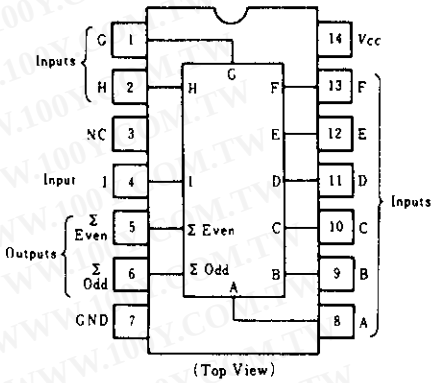
HD74LS280 ●9-bit Odd/Even Parity Generators/Checkers

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

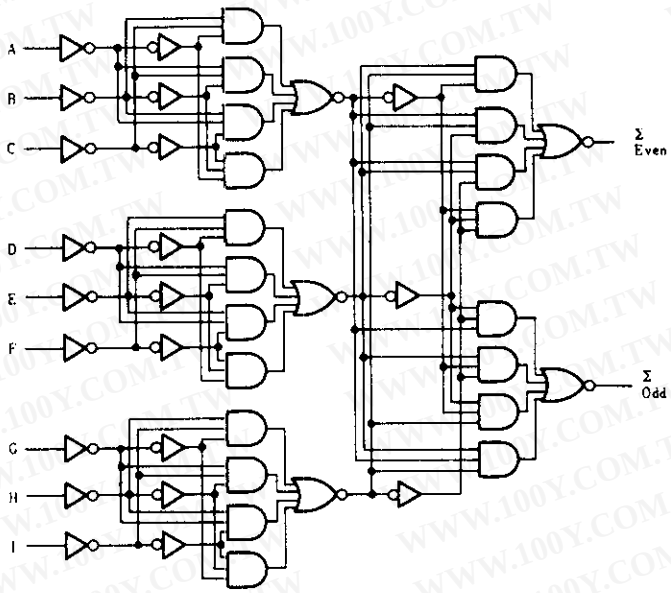
Number of inputs A through I that are high	Outputs	
	Σ Even	Σ Odd
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

■PIN ARRANGEMENT



(Top View)

■BLOCK DIAGRAM



■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_{OH}	V_{CC}=4.75V, V_{IH}=2V, V_{IL}=0.8V, I_{OH}=−400μA	2.7	—	—	V
	V_{OL}	V_{CC}=4.75V, V_{IH}=2V, V_{IL}=0.8V, I_{OL}=4mA	—	—	0.4	V
		V_{CC}=4.75V, V_{IH}=2V, V_{IL}=0.8V, I_{OL}=8mA	—	—	0.5	
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
Short-circuit output current	I_{OS}	V_{CC}=5.25V	−20	—	−100	mA
Supply current**	I_{CC}	V_{CC}=5.25V	—	16	27	mA
Input clamp voltage	V_{IK}	V_{CC}=4.75V, I_{IN}=−18mA	—	—	−1.5	V

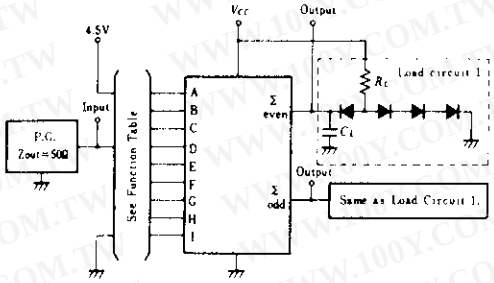
* V_{CC}=5V, Ta=25°C
** I_{CC} is measured with all outputs open and all inputs grounded.

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

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

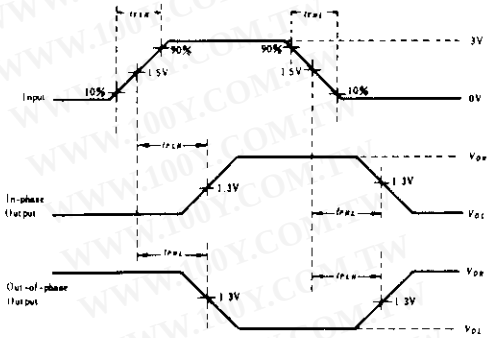
■ TESTING METHOD

1) Test circuit



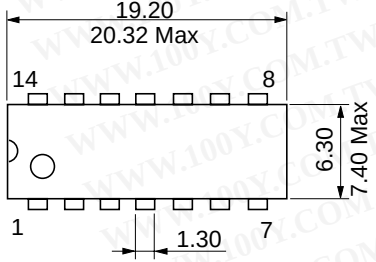
Notes) 1. C_L includes probe and jig capacitance.
2. All diodes are 1S2074 Ⓗ

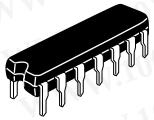
Waveform

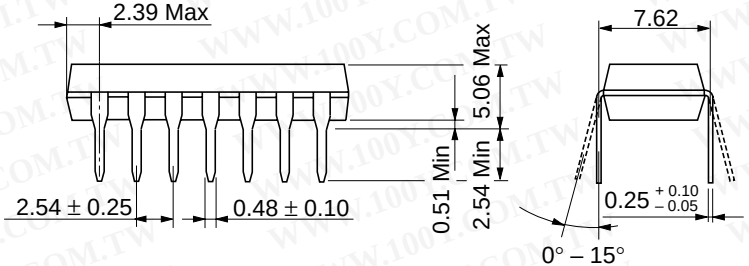


Input pulse; t_{TLH}≦15ns, t_{THL}≦6ns,
PRR=1MHz, duty cycle 50%.

Unit: mm

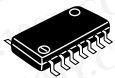


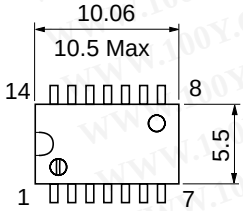


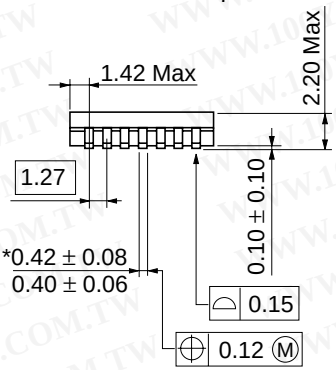


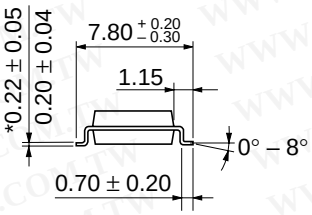
Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g

Unit: mm





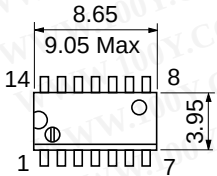


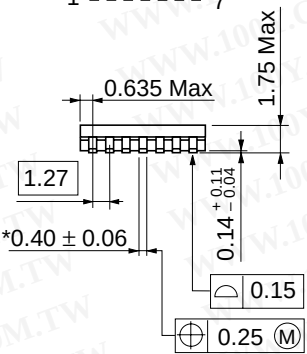


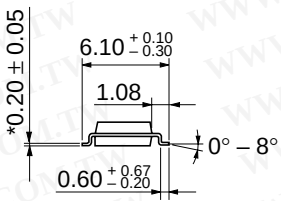
*Dimension including the plating thickness
Base material dimension

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

Unit: mm







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

*Pd plating

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