

- Generates Either Odd or Even Parity for Nine Data Lines
- Cascadable for n-Bits
- Can Be Used to Upgrade Existing Systems Using MSI Parity Circuits
- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs
- Dependable Texas Instruments Quality and Reliability

**description**

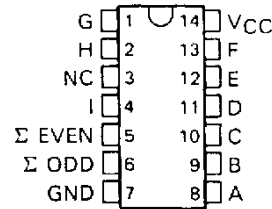
These universal, monolithic, nine-bit parity generators/checkers feature odd and even outputs to facilitate operation of either odd or even parity application. The word-length capability is easily expanded by cascading.

The SN54HC280 is characterized for operation over the full military temperature range of -55°C to 125°C. The SN74HC280 is characterized for operation from -40°C to 85°C.

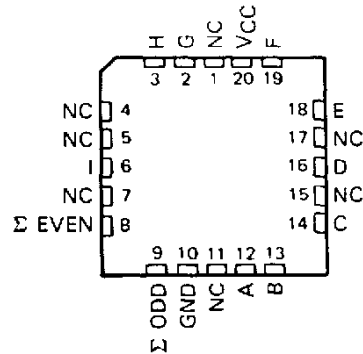
**FUNCTION TABLE**

NUMBER OF INPUTS A THRU I THAT ARE HIGH	OUTPUTS	
	Σ EVEN	Σ ODD
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

SN54HC280 . . . J PACKAGE  
SN74HC280 . . . D OR N PACKAGE  
(TOP VIEW)

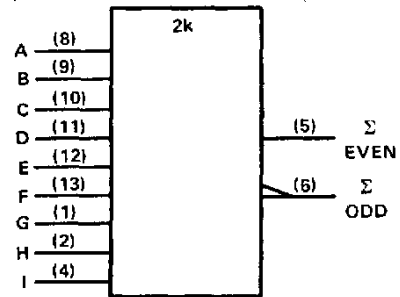


SN54HC280 . . . FK PACKAGE  
(TOP VIEW)



NC—No internal connection

**logic symbol†**



†This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12. Pin numbers shown are for D, J, and N packages.

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

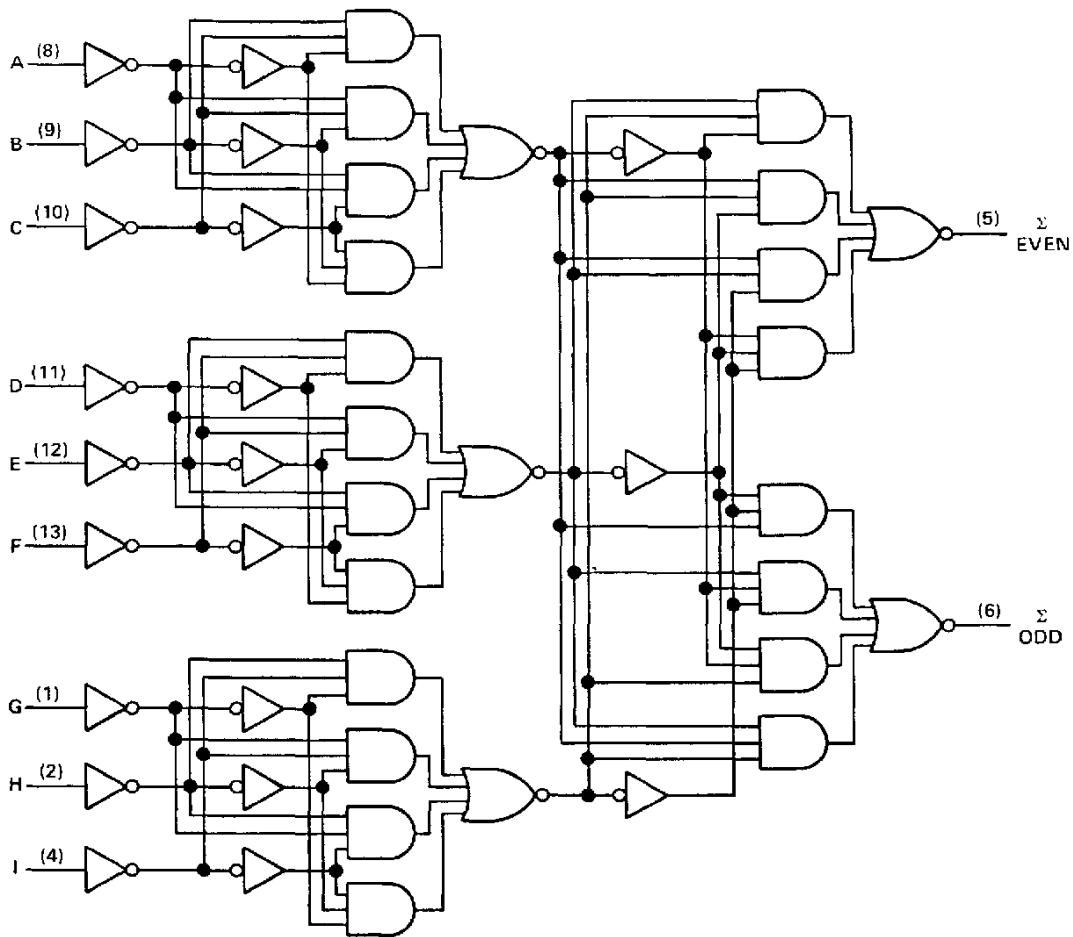


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**SN54HC280, SN74HC280**  
**9-BIT ODD/EVEN PARITY GENERATORS/CHECKERS**

logic diagram (positive logic)



Pin numbers shown are for D, J, and N packages.

**absolute maximum ratings over operating free-air temperature†**

Supply voltage, $V_{CC}$ .....	-0.5 V to 7 V
Input clamp current, $I_{IK}$ ( $V_i < 0$ or $V_i > V_{CC}$ ) .....	$\pm 20$ mA
Output clamp current, $I_{OK}$ ( $V_O < 0$ or $V_O > V_{CC}$ ) .....	$\pm 20$ mA
Continuous output current, $I_O$ ( $V_O = 0$ to $V_{CC}$ ) .....	$\pm 25$ mA
Continuous current through $V_{CC}$ or GND pins .....	$\pm 50$ mA
Lead temperature 1,6 mm (1/16 in) from case for 60 s: FK or J package .....	300°C
Lead temperature 1,6 mm (1/16 in) from case for 10 s: D or N package .....	260°C
Storage temperature range .....	-65°C to 150°C

†Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.



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**SN54HC280, SN74HC280**  
**9-BIT ODD/EVEN PARITY GENERATORS/CHECKERS**

**recommended operating conditions**

		SN54HC280			SN74HC280			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub>	Supply voltage	2	5	6	2	5	6	V
V <sub>IH</sub>	High-level input voltage	V <sub>CC</sub> = 2 V V <sub>CC</sub> = 4.5 V V <sub>CC</sub> = 6 V		1.5 3.15 4.2	1.5 3.15 4.2		V	
V <sub>IL</sub>	Low-level input voltage	V <sub>CC</sub> = 2 V V <sub>CC</sub> = 4.5 V V <sub>CC</sub> = 6 V		0 0 0	0.3 0.9 1.2	0 0 0	0.3 0.9 1.2	V
V <sub>I</sub>	Input voltage			0	V <sub>CC</sub>	0	V <sub>CC</sub>	V
V <sub>O</sub>	Output voltage			0	V <sub>CC</sub>	0	V <sub>CC</sub>	V
t <sub>t</sub>	Input transition (rise and fall) times	V <sub>CC</sub> = 2 V V <sub>CC</sub> = 4.5 V V <sub>CC</sub> = 6 V		0 0 0	1000 500 400	0 0 0	1000 500 400	ns
T <sub>A</sub>	Operating free-air temperature			-55	125	-40	85	°C

**electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)**

PARAMETER	TEST CONDITIONS	V <sub>CC</sub>	T <sub>A</sub> = 25°C		SN54HC280		SN74HC280		UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
V <sub>OH</sub>	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OH</sub> = -20 μA	2 V	1.9	1.998		1.9		1.9	V
		4.5 V	4.4	4.499		4.4		4.4	
		6 V	5.9	5.999		5.9		5.9	
	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OH</sub> = -4 mA	4.5 V	3.98	4.30		3.7		3.84	
	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OH</sub> = -5.2 mA	6 V	5.48	5.80		5.2		5.34	
V <sub>OL</sub>	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OL</sub> = 20 μA	2 V		0.002	0.1		0.1		0.1
		4.5 V		0.001	0.1		0.1		0.1
		6 V		0.001	0.1		0.1		0.1
	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OL</sub> = 4 mA	4.5 V		0.17	0.26		0.4		0.33
	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , I <sub>OL</sub> = 5.2 mA	6 V		0.15	0.26		0.4		0.33
I <sub>I</sub>	V <sub>I</sub> = V <sub>CC</sub> or 0	6 V	±0.1		±100	±1000		±1000	nA
I <sub>CC</sub>	V <sub>I</sub> = V <sub>CC</sub> or 0, I <sub>O</sub> = 0	6 V			8	160		80	μA
C <sub>i</sub>		2 to 6 V	3		10	10		10	pF

**switching characteristics over recommended operating free-air temperature range (unless otherwise noted), C<sub>L</sub> = 50 pF (see Note 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V <sub>CC</sub>	T <sub>A</sub> = 25°C			SN54HC280		SN74HC280		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t <sub>pd</sub>	A thru I	Σ Even	2 V		103	205		305		260	ns
		or	4.5 V		21	41		61		52	
		Σ Odd	6 V		17	35		52		44	
t <sub>t</sub>	Any		2 V		38	75		110		95	ns
			4.5 V		8	15		22		19	
			6 V		6	13		19		16	

C <sub>pd</sub>	Power dissipation capacitance	No load, T <sub>A</sub> = 25°C	60 pF typ
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NOTE 1: Load circuit and voltage waveforms are shown in Section 1.



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