HD74AC280/HD74ACT280

9-bit Parity Generator/Checker

HITACHI

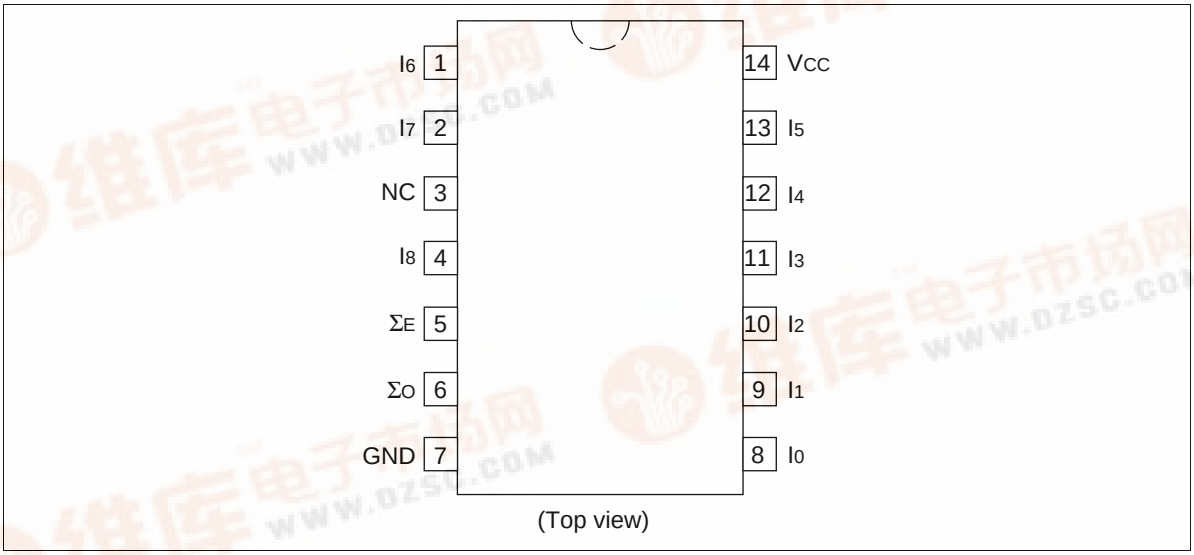
Description

The HD74AC280/HD74ACT280 is a high-speed parity generator/checker that accepts nine bits of input data and detects whether an even or an odd number of these inputs is High. If an even number of inputs is High, the Sum Even output is High. If an odd number is High, the Sum Even output is Low. The Sum Odd output is the complement of the Sum Even output.

Features

- Outputs Source/Sink 24 mA
- HD74ACT280 has TTL-Cmpatible Inputs

Pin Arrangement



(Top view)

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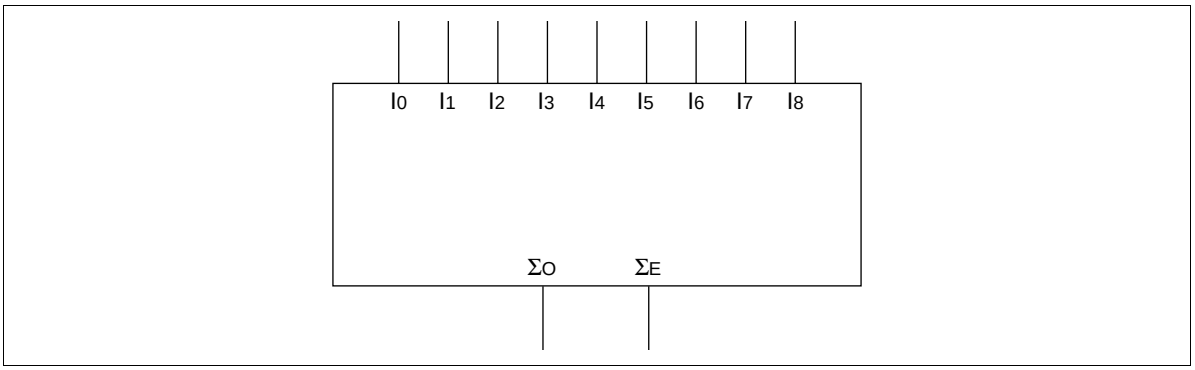
Logic Symbol



Pin Names

$I_0 – I_8$	Data Inputs
$_O$	Odd Parity Output
$_E$	Even Parity Output

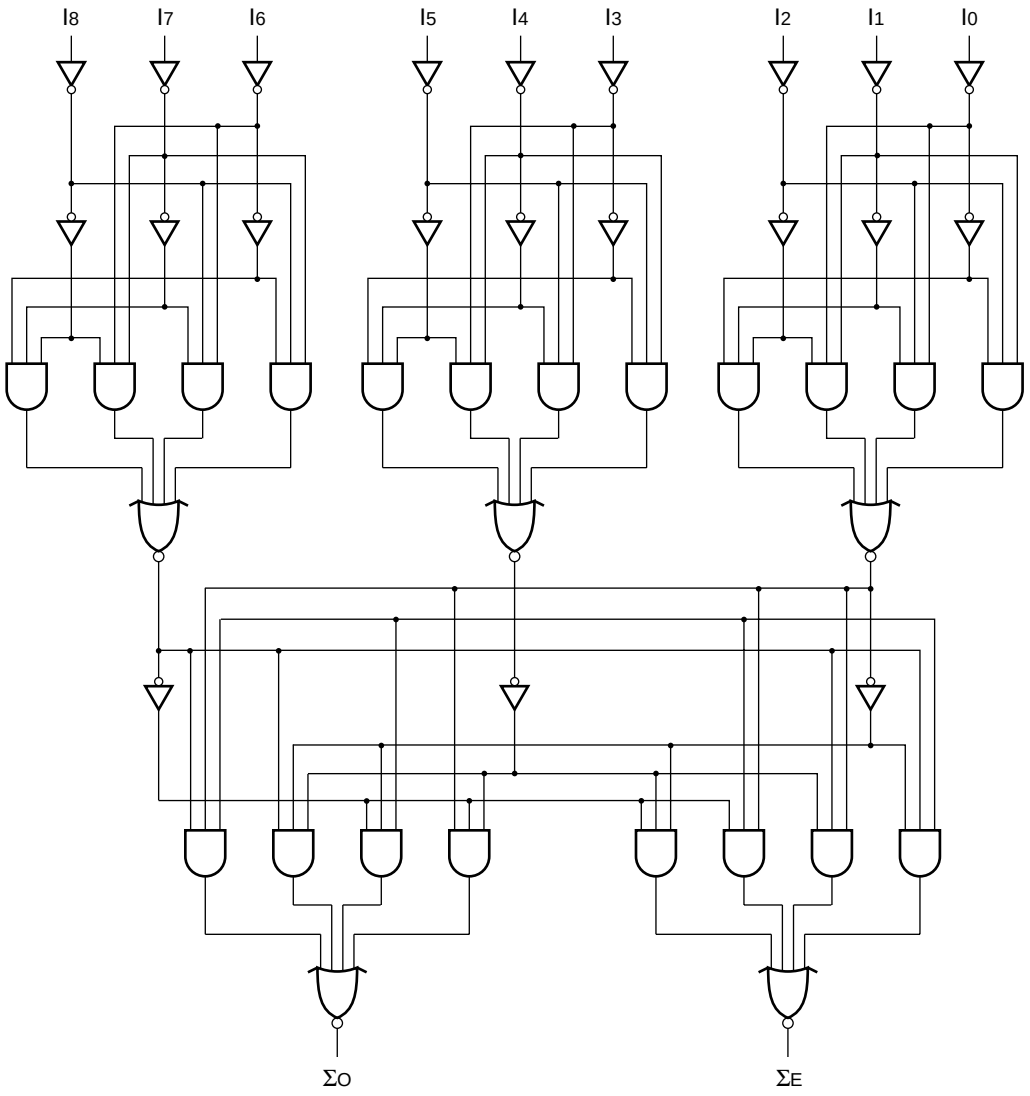
Truth Table

	Outputs	
Number of High Inputs $I_0 – I_8$	**∑ Even**	**∑ Odd**
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

H : High Voltage Level

L : Low Voltage Level

Logic Diagram



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

DC Characteristics (unless otherwise specified)

Item	Symbol	Max	Unit	Condition
Maximum quiescent supply current	I_{CC}	80	µA	V_{IN} = V_{CC} or ground, V_{CC} = 5.5 V, Ta = Worst case
Maximum quiescent supply current	I_{CC}	8.0	µA	V_{IN} = V_{CC} or ground, V_{CC} = 5.5 V, Ta = 25°C
Maximum I_{CC}/input (HD74ACT280)	I_{CCT}	1.5	mA	V_{IN} = V_{CC} – 2.1 V, V_{CC} = 5.5 V, Ta = Worst case

AC Characteristics: HD74AC280

			Ta = +25°C C_L = 50 pF			Ta = –40°C to +85°C C_L = 50 pF		
Item	**Symbol**	**V_{CC} (V)*[1]**	**Min**	**Typ**	**Max**	**Min**	**Max**	**Unit**
Propagation delay	t_{PLH}	3.3	1.0	14.5	17.0	1.0	18.5	ns
		5.0	1.0	11.0	13.0	1.0	14.5	
Propagation delay	t_{PHL}	3.3	1.0	14.5	17.0	1.0	18.5	ns
		5.0	1.0	11.0	13.0	1.0	14.5	

Note: 1. Voltage Range 3.3 is 3.3 V ± 0.3 V
Voltage Range 5.0 is 5.0 V ± 0.5 V

AC Characteristics: HD74ACT280

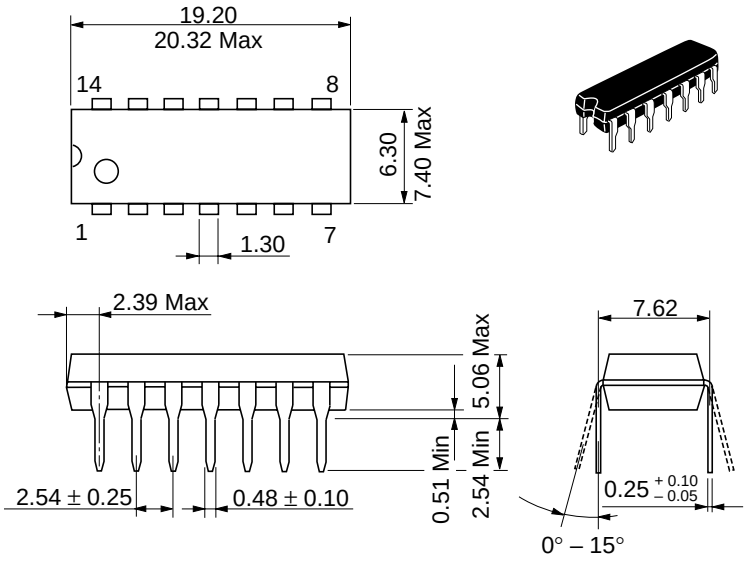
			Ta = +25°C C_L = 50 pF			Ta = –40°C to +85°C C_L = 50 pF		
Item	**Symbol**	**V_{CC} (V)*[1]**	**Min**	**Typ**	**Max**	**Min**	**Max**	**Unit**
Propagation delay	t_{PLH}	5.0	1.0	12.5	15.0	1.0	16.5	ns
Propagation delay	t_{PHL}	5.0	1.0	12.5	15.0	1.0	16.5	ns

Note: 1. Voltage Range 5.0 is 5.0 V ± 0.5 V

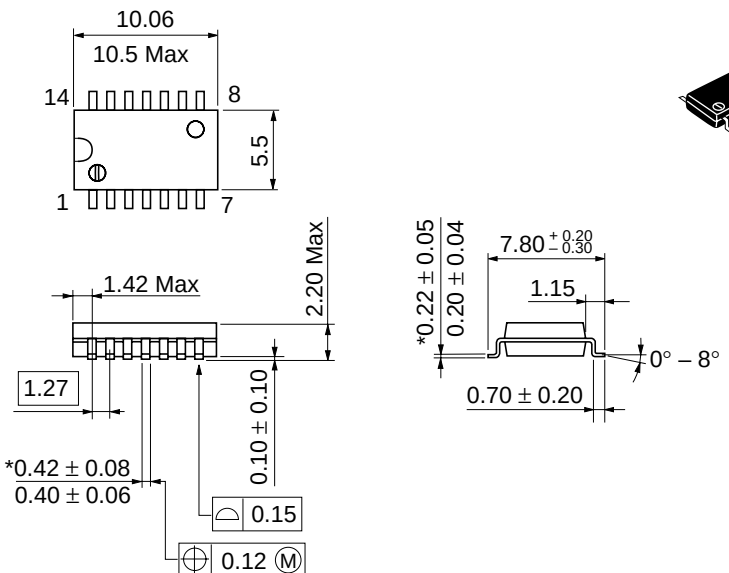
Capacitance

Item	Symbol	Typ	Unit	Condition
Input capacitance	C_{IN}	4.5	pF	V_{CC} = 5.5 V
Power dissipation capacitance	C_{PD}	60.0	pF	V_{CC} = 5.0 V

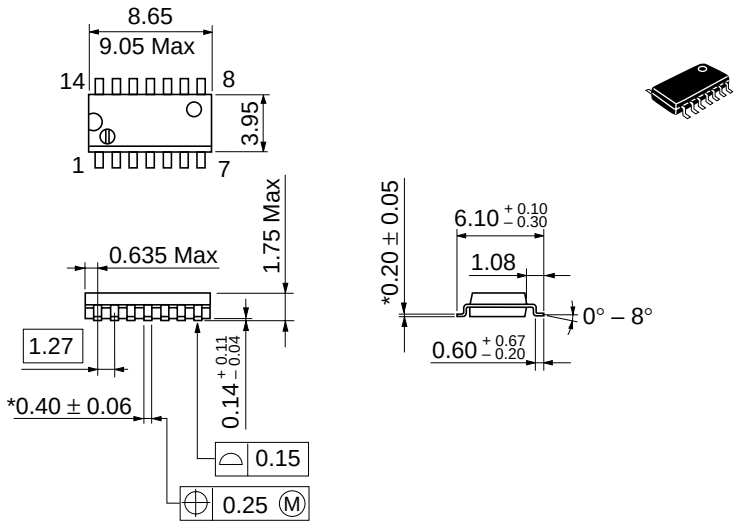
Unit: mm


19.20
20.32 Max
14
8
6.30
7.40 Max
1
1.30
7
2.39 Max
5.06 Max
0.51 Min
2.54 Min
2.54 ± 0.25
0.48 ± 0.10
7.62
0.25 + 0.10 − 0.05
0° – 15°

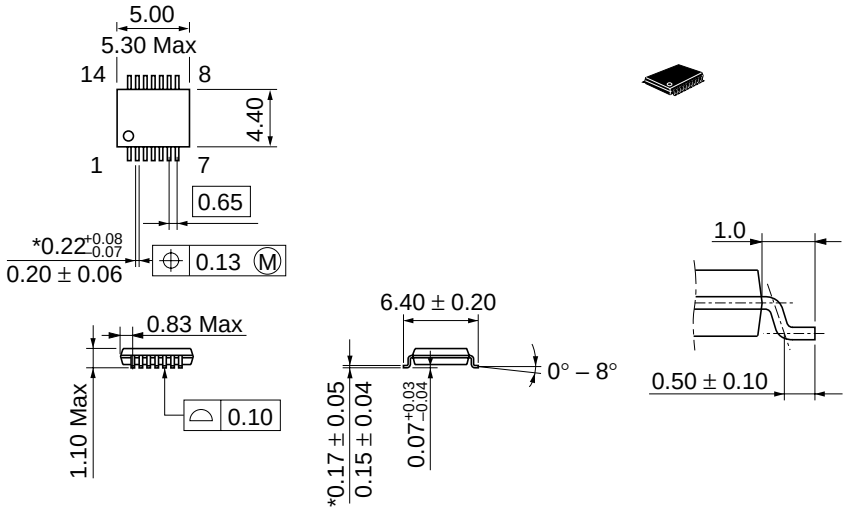
Unit: mm


10.06
10.5 Max
14
8
1
7
5.5
1.42 Max
2.20 Max
1.27
*0.42 ± 0.08
0.40 ± 0.06
0.10 ± 0.10
0.15
0.12 M
*0.22 ± 0.05
0.20 ± 0.04
7.80 +0.20 −0.30
1.15
0° – 8°
0.70 ± 0.20

Unit: mm


8.65
9.05 Max
14
8
3.95
1
7
1.75 Max
0.635 Max
1.27
*0.40 ± 0.06
0.14 +0.11 −0.04
0.15
0.25 M
*0.20 ± 0.05
6.10 +0.10 −0.30
1.08
0° – 8°
0.60 +0.67 −0.20

Unit: mm


5.00
5.30 Max
14
8
4.40
1
7
0.65
*0.22 +0.08 −0.07
0.20 ± 0.06
0.13 M
0.83 Max
1.10 Max
0.10
6.40 ± 0.20
0° – 8°
*0.17 ± 0.05
0.15 ± 0.04
0.07 +0.03 −0.04
1.0
0.50 ± 0.10

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