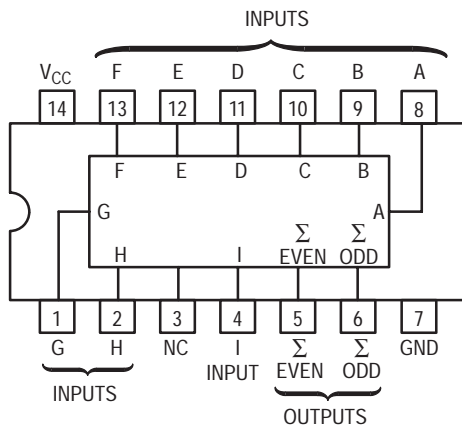# SN74LS280

9-Bit Odd/Even Parity Generators/Checkers

The SN74LS280 is a Universal 9-Bit Parity Generator/Checker. It features odd/even outputs to facilitate either odd or even parity. By cascading, the word length is easily expanded.

The LS280 is designed without the expander input implementation, but the corresponding function is provided by an input at Pin 4 and the absence of any connection at Pin 3. This design permits the LS280 to be substituted for the LS180 which results in improved performance. The LS280 has buffered inputs to lower the drive requirements to one LS unit load.

- Generates Either Odd or Even Parity for Nine Data Lines
- Typical Data-to-Output Delay of only 33 ns
- Cascadable for n-Bits
- Can Be Used To Upgrade Systems Using MSI Parity Circuits
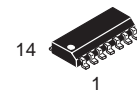- Typical Power Dissipation = 80 mW

ON Semiconductor
Formerly a Division of Motorola
http://onsemi.com

LOW POWER SCHOTTKY
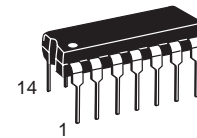
PLASTIC N SUFFIX CASE 646

SOIC D SUFFIX CASE 751A

FUNCTION TABLE

NUMBER OF INPUTS A THRU 1 THAT ARE HIGH	OUTPUTS	
	ΣEVEN	ΣODD
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

H = HIGH Level, L = LOW Level

ORDERING INFORMATION

Device	Package	Shipping
SN74LS280N	14 Pin DIP	2000 Units/Box
SN74LS280D	14 Pin	2500/Tape & Reel

GUARANTEED OPERATING RANGES

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply Voltage	4.75	5.0	5.25	V
T_A	Operating Ambient Temperature Range	0	25	70	°C
I_{OH}	Output Current – High			-0.4	mA
I_{OL}	Output Current – Low			8.0	mA

FUNCTIONAL BLOCK DIAGRAM
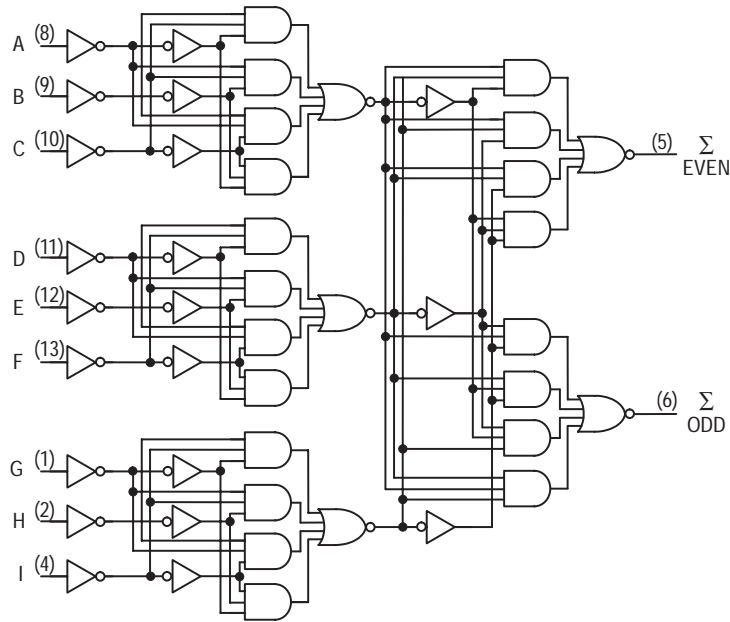
DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Unit	Test Conditions	
V_{IH}	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V_{IL}	Input LOW Voltage			0.8	V	Guaranteed Input LOW Voltage for All Inputs	
V_{IK}	Input Clamp Diode Voltage		−0.65	−1.5	V	V_{CC} = MIN, I_{IN} = −18 mA	
V_{OH}	Output HIGH Voltage	2.7	3.5		V	V_{CC} = MIN, I_{OH} = MAX, V_{IN} = V_{IH} or V_{IL} per Truth Table	
V_{OL}	Output LOW Voltage		0.25	0.4	V	I_{OL} = 4.0 mA	V_{CC} = V_{CC} MIN, V_{IN} = V_{IL} or V_{IH} per Truth Table
			0.35	0.5	V	I_{OL} = 8.0 mA	
I_{IH}	Input HIGH Current			20	μA	V_{CC} = MAX, V_{IN} = 2.7 V	
				0.1	mA	V_{CC} = MAX, V_{IN} = 7.0 V	
I_{IL}	Input LOW Current			−0.4	mA	V_{CC} = MAX, V_{IN} = 0.4 V	
I_{OS}	Short Circuit Current (Note 1)	−20		−100	mA	V_{CC} = MAX	
I_{CC}	Power Supply Current			27	mA	V_{CC} = MAX	

Note 1: Not more than one output should be shorted at a time, nor for more than 1 second.
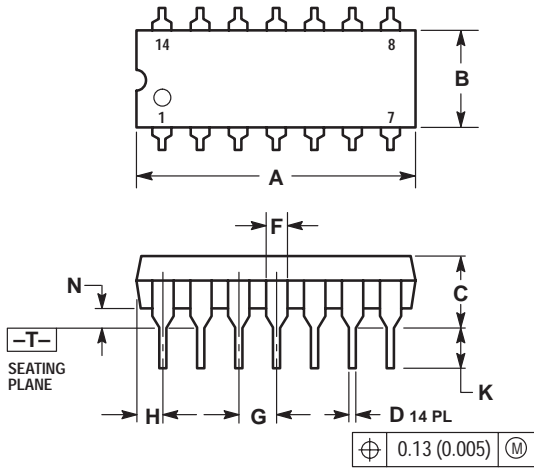
AC CHARACTERISTICS (T_A = 25°C, V_{CC} = 5.0 V)

| Symbol	Parameter	Min	Typ	Max	Unit	Test Conditions
t_{PLH} t_{PHL}	Propagation Delay, Data to Output ΣEVEN		33 29	50 45	ns	C_L = 15 pF
t_{PLH} t_{PHL}	Propagation Delay, Data to Output ΣODD		23 31	35 50	ns	

SN74LS280

PACKAGE DIMENSIONS

N SUFFIX
PLASTIC PACKAGE
CASE 646–06
ISSUE M

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
5. ROUNDED CORNERS OPTIONAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.715	0.770	18.16	18.80
B	0.240	0.260	6.10	6.60
C	0.145	0.185	3.69	4.69
D	0.015	0.021	0.38	0.53
F	0.040	0.070	1.02	1.78
G	0.100 BSC		2.54 BSC	
H	0.052	0.095	1.32	2.41
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.290	0.310	7.37	7.87
M	–––	10°	–––	10°
N	0.015	0.039	0.38	1.01

D SUFFIX
PLASTIC SOIC PACKAGE
CASE 751A–03
ISSUE F
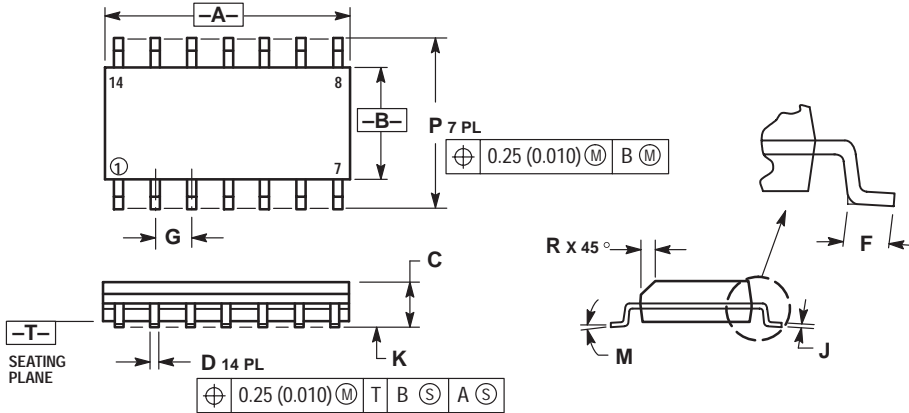
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.55	8.75	0.337	0.344
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0 °	7 °	0 °	7 °
P	5.80	6.20	0.228	0.244
R	0.25	0.50	0.010	0.019

SN74LS280