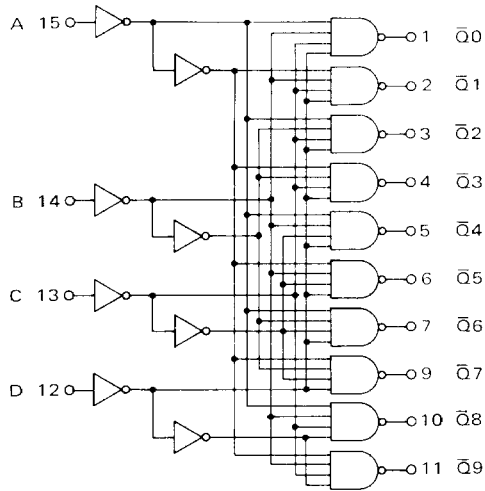




MC5445 • MC7445
MC9345 • MC8345
MC54145 • MC74145
MC93145 • MC83145

Add Suffix L for 16-pin ceramic dual in-line package (Case 620).

Suffix P for 16-pin plastic dual in-line package (Case 648) MC7445/74145, MC8345/83145.



V_{CC} = Pin 16
GND = Pin 8

These devices are intended for use as drivers for indicators or relays, rather than drivers for MTTL logic gates, as is the case with the MC5442/7442, which is functionally identical. The output transistors of these devices are capable of sinking 80 mA, and have breakdown voltages of 30 V (MC5445/7445, MC9345/8345) and 15 V (MC54145/74145, MC93145/83145). The outputs are suitable for open-collector logic applications, and are compatible for interfacing with most MOS integrated circuits. Since full decoding is included, all outputs remain off for non-BCD inputs.

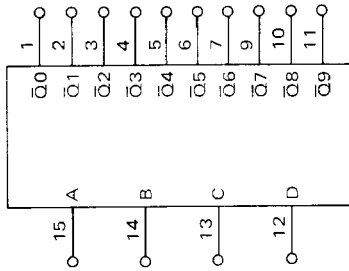
Total Power Dissipation = 215 mW typ/pkg
Propagation Delay Time = 50 ns max

2
004472
4472
ORIG
NOT

INPUTS				OUTPUTS									
D	C	B	A	Q ₉	Q ₈	Q ₇	Q ₆	Q ₅	Q ₄	Q ₃	Q ₂	Q ₁	Q ₀
0	0	0	0	1	1	1	1	1	1	1	1	1	0
0	0	0	1	1	1	1	1	1	1	1	1	0	1
0	0	1	0	1	1	1	1	1	1	1	0	1	1
0	0	1	1	1	1	1	1	1	1	0	1	1	1
0	1	0	0	1	1	1	1	1	0	1	1	1	1
0	1	0	1	1	1	1	1	0	1	1	1	1	1
0	1	1	0	1	1	1	1	1	1	1	1	1	1
0	1	1	1	1	1	0	1	1	1	1	1	1	1
1	0	0	0	1	0	1	1	1	1	1	1	1	1
1	0	0	1	0	1	1	1	1	1	1	1	1	1
1	0	1	0	1	1	1	1	1	1	1	1	1	1
1	0	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	0	1	1	1	1	1	1	1	1	1	1
1	1	0	1	1	1	1	1	1	1	1	1	1	1
1	1	1	0	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1

ELECTRICAL CHARACTERISTICS

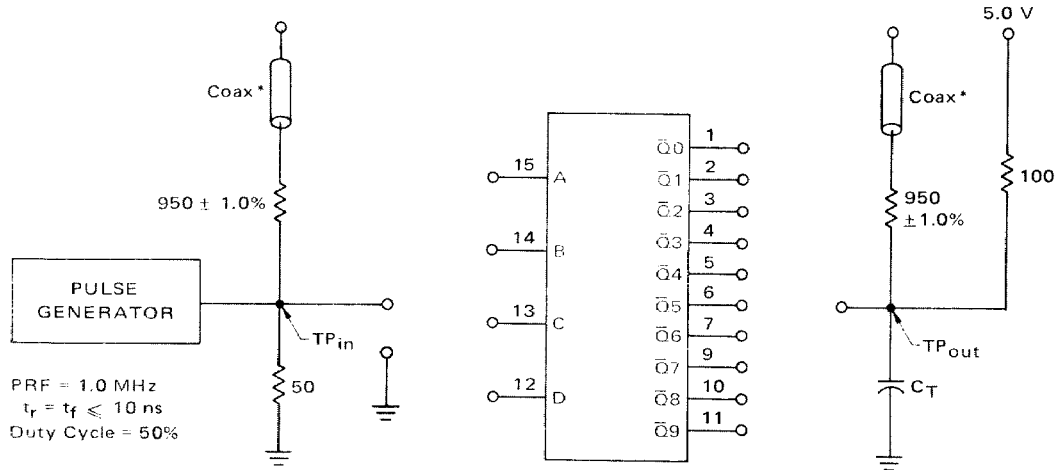
Test procedures are shown for only one input and one output. Test other inputs and outputs in the same manner according to the truth table. Test all input-output combinations according to the truth table.



Characteristic	Symbol	Pin Under Test	Test Limits			TEST CURRENT/VOLTAGE VALUES (All Temperatures)																			
			Min	Max	Unit	mA		Volts																	
Input	Forward Current	I _L	12	-1.6	mAdc	I _{OL1}	80	I _{OL2}	50	I _{CEX}	0.75	V _{IL}	0.4	V _{IH}	2.4	V _{IHH}	5.5	V _{IHT}	2.0	V _{CC}	5.0	V _{CCCL}	4.5	V _{CCCH}	5.5
	Leakage Current	I _{LH}	12	40	μAdc	I _{OL1}	70	I _{OL2}	80	I _{CEX}	0.75	V _{IL}	0.4	V _{IH}	2.4	V _{IHH}	5.5	V _{IHT}	2.0	V _{CC}	5.0	V _{CCCL}	4.75	V _{CCCH}	5.75
		I _{LHH}	12	1.0	mAdc	I _{OL1}		I _{OL2}		I _{CEX}		V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}		V _{CCCL}		V _{CCCH}	
Output	Output Voltage	V _{OL}	1	0.9	Vdc	I _{OL1}	1	I _{OL2}	1	I _{CEX}	1	V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}	16	V _{CCCL}	16	V _{CCCH}	16
	MC5445/7445	V _{OH}	1	0.4	Vdc	I _{OL1}		I _{OL2}		I _{CEX}		V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}	16	V _{CCCL}	16	V _{CCCH}	16
	MC84145/74145	V _{CEX}	1	30	Vdc	I _{OL1}		I _{OL2}		I _{CEX}		V _{IL}		V _{IH}	12	V _{IHH}	12	V _{IHT}	12	V _{CC}	16	V _{CCCL}	16	V _{CCCH}	16
Power Requirements (Total Device)	Power Supply Drain	I _{CC}	16	67	mAdc	I _{OL1}		I _{OL2}		I _{CEX}		V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}		V _{CCCL}		V _{CCCH}	
	Turn-On Delay	t _{PHL}	15,1	50	ns	I _{OL1}	15	I _{OL2}	1	I _{CEX}	1	V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}	16	V _{CCCL}		V _{CCCH}	
Turn-Off Delay	t _{PLH}	15,1	50	ns	I _{OL1}	15	I _{OL2}	1	I _{CEX}	1	V _{IL}		V _{IH}		V _{IHH}		V _{IHT}		V _{CC}	16	V _{CCCL}		V _{CCCH}		

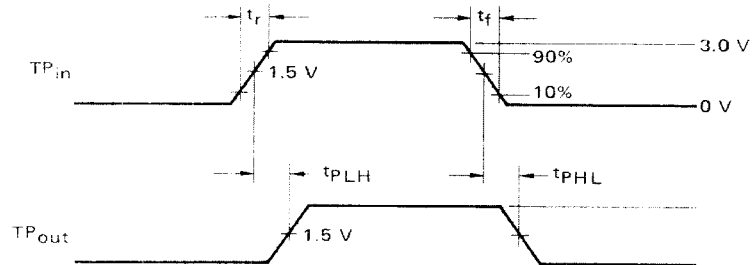
1. Tested only at 25°C.

SWITCHING TIME TEST CIRCUIT AND VOLTAGE WAVEFORMS



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

* 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.



TYPICAL APPLICATIONS

Two MC5445/7445 (MC9345/8345) or MC54145/74145 (MC93145/83145) decoder/drivers (depending on drive requirements) may be used to perform 4-line to 16-line decoding. Data inputs A, B, and C are applied to both decoder/drivers, while input D is applied to one decoder and D to the other. (See Figure 1.)

In addition to the obvious decoder applications, these circuits can also be used for data distribution (Figure 2). Inputs A, B, and C of the decoder/driver are used as control inputs, while the D input serves as the data input. In a typical compound data routing application, origin data is selected by the control inputs of the MC54151/74151 8-channel data selector. The data is then routed to the proper destination by means of the MC5445/7445 (MC9345/8345) decoder/driver control lines.

FIGURE 1 - BINARY-TO-DECIMAL DECODING USING
 MC5445/7445 OR MC54145/74145
 MC9345/8345 OR MC93145/83145

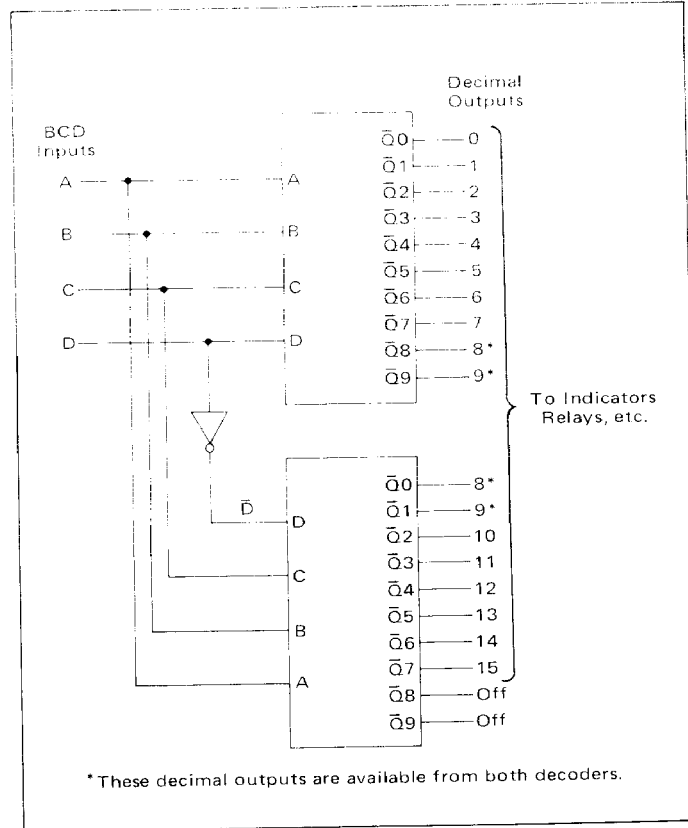
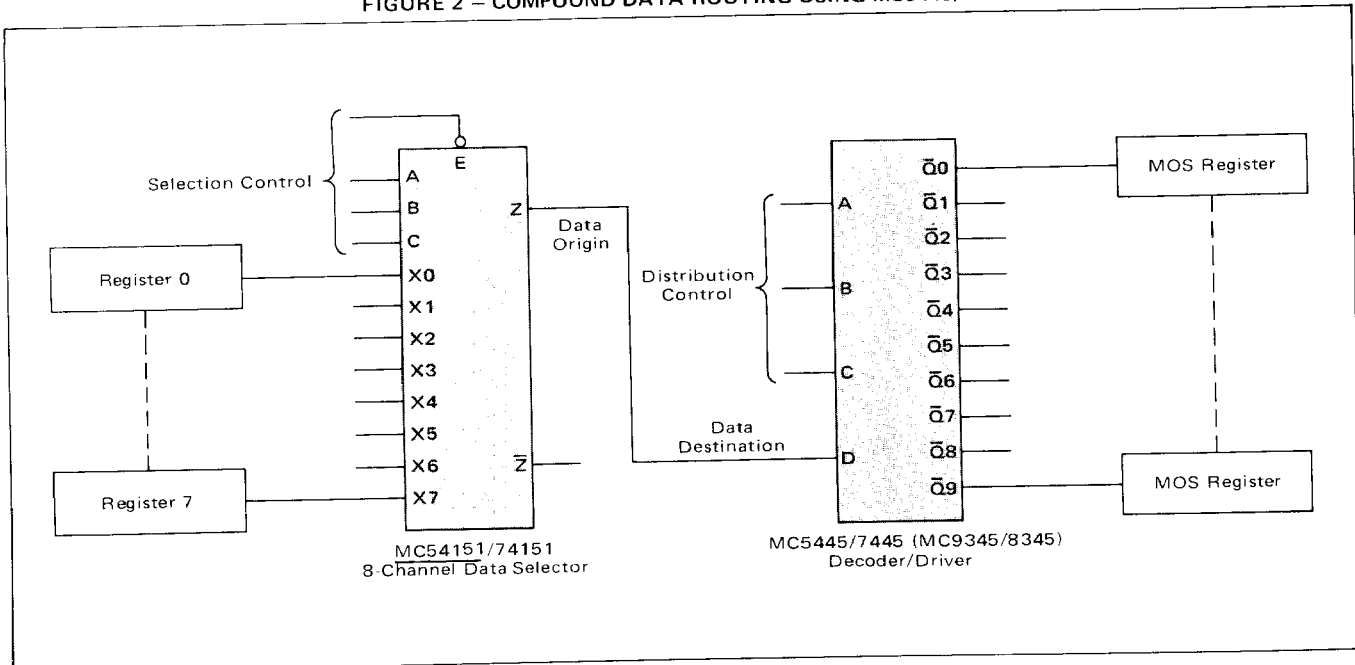


FIGURE 2 - COMPOUND DATA ROUTING USING MC5445/7445



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