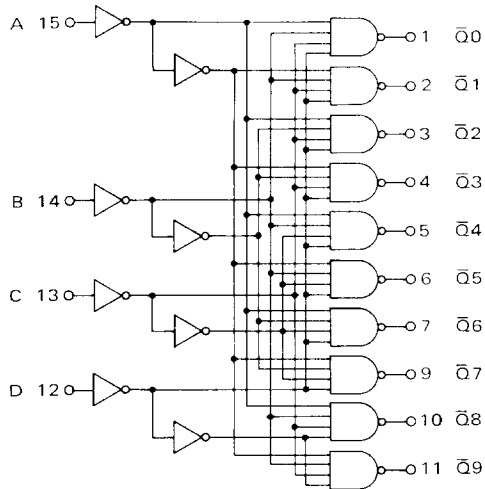




**MC5445 • MC7445**  
**MC9345 • MC8345**  
**MC54145 • MC74145**  
**MC93145 • MC83145**

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<sub>CC</sub> = 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

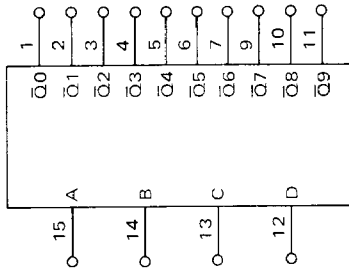
Total Power Dissipation = 215 mW typ/pkg  
Propagation Delay Time = 50 ns max

2  
004472  
4472  
ORIG  
NOT

INPUTS				OUTPUTS									
D	C	B	A	$\bar{Q}_9$	$\bar{Q}_8$	$\bar{Q}_7$	$\bar{Q}_6$	$\bar{Q}_5$	$\bar{Q}_4$	$\bar{Q}_3$	$\bar{Q}_2$	$\bar{Q}_1$	$\bar{Q}_0$
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	1	0	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

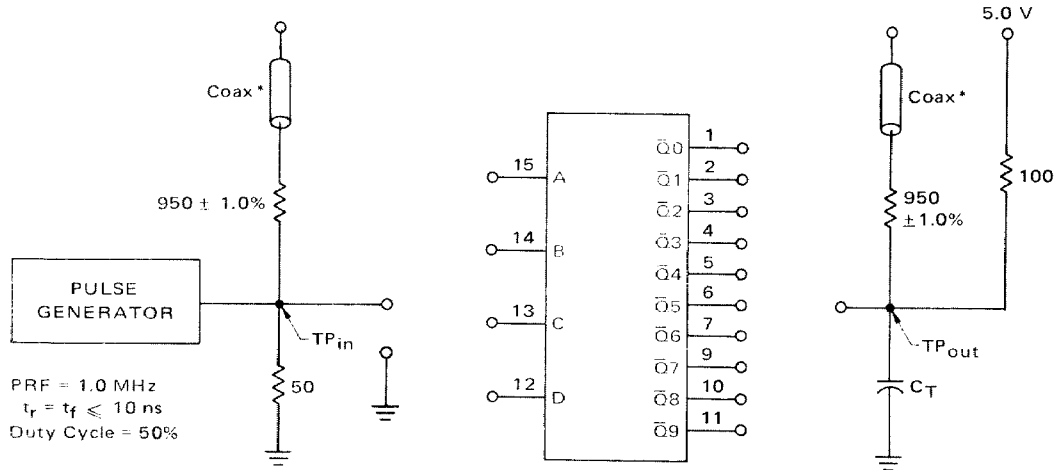
Test procedures are shown for only one input and one output. Test other inputs and outputs in the same manner according to the truth table. Test all input-output combinations according to the truth table.



Characteristic	Symbol	Pin Under Test	Test Limits -55 to +125°C			Test Limits 0 to +75°C			TEST CURRENT/VOLTAGE VALUES (All Temperatures)																		
			Min	Max	Unit	Min	Max	Unit	mA		Volts																
Input	Forward Current	I <sub>L</sub>		-1.6	mA/dc				I <sub>OL1</sub>	70	I <sub>OL2</sub>	80	I <sub>CEX</sub>	0.75	V <sub>IL</sub>	0.4	V <sub>IH</sub>	2.4	V <sub>IHT</sub>	2.0	V <sub>CC</sub>	5.0	V <sub>CCCL</sub>	4.5	V <sub>CCH</sub>	5.5	
	Leakage Current	I <sub>LH</sub>		40	μA/dc																						
		I <sub>LHH</sub>			1.0	mA/dc																					
Output	Output Voltage	V <sub>OL</sub>		0.9	V/dc																						
	MC5445/7445 MC8345/74145	V <sub>CEX</sub>		30	V/dc																						
<b>Power Requirements (Total Device)</b> Power Supply Drain			I <sub>CC</sub>		67	mA/dc																					
Switching Parameters			t <sub>PHL</sub>		50	ns																					
Turn-On Delay			t <sub>PLH</sub>		50	ns																					

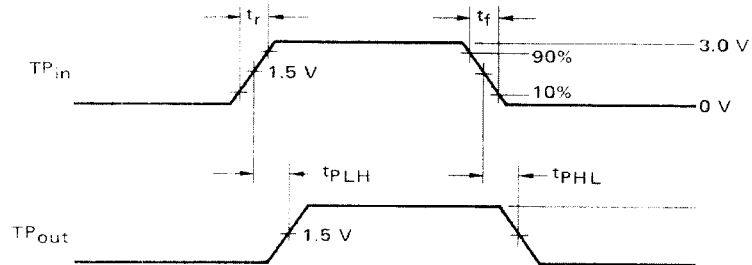
\*Tested only at 25°C.

### 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

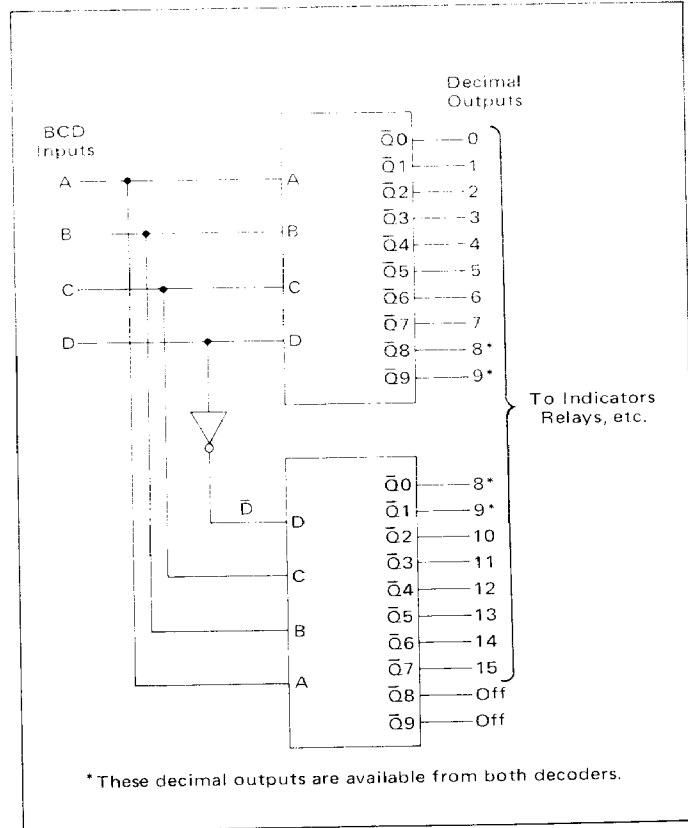
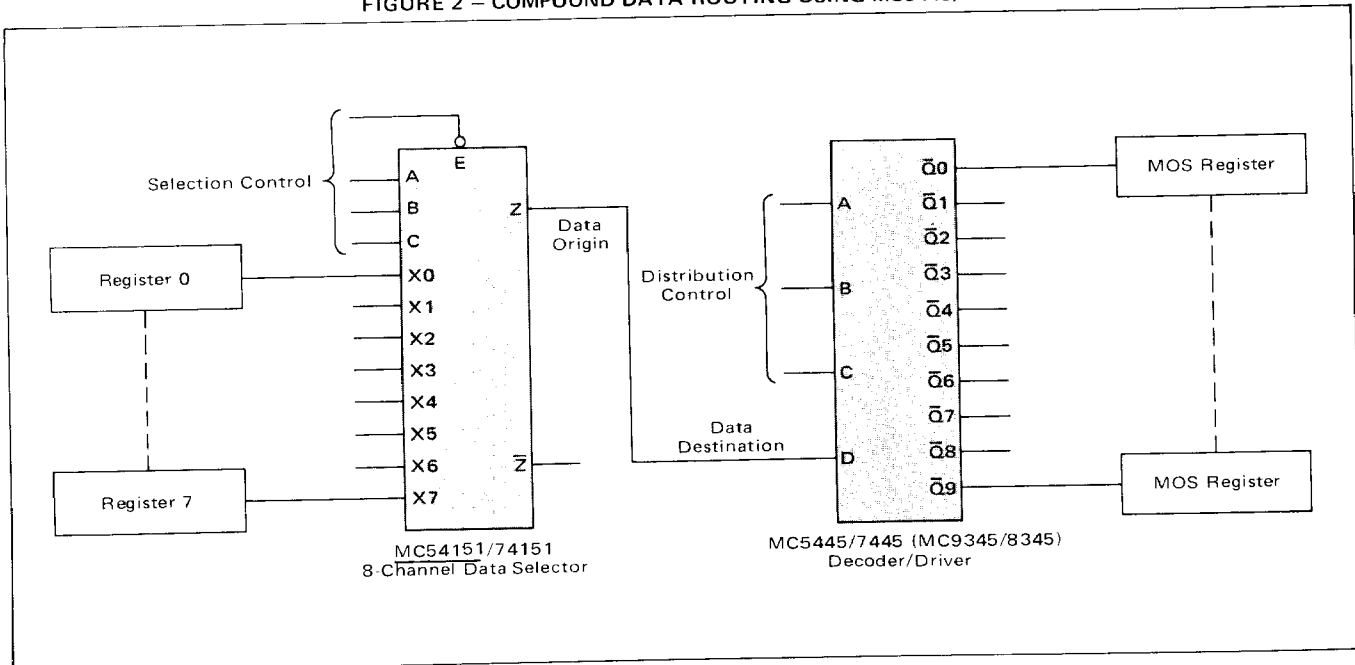


FIGURE 2 - COMPOUND DATA ROUTING USING MC5445/7445



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