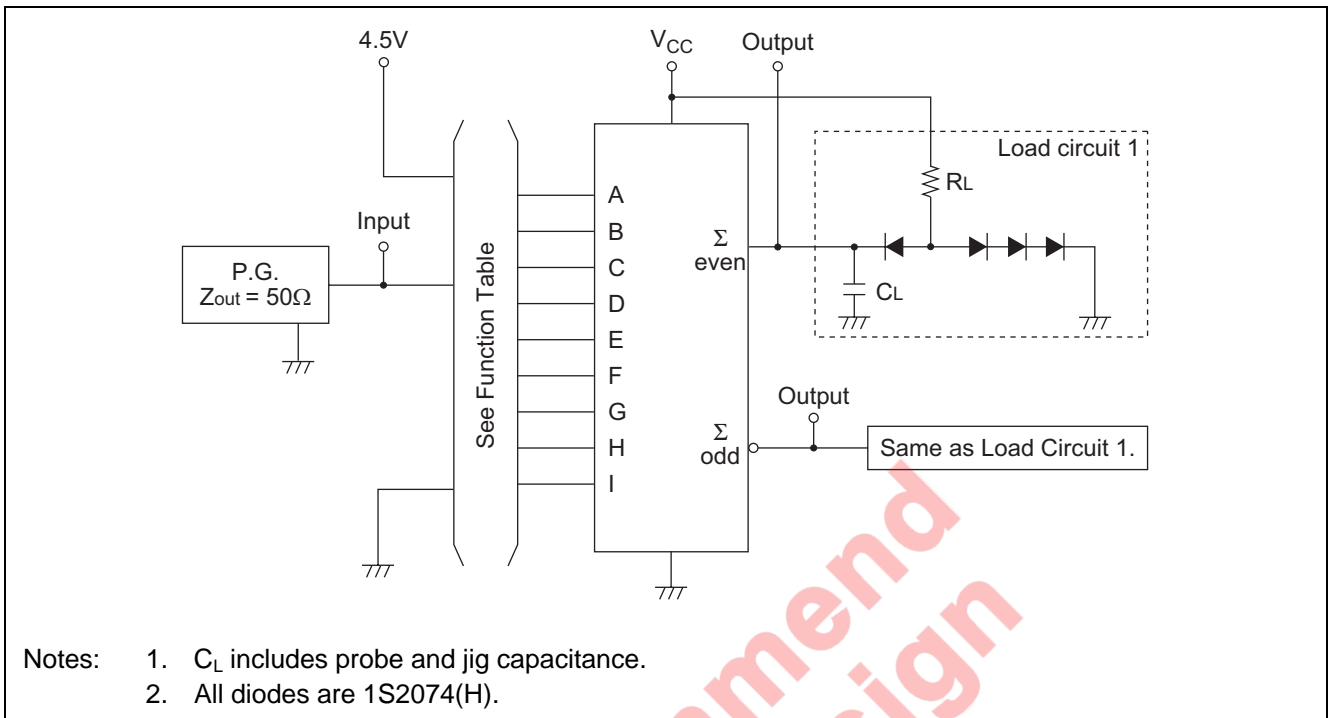
Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

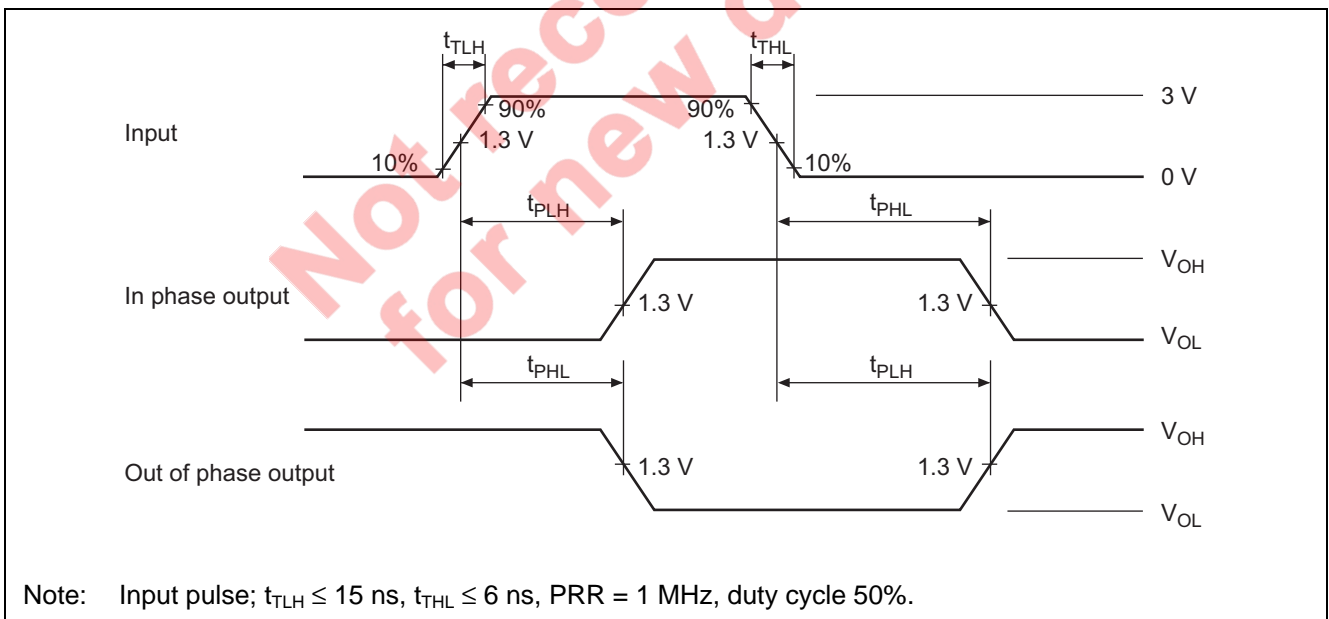
Item	Symbol	Outputs	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	Σ Even	—	33	50	ns	C _L = 15 pF, R _L = 2 kΩ
	t _{PHL}		—	29	45	ns	
	t _{PLH}	Σ Odd	—	23	45	ns	
	t _{PHL}		—	31	50	ns	

Testing Method

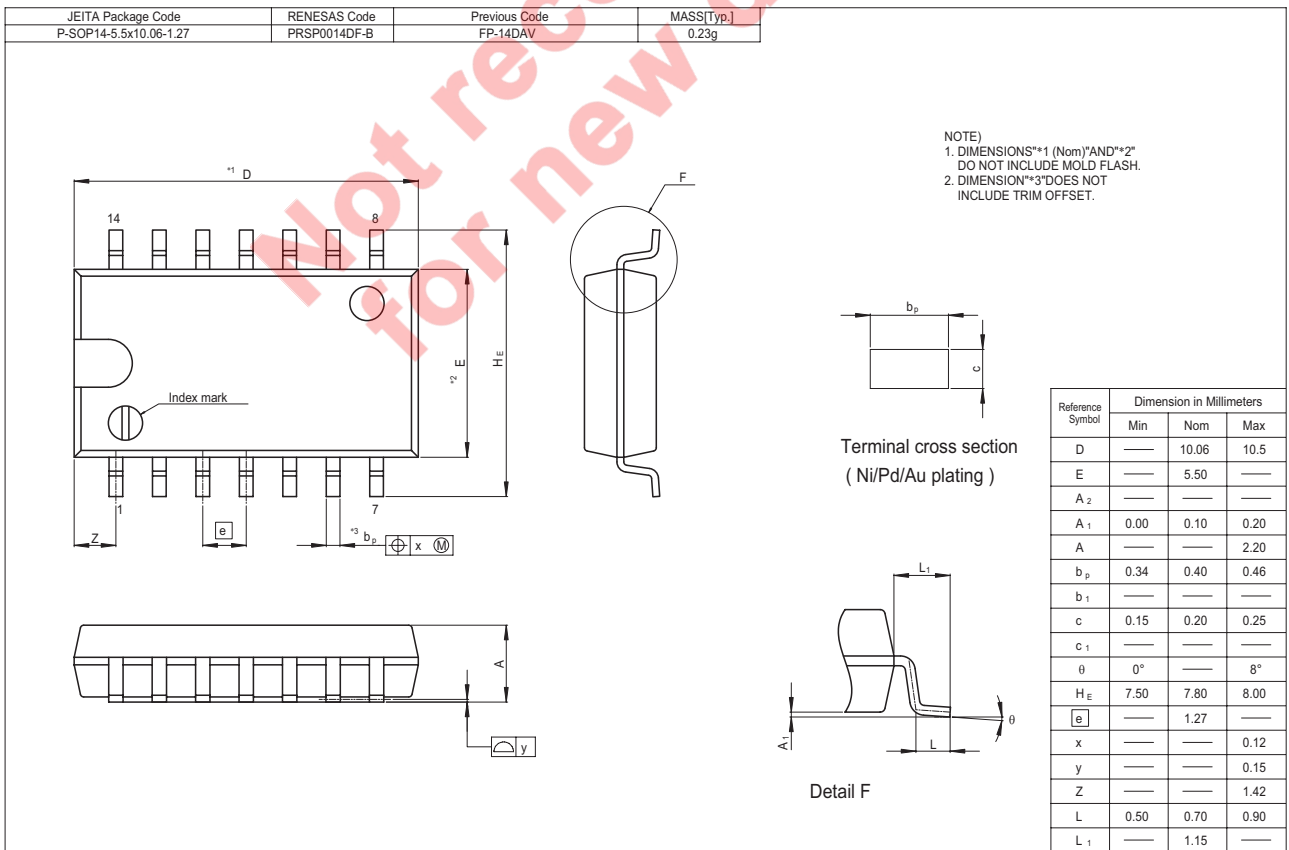
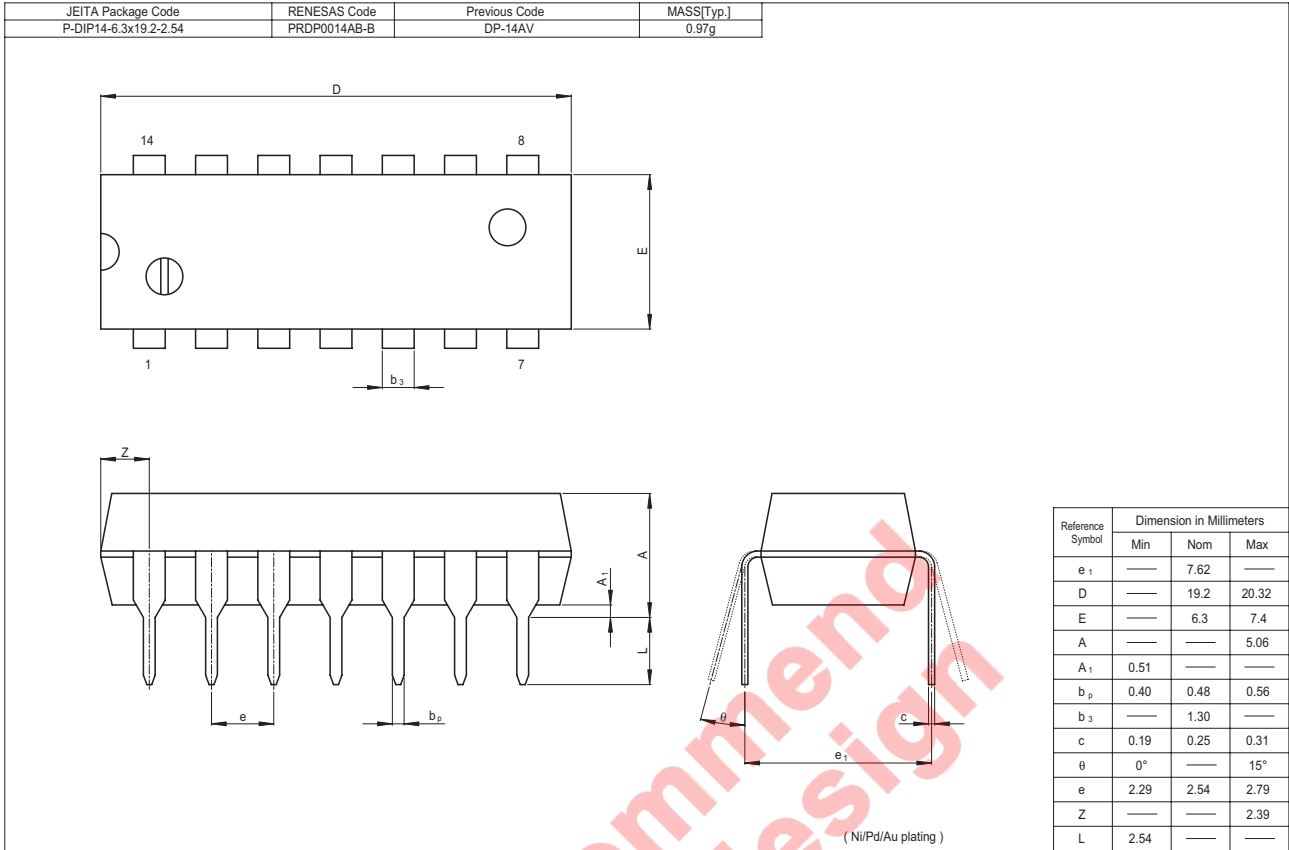
Test Circuit



Waveform



Package Dimensions



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