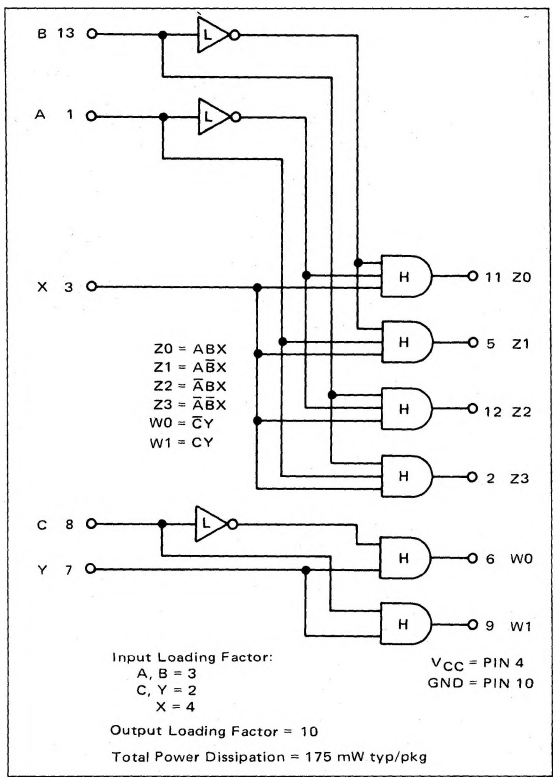
MC4002F, L, P*



ADVANCE INFORMATION/NEW PRODUCT

This device consists of two data distributors constructed from high-level AND gates and low-level inverters. One distributes information present at the input line to one of four output lines; the other distributes information present at the input to one of two output lines. The routing path is selected by the logic signals at the control lines A, B or C.

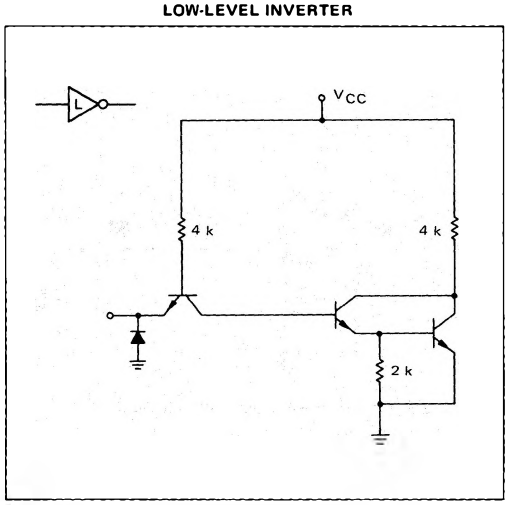
Data distributors are useful in applications where digital data is to be routed from a single register or location to one of several registers or locations for processing.

TYPICAL PROPAGATION DELAY TIMES (ns)
$T_A = 25^oC$

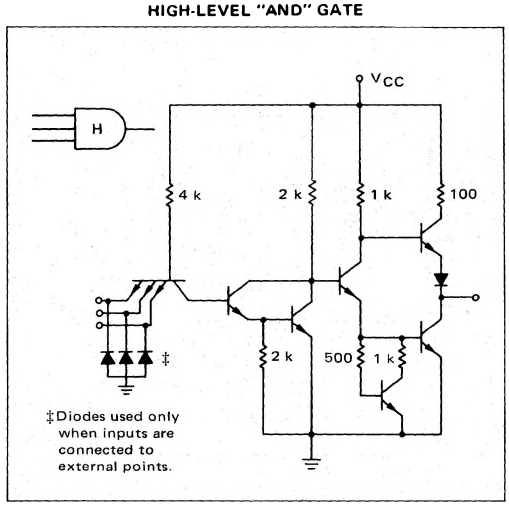
INPUT	Z0	Z1	Z2	Z3
A	14.5	10.5	14.5	10.5
B	14.5	14.5	10.5	10.5
X	10.5	10.5	10.5	10.5

INPUT	W0	W1
C	14.5	10.5
Y	10.5	10.5

LOW-LEVEL INVERTER



HIGH-LEVEL "AND" GATE



‡Diodes used only when inputs are connected to external points.

*F suffix = TO-86 ceramic flat package (Case 607).
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 — A, B	I_{F1}	-4.8 mAdc max	V_{in} = 0.4 Vdc, V_{CC} = 5.25 Vdc
C, Y		-3.2 mAdc max	
X		-6.4 mAdc max	
A, B	I_{F2}	-4.2 mAdc max	V_{in} = 0.4 Vdc, V_{CC} = 4.75 Vdc
C, Y		-2.8 mAdc max	
X		-5.6 mAdc max	
Leakage Current — A, B	I_R	120 μAdc max	V_{in} = 2.5 Vdc, V_{CC} = 5.25 Vdc
C, Y		80 μAdc max	
X		160 μAdc max	
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	T_A = 0°C
		1.8 Vdc	T_A = +25°C, or T_A = +75°C
	V_{th} "0"	1.1 Vdc	T_A = 0°C, or T_A = +25°C
		0.9 Vdc	T_A = +75°C
Output			
Output Voltage	V_{OL}	0.4 Vdc max	I_{OL} = 16 mAdc, V_{CC} = 4.75 Vdc †
		0.4 Vdc max	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".