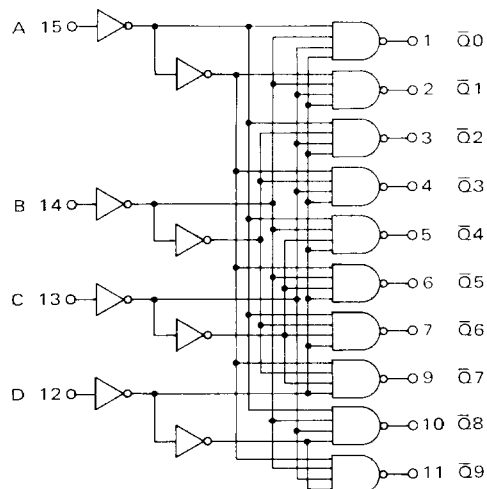




MC5445 • MC7445 MC9345 • MC8345 MC54145 • MC74145 MC93145 • MC83145

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

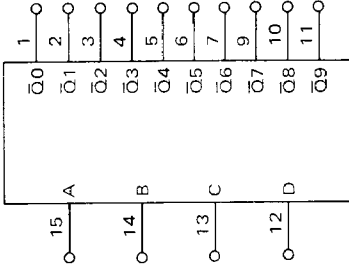
These devices are intended for use as drivers for indicators or relays, rather than drivers for MTTL logic gates, as is the case with the MC5442/7442, which is functionally identical. The output transistors of these devices are capable of sinking 80 mA, and have breakdown voltages of 30 V (MC5445/7445, 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

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	0	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.



TEST CURRENT/VOLTAGE VALUES (All Temperatures)									
Volts									
mA									
I _{OL1}	I _{OL2}	I _{CEX}	V _{IL}	V _{IH}	V _{IHH}	V _{ILT}	V _{IHT}	V _{CC}	V _{CC}
20	80	0.25	0.4	2.4	5.5	0.8	2.0	5.0	5.5
20	80	0.25	0.4	2.4	5.5	0.8	2.0	5.0	5.5

TEST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW									
I _{OL1}	I _{OL2}	I _{CEX}	V _{IL}	V _{IH}	V _{IHH}	V _{ILT}	V _{IHT}	V _{CC}	V _{CC}
			12	12	12			16	16
						12, 13, 14, 15	12, 13, 14, 15	16	16
1	1	1						16	16
								16	16

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min
	-1.6	mA _{dc}							
	40	μA _{dc}							
	1.0	mA _{dc}							
	0.9	V _{dc}							
	0.4	V _{dc}							
30		V _{dc}							
15		V _{dc}							
	62	mA _{dc}							
	50	ns							
	50	ns							

Test Limits									
0 to +75°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

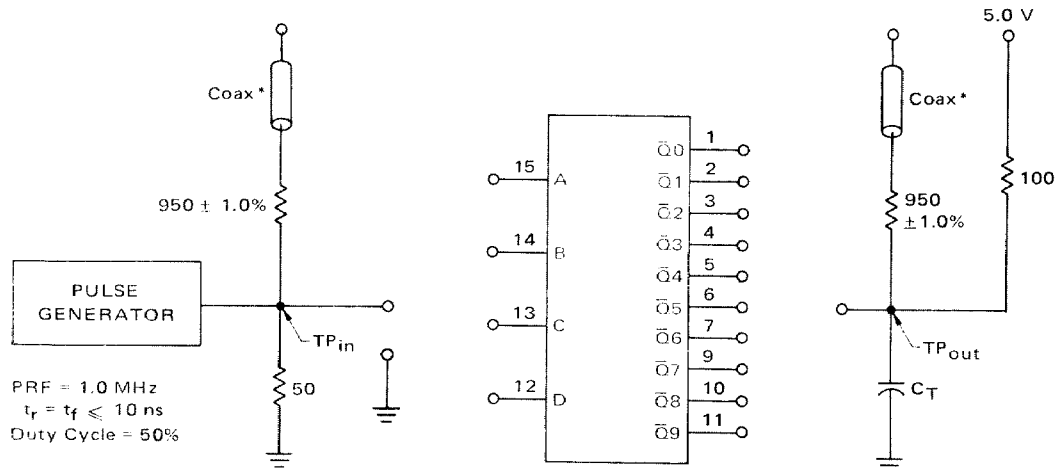
Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

Test Limits									
-55 to +125°C									
Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min

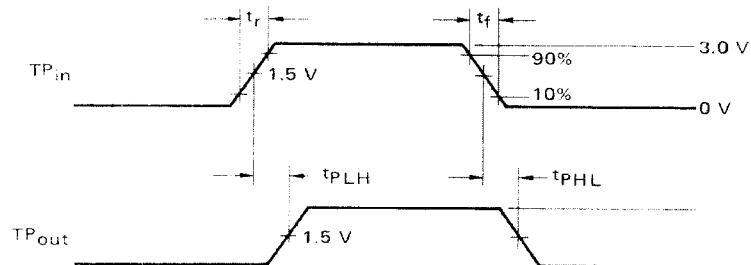
Test Limits		
-------------	--	--

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

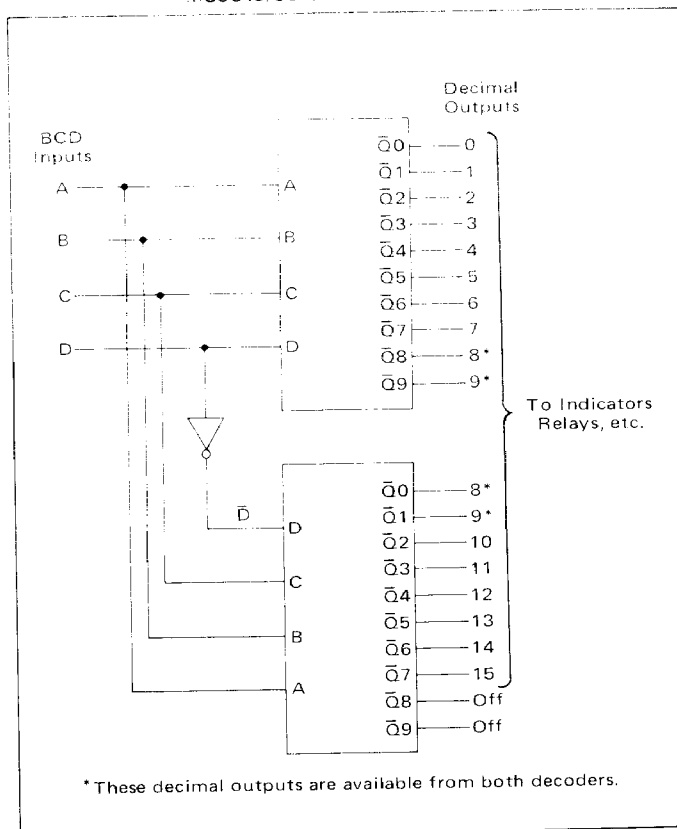
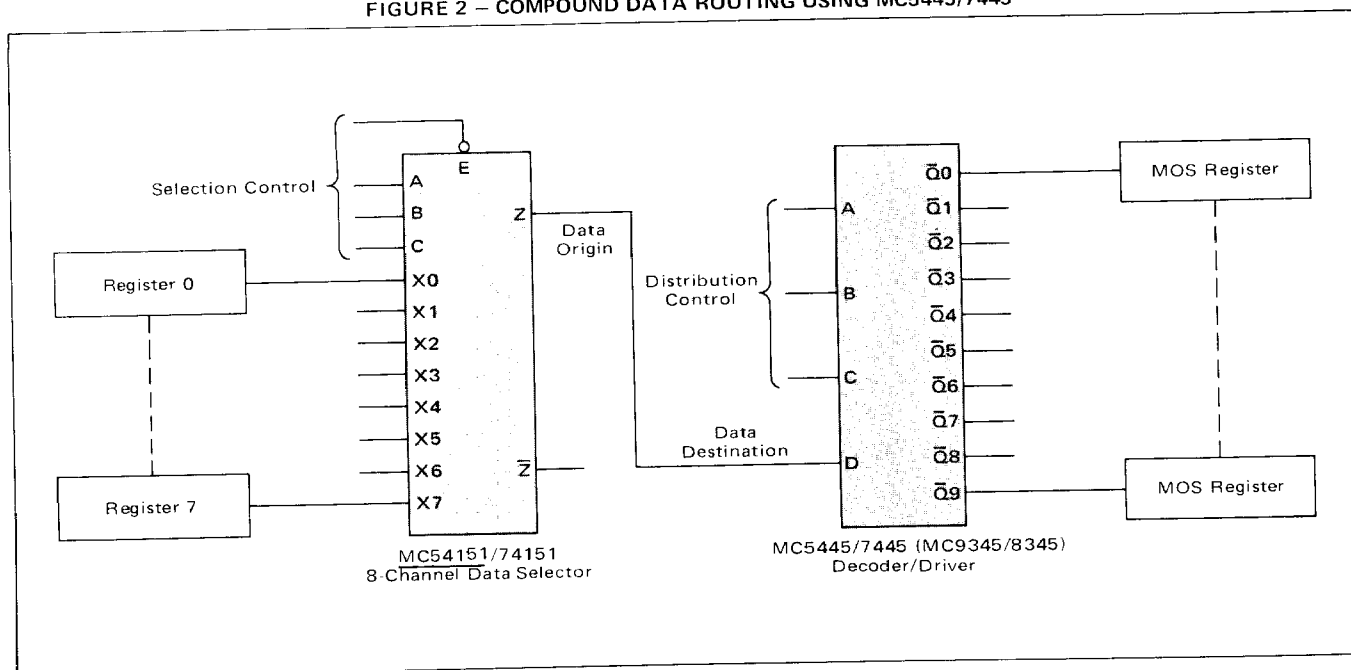


FIGURE 2 - COMPOUND DATA ROUTING USING MC5445/7445



MOTOROLA Semiconductor Products Inc.

BOX 20912 • PHOENIX, ARIZONA 85036 • A SUBSIDIARY OF MOTOROLA INC.