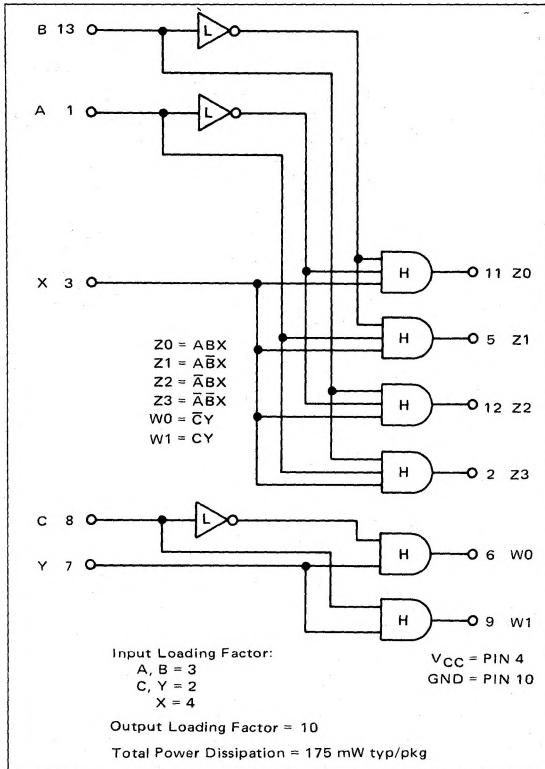


DUAL DATA DISTRIBUTOR

MC4300/MC4000 series

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.

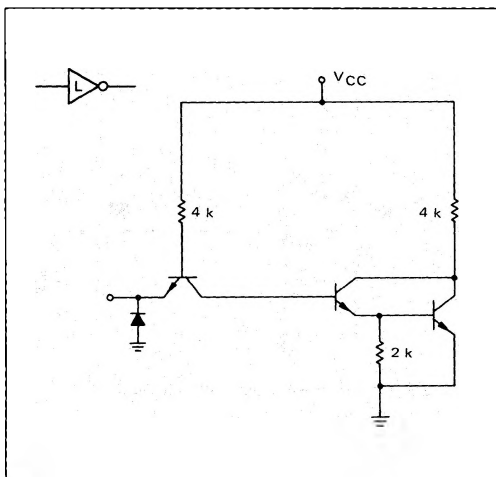
Data distributors are useful in applications where digital data is to be routed from a single register or location to one of several registers or locations for processing.

TYPICAL PROPAGATION DELAY TIMES (ns)
 $T_A = 25^\circ\text{C}$

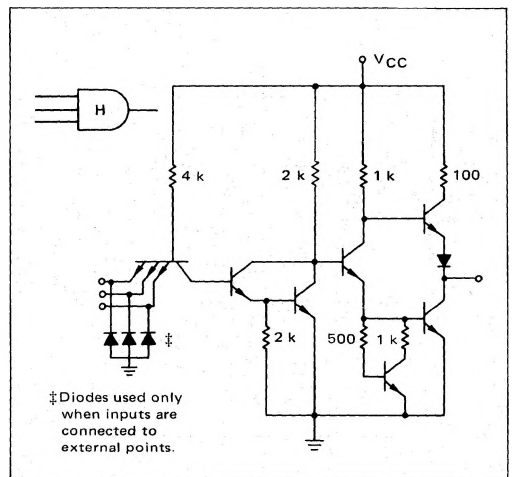
INPUT	Z0	Z1	Z2	Z3
A	14.5	10.5	14.5	10.5
B	14.5	14.5	10.5	10.5
X	10.5	10.5	10.5	10.5

INPUT	W0	W1
C	14.5	10.5
Y	10.5	10.5

LOW-LEVEL INVERTER



HIGH-LEVEL "AND" GATE



*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).

MC4002F, L, P (continued)

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 mA _{dc} max	V _{in} = 0.4 V _{dc} , V _{CC} = 5.25 V _{dc}
C, Y		-3.2 mA _{dc} max	
X		-6.4 mA _{dc} max	
A, B	I _{F2}	-4.2 mA _{dc} max	V _{in} = 0.4 V _{dc} , V _{CC} = 4.75 V _{dc}
C, Y		-2.8 mA _{dc} max	
X		-5.6 mA _{dc} max	
Leakage Current – A, B	I _R	120 μA _{dc} max	V _{in} = 2.5 V _{dc} , V _{CC} = 5.25 V _{dc}
C, Y		80 μA _{dc} max	
X		160 μA _{dc} max	
Breakdown Voltage	BV _{in}	5.5 V _{dc} max	I _{in} = 1.0 mA _{dc} , V _{CC} = 5.25 V _{dc} , T _A = 25°C
Clamp Voltage	V _D	-1.5 V _{dc} max	I _D = -10 mA _{dc} , V _{CC} = 4.75 V _{dc} , T _A = 25°C
Threshold Voltage	V _{th} "1"	2.0 V _{dc}	T _A = 0°C
		1.8 V _{dc}	T _A = +25°C, or T _A = +75°C
	V _{th} "0"	1.1 V _{dc}	T _A = 0°C, or T _A = +25°C
		0.9 V _{dc}	T _A = +75°C
Output			
Output Voltage	V _{OL}	0.4 V _{dc} max	I _{OL} = 16 mA _{dc} , V _{CC} = 4.75 V _{dc} †
		0.4 V _{dc} max	I _{OL} = 17.6 mA _{dc} , V _{CC} = 5.25 V _{dc} †
	V _{OH}	2.5 V _{dc} min	I _{OH} = -1.6 mA _{dc} , V _{CC} = 4.75 V _{dc} †
Short-Circuit Current	I _{SC}	-20 to -65 mA _{dc}	V _{CC} = 5.0 V _{dc} , 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".