勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-54151736
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MOTOROLA

MC54/74F280

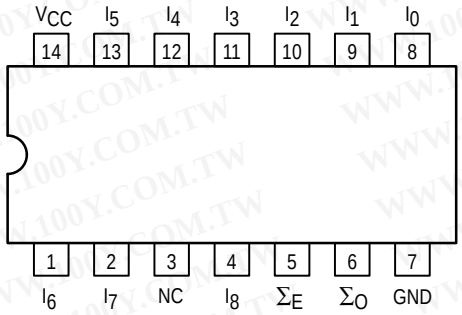
9-BIT PARITY GENERATOR/ CHECKER

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.

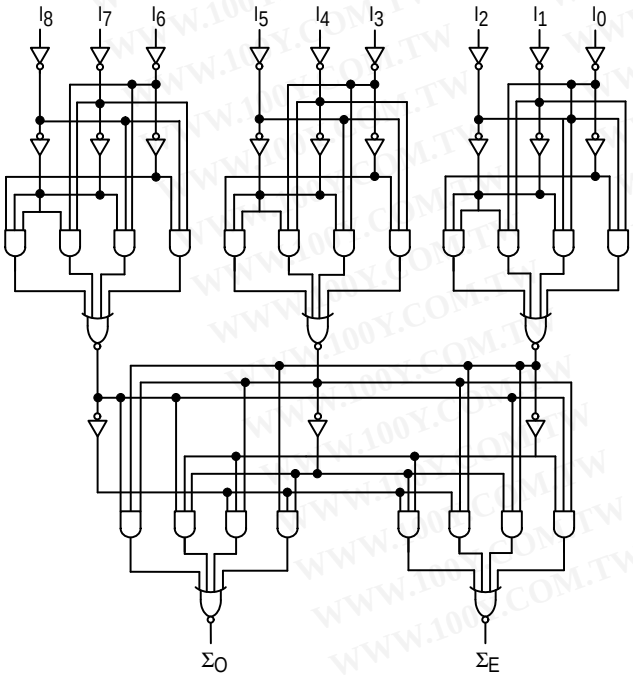
9-BIT PARITY GENERATOR/CHECKER

FAST™ SCHOTTKY TTL

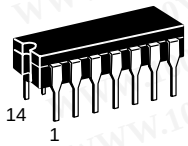
CONNECTION DIAGRAM



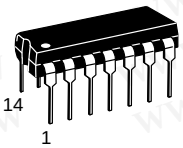
LOGIC DIAGRAM



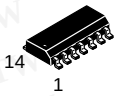
NOTE:
This diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06

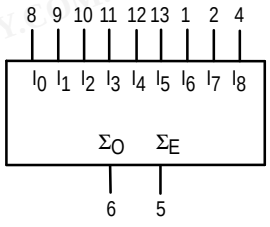


D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

MC54FXXXJ	Ceramic
MC74FXXXN	Plastic
MC74FXXXD	SOIC

LOGIC SYMBOL



VCC = PIN 14
GND = PIN 7

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

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

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AC CHARACTERISTICS

Symbol	Parameter	54/74F T_A = +25°C V_{CC} = +5.0 V C_L = 50 pF		54F T_A = –55°C to +125°C V_{CC} = 5.0 V ±10% C_L = 50 pF		74F T_A = 0°C to +70°C V_{CC} = 5.0 V ±10% C_L = 50 pF		Unit
		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	