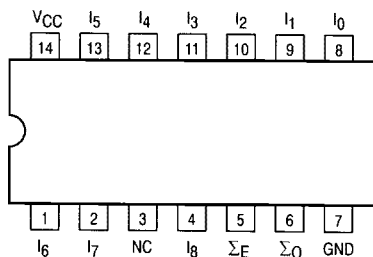




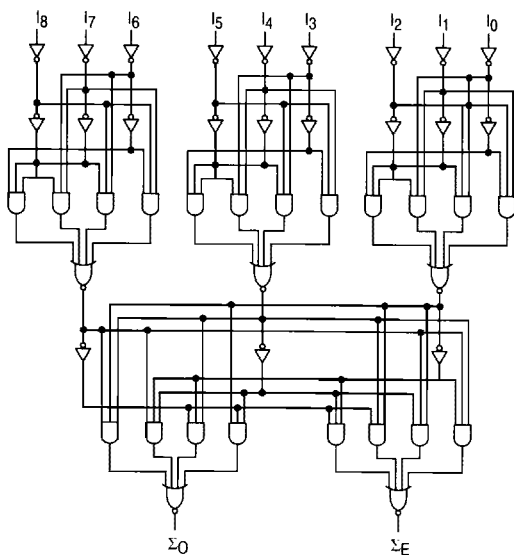
9-BIT PARITY GENERATOR/ CHECKER

The MC54/74F280 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.

CONNECTION DIAGRAM



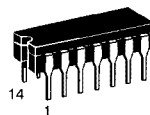
LOGIC DIAGRAM



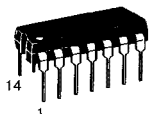
NOTE:
This diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

MC54/74F280

9-BIT PARITY GENERATOR/CHECKER FAST™ SCHOTTKY TTL



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06

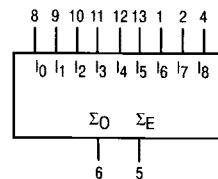


D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

MC54FXXXJ	Ceramic
MC74FXXXN	Plastic
MC74FXXXD	SOIC

LOGIC SYMBOL



V_{CC} = PIN 14
GND = PIN 7

MC54/74F280

FUNCTION TABLE

Number of HIGH Inputs I_0-I_8	Outputs	
	Σ Even	Σ Odd
0, 2, 4, 6, 8	H	L
1, 3, 5, 7, 9	L	H

H = HIGH Voltage Level; L = LOW Voltage Level

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V_{CC}	Supply Voltage	54, 74	4.5	5.0	5.5	V
T_A	Operating Ambient Temperature Range	54	-55	25	125	$^{\circ}\text{C}$
		74	0	25	70	
I_{OH}	Output Current — High	54, 74			-1.0	mA
I_{OL}	Output Current — Low	54, 74			20	mA

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
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			-1.2	V	$V_{CC} = \text{MIN}$, $I_{IN} = -18 \text{ mA}$
V_{OH}	Output HIGH Voltage	54, 74	2.5	3.4	V	$I_{OH} = -1.0 \text{ mA}$, $V_{CC} = 4.5 \text{ V}$
		74	2.7	3.4	V	$I_{OH} = 1.0 \text{ mA}$, $V_{CC} = 4.75 \text{ V}$
V_{OL}	Output Low Voltage		0.35	0.5	V	$I_{OL} = 20 \text{ mA}$, $V_{CC} = \text{MIN}$
I_{IH}	Input HIGH Current			20	μA	$V_{CC} = \text{MAX}$, $V_{IN} = 2.7 \text{ V}$
				100	μA	$V_{CC} = \text{MAX}$, $V_{IN} = 7.0 \text{ V}$
I_{IL}	Input LOW Current			-0.6	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 0.5 \text{ V}$
I_{OS}	Short Circuit Current (Note 2)	-60		-150	mA	$V_{CC} = \text{MAX}$, $V_{OUT} = 0 \text{ V}$
I_{CC}	Power Supply Current		25	38	mA	$V_{CC} = \text{MAX}$

NOTES:

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at a time, nor for more than 1 second.

MC54/74F280

AC CHARACTERISTICS

Symbol	Parameter	54/74F		54F		74F		Unit
		$T_A = +25^{\circ}\text{C}$ $V_{CC} = +5.0\text{ V}$ $C_L = 50\text{ pF}$		$T_A = -55^{\circ}\text{C to } +125^{\circ}\text{C}$ $V_{CC} = 5.0\text{ V} \pm 10\%$ $C_L = 50\text{ pF}$		$T_A = 0^{\circ}\text{C to } +70^{\circ}\text{C}$ $V_{CC} = 5.0\text{ V} \pm 10\%$ $C_L = 50\text{ pF}$		
		Min	Max	Min	Max	Min	Max	
t _{PLH}	Propagation Delay	4.5	15	4.5	20	4.5	16	ns
t _{PHL}	I _n to Σ _E	4.5	16	4.5	21	4.5	17	
t _{PLH}	Propagation Delay	4.5	15	4.5	20	4.5	16	ns
t _{PHL}	I _n to Σ _O	4.5	16	4.5	21	4.5	17	