HD74AC280/HD74ACT280

9-bit Parity Generator/Checker

HITACHI

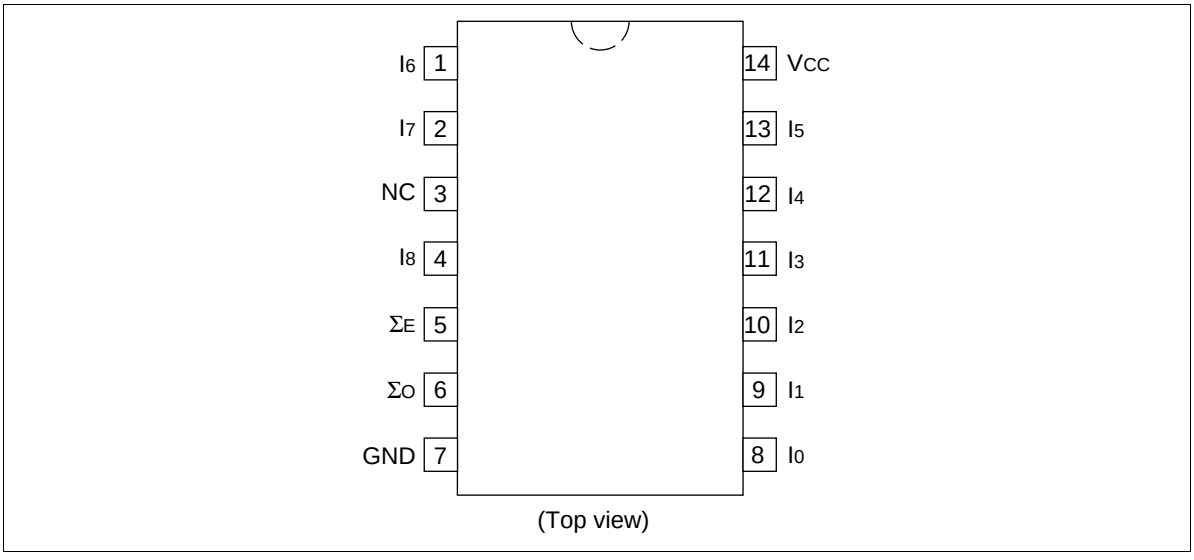
Description

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

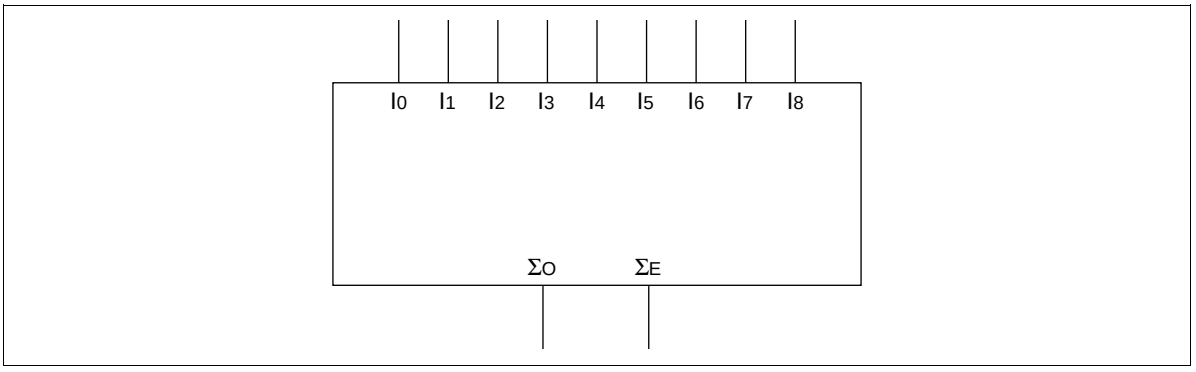
Pin Arrangement



(Top view)

Hitachi semiconductor

Logic Symbol



Pin Names

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

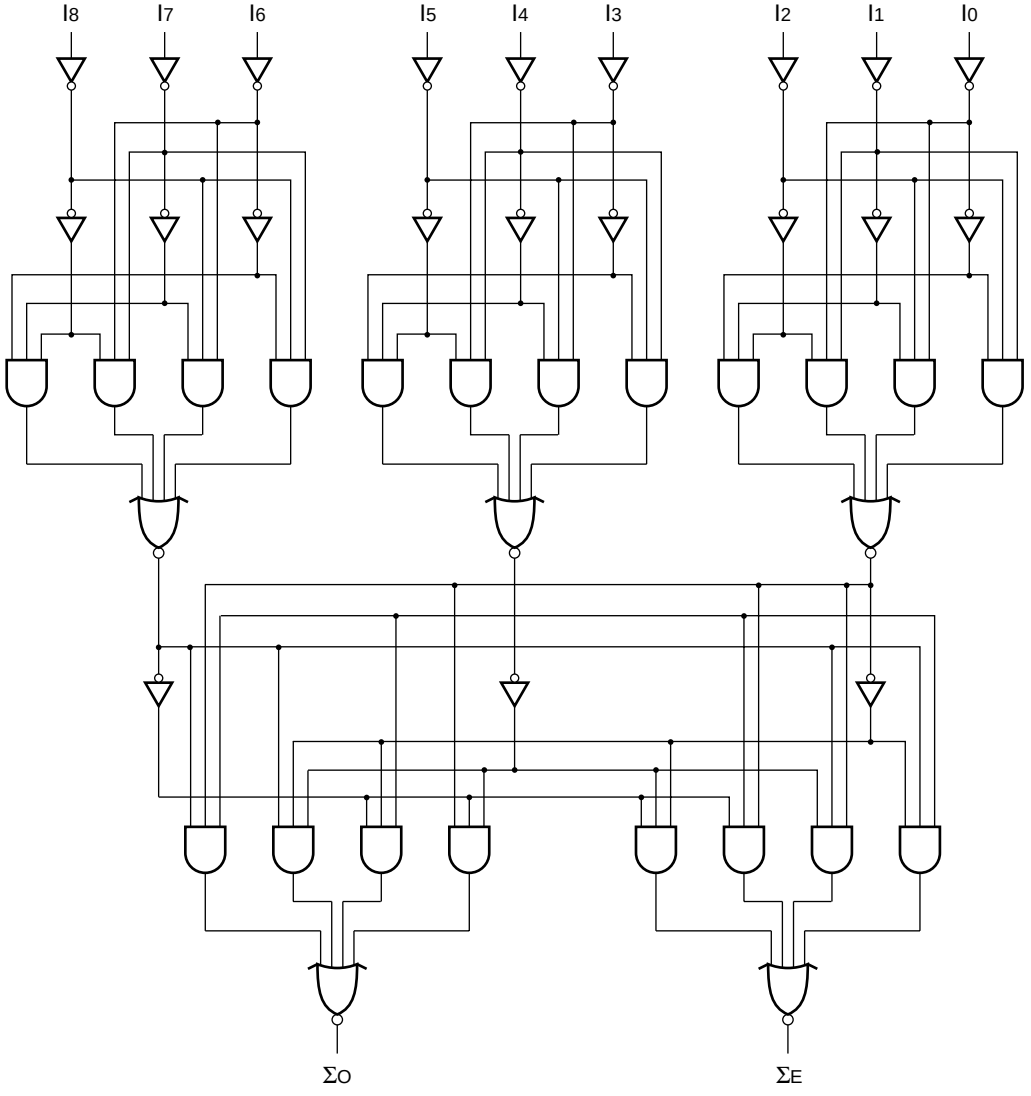
Truth Table

	Outputs	
Number of High Inputs $I_0 - I_8$	**$\sum$ Even**	**$\sum$ 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

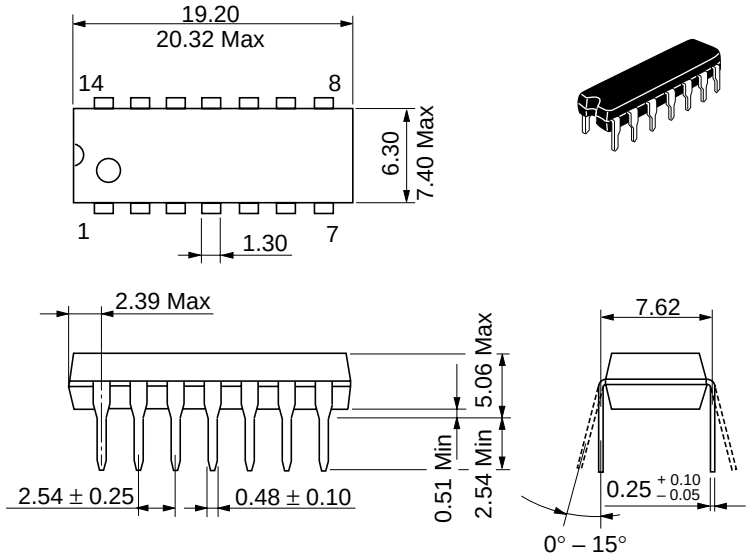
			Ta = +25°C, C_L = 50 pF			Ta = –40°C to +85°C, C_L = 50 pF		
Item	**Symbol**	**V_{CC} (V)*[1]**	**Min**	**Typ**	**Max**	**Min**	**Max**	**Unit**
Propagation delay	t_{PLH}	5.0	1.0	12.5	15.0	1.0	16.5	ns
Propagation delay	t_{PHL}	5.0	1.0	12.5	15.0	1.0	16.5	ns

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

Capacitance

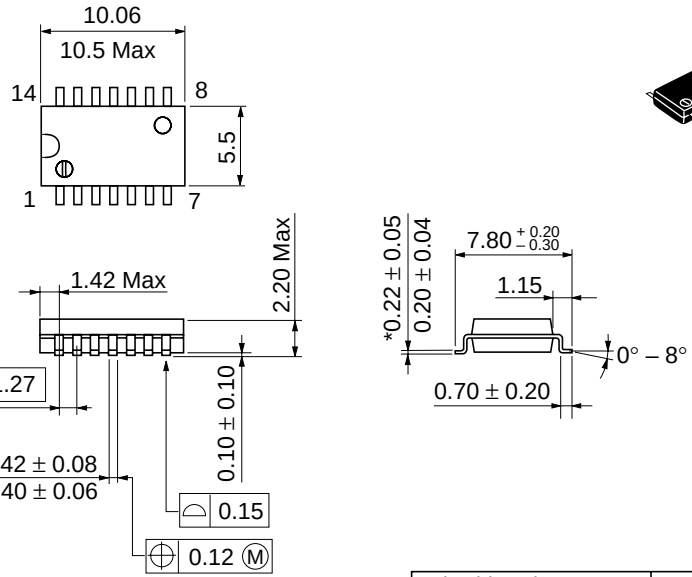
Item	Symbol	Typ	Unit	Condition
Input capacitance	C_{IN}	4.5	pF	V_{CC} = 5.5 V
Power dissipation capacitance	C_{PD}	60.0	pF	V_{CC} = 5.0 V

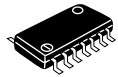
Unit: mm



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

Unit: mm

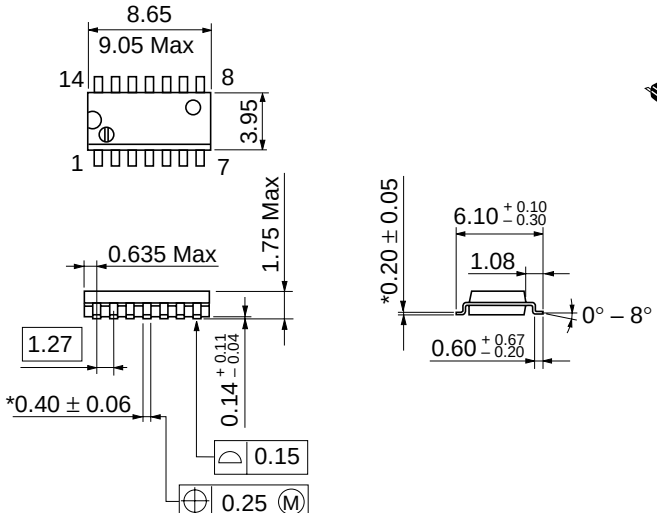




Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

*Dimension including the plating thickness
Base material dimension

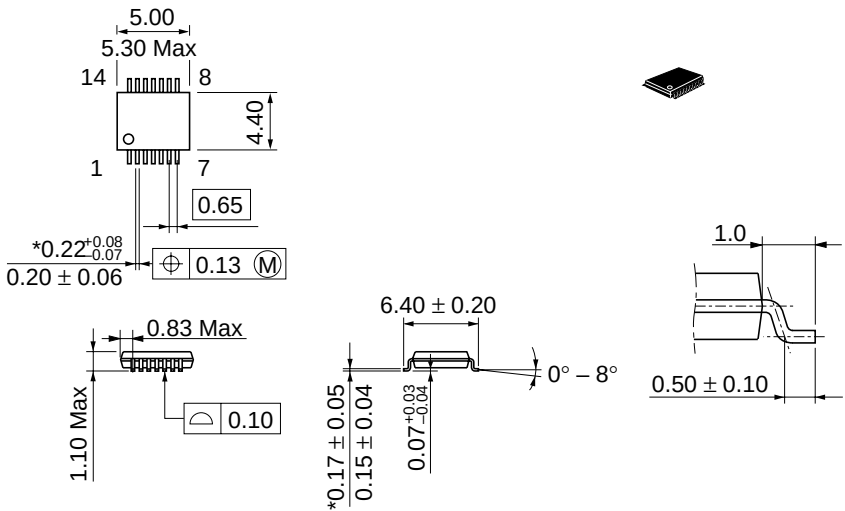
Unit: mm



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

*Pd plating

Unit: mm



Hitachi Code	TTP-14D
JEDEC	—
EIAJ	—
Weight (reference value)	0.05 g

*Dimension including the plating thickness
Base material dimension

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HITACHI

Hitachi, Ltd.
Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL
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Asia (HongKong) : http://www.hitachi.com.hk/eng/bo/grp3/index.htm
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose,CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building. No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX