

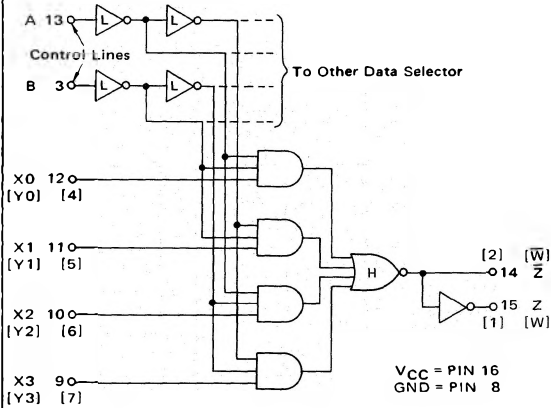
DUAL 4-CHANNEL DATA SELECTOR

MC9300/MC8300 series

MC9309L*
MC8309L,P*

1/2 OF DEVICE SHOWN

(Numbers and symbols in parenthesis are for other half of device)



$$Z = \bar{A}\bar{B}X0 + \bar{A}BX1 + A\bar{B}X2 + ABX3$$

$$\bar{Z} = \bar{A}\bar{B}X0 + \bar{A}BX1 + A\bar{B}X2 + ABX3$$

$$W = \bar{A}\bar{B}Y0 + \bar{A}BY1 + A\bar{B}Y2 + ABY3$$

$$\bar{W} = \bar{A}\bar{B}Y0 + \bar{A}BY1 + A\bar{B}Y2 + ABY3$$

Input Loading Factor = 1

Output Loading Factor: Z, W = 10
Z-bar, W-bar = 9

Total Power Dissipation = 150 mW typ/pkg

This device consists of two four-channel data selectors with common control lines, constructed from high-level AND-OR-INVERT gates with active pullup outputs, and low-level inverters on the control inputs. By selecting one of four logic combinations, information on one of the four data inputs will be routed to the complementary outputs.

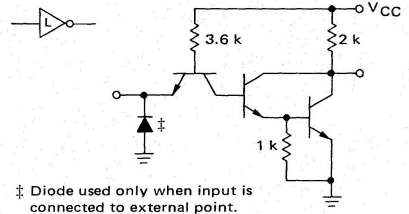
Data selectors are useful in applications where digital data is to be routed from one of several registers or locations to another register or location for processing.

The MC9309/8309 may be cascaded to multiple levels so that any number of lines can be multiplexed onto a single output buss.

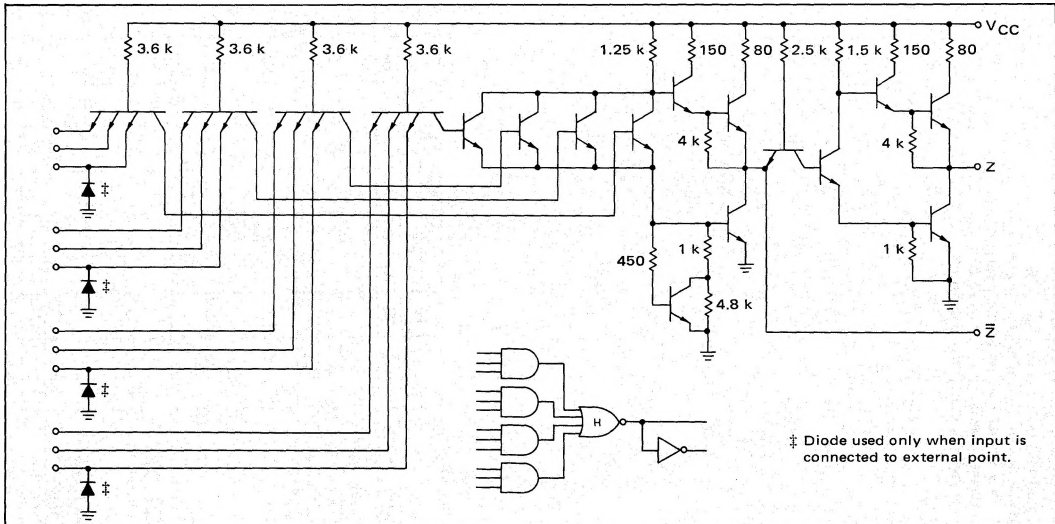
TYPICAL PROPAGATION DELAY TIMES (ns) T_A = 25°C

INPUT	Z	Z-bar	CONDITIONS
A	24	16	X0 = X2 = X3 = logic "0", X1 = logic "1". A and B are defined by the logic equations.
X1	17	9	

LOW-LEVEL INVERTER



HIGH-LEVEL "AND-OR-INVERT" GATE (Complementary Outputs)



*L suffix = 16-pin dual in-line ceramic package (Case 620).
P suffix = 16-pin dual in-line plastic package (Case 612).

[illegible]

MC9309, MC8309 (continued)

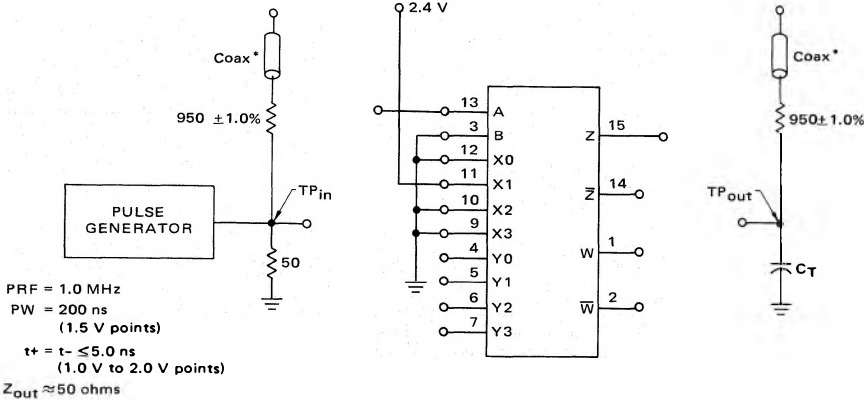
INPUT and OUTPUT LOADING FACTORS
with respect to MTTL and MDTL families

FAMILY	MC9309 INPUT LOADING FACTOR	MC9309 OUTPUT LOADING FACTOR	
		Z	$\bar{Z}$
MC9300	1.0	10	9.0
MC500	1.06	10.6	9.5
MC2100	0.7	7.0	6.3
MC3100	0.7	7.0	6.3
MC4300	1.0	10	9.0
MC5400	1.0	7.75	7.0
MC930*	Fan-Out = 2 (6.0 k ohm pullup) Fan-Out = 8 (2.0 k ohm pullup)	9.4	8.4

FAMILY	MC8309 INPUT LOADING FACTOR	MC8309 OUTPUT LOADING FACTOR	
		Z	$\bar{Z}$
MC8300	1.0	10	9.0
MC400	1.0	9.0	8.1
MC2000	0.6	6.0	5.4
MC3000	0.7	7.4	6.6
MC4000	1.0	10	9.0
MC7400	1.0	8.75	7.8
MC830*	Fan-Out = 2 (6.0 k ohm pullup) Fan-Out = 8 (2.0 k ohm pullup)	10.8	9.7

* Due to logic "1" state drive limitations of the MDTL family.

SWITCHING TIME TEST CIRCUIT AND VOLTAGE WAVEFORMS



** The coax delays from input to scope and output to scope must be matched. The scope must be terminated in 50-ohm impedance. The 950-ohm resistor and the scope termination impedance constitute a 20:1 attenuator probe. Coax shall be CT-070-50 or equivalent.

$C_T = 15$ pF = total parasitic capacitance, which includes probe and wiring capacitances.

