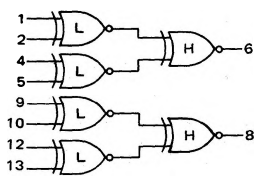
MC4010L, P *



V_{CC} = PIN 14
GND = PIN 7

Positive Logic:
6 = 1 ⊙ 2 ⊙ 4 ⊙ 5
where $X \odot Y = \bar{X} \cdot \bar{Y} + X \cdot Y$

Input Loading Factor = 2
Output Loading Factor = 10

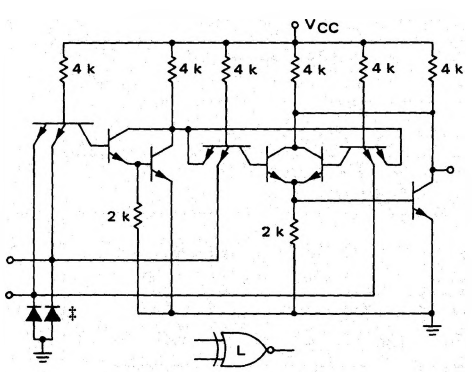
Total Power Dissipation = 125 mW typ/pkg
Propagation Delay Time = 9.5 to 22 ns typ

ADVANCE INFORMATION/NEW PRODUCT

Three Exclusive NOR gates are connected together to form each of the two 4-bit parity trees in the package. An even number of logic "1" states on the inputs will result in a logic "1" output state. An odd parity checker can be made by connecting an inverter to the output of the device.

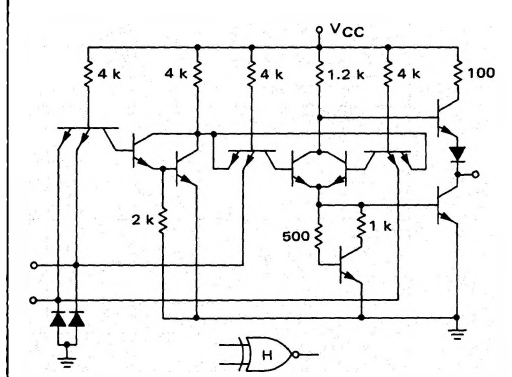
This function is constructed using low and high-level Exclusive NOR gates connected as shown in the logic diagram to maximize output drive capability and minimize power dissipation.

LOW-LEVEL GATE



‡Applies only to input gate.

HIGH-LEVEL GATE



*L suffix = TO-116 ceramic dual in-line package (Case 632).
P suffix = TO-116 plastic dual in-line package (Case 605).

INPUT and OUTPUT LOADING FACTORS
with respect to MTTL and MDTL families

FAMILY	MC4000 INPUT LOADING FACTOR	MC4000 OUTPUT LOADING FACTOR
MC4000	1.0	10
MC400	1.0	10
MC2000	0.67	6
MC3000	0.7	8
MC7400	1.0	10
MC830	1.15**	12

Note: Differences in MC4000 series loading factors result from differences in specifications for each family.

**Applies only when input is being driven by MDTL gate with 2.0 k ohm pullup resistor. Logic "1" state drive limitations of gates with 6.0 k ohm pullup resistors reduce drive capability to fan-out of 3.

DC ELECTRICAL CHARACTERISTICS

(T_A = 0 to 75°C)

Characteristic	Symbol	Value	Conditions
Input			
Forward Current	I_{F1}	-3.2 mAdc max	V_{in} = 0.4 Vdc, V_{CC} = 5.25 Vdc
	I_{F2}	-2.8 mAdc max	V_{in} = 0.4 Vdc, V_{CC} = 4.75 Vdc
Leakage Current	I_R	80 μAdc max	V_{in} = 2.5 Vdc, V_{CC} = 5.25 Vdc
Breakdown Voltage	BV_{in}	5.5 Vdc max	I_{in} = 1.0 mAdc, V_{CC} = 5.25 Vdc, T_A = 25°C
Clamp Voltage	V_D	-1.5 Vdc max	I_D = -10 mAdc, V_{CC} = 4.75 Vdc, T_A = 25°C
Threshold Voltage	V_{th} "1"	2.0 Vdc 1.8 Vdc	T_A = 0°C T_A = +25°C, or T_A = +75°C
	V_{th} "0"	1.1 Vdc 0.9 Vdc	T_A = 0°C, or T_A = +25°C T_A = +75°C
Output			
Output Voltage	V_{OL}	0.4 Vdc max 0.4 Vdc max	I_{OL} = 16 mAdc, V_{CC} = 4.75 Vdc† I_{OL} = 17.6 mAdc, V_{CC} = 5.25 Vdc†
	V_{OH}	2.5 Vdc min	I_{OH} = -1.6 mAdc, V_{CC} = 4.75 Vdc†
Short-Circuit Current	I_{SC}	-20 to -65 mAdc	V_{CC} = 5.0 Vdc, output grounded†

†These tests are performed according to the logic equations with a true input equal to V_{th} "1" and a false input equal to V_{th} "0".