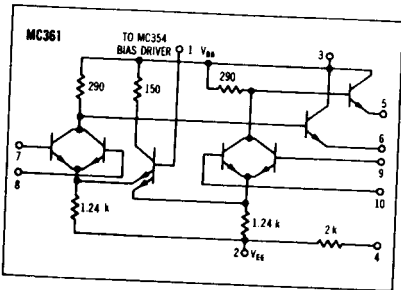
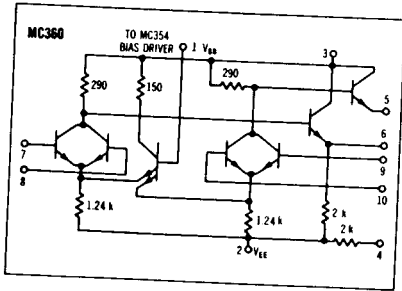
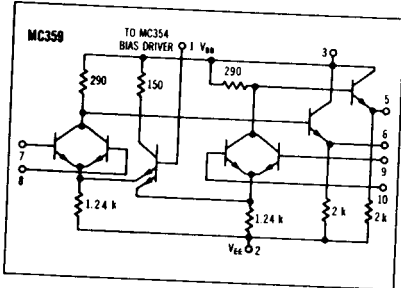
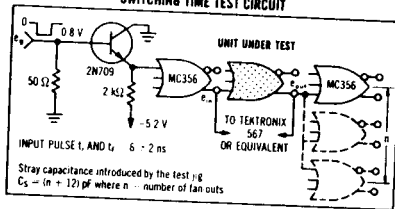


**MC359 · MC360 · MC361**

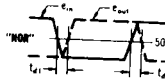
Dual 2-input gates that provide the positive logic "NOR" function. MC359 has two output pull-down resistors; MC360 has one of the output pull-down resistors optional; MC361 omits one output pull-down resistor and has the second optional.



SWITCHING TIME TEST CIRCUIT



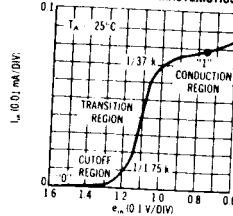
PROPAGATION DELAY



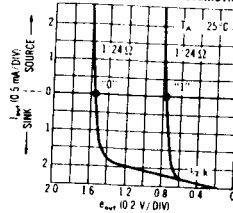
RISE AND FALL TIME



TYPICAL INPUT CHARACTERISTICS



TYPICAL OUTPUT CHARACTERISTICS



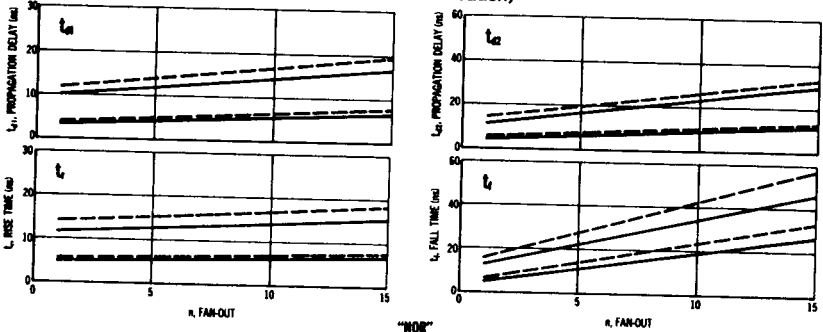
MC359, MC360, MC361 (continued)

ELECTRICAL CHARACTERISTICS

Characteristic	Test Conditions										Test Limits						Unit
	V <sub>dc</sub> ± 1%										0°C		+25°C		+75°C		
	V <sub>cc</sub> Pin No	V <sub>ee</sub> Pin No	V <sub>i</sub> Pin No	V <sub>in</sub> Pin No	V <sub>om</sub> Pin No	dV <sub>in</sub> Pin No	L <sub>1</sub> Pin No	Ground Pin No	Symbol Pin No ( )	Min	Max	Min	Max	Min	Max		
Power Supply	MC359, MC360	—	—	—	2.7, 8.10	1	—	—	3	I <sub>cc</sub> (2)	—	13.55	—	13.0	—	12.0	mA dc
Steady Current	MC361	—	—	—	2.7, 8.10	1	—	—	3	I <sub>cc</sub> (2)	—	10.5	—	10.1	—	9.2	mA dc
Input Current	7	—	—	—	2.8, 9.10	1	—	—	3	I <sub>in</sub> (7)	—	—	—	100	—	—	μA dc
	8	—	—	—	2.7, 9.10	1	—	—	3	I <sub>in</sub> (8)	—	—	—	—	—	—	μA dc
	9	—	—	—	2.7, 8.10	1	—	—	3	I <sub>in</sub> (9)	—	—	—	—	—	—	μA dc
	10	—	—	—	2.7, 8.9	1	—	—	3	I <sub>in</sub> (10)	—	—	—	—	—	—	μA dc
"WM" Legend "1" Output Voltage	—	—	—	—	2.8, 9.10	1	—	—	3	V <sub>o</sub> (8)	-0.715	-0.950	-0.670	-0.795	-0.990	-0.725	V dc
	—	—	—	—	2.7, 9.10	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
	—	—	—	—	2.7, 8.10	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
	—	—	—	—	2.7, 8.9	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
"WM" Legend "0" Output Voltage	—	7	—	—	2.8, 9.10	1	—	—	3	V <sub>o</sub> (8)	-1.810	-1.880	-1.085	-1.790	-1.395	-1.730	V dc
	—	8	—	—	2.7, 9.10	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
	—	9	—	—	2.7, 8.10	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
	—	10	—	—	2.7, 8.9	1	—	—	3	V <sub>o</sub> (8)	↓	↓	↓	↓	↓	↓	V dc
"WM" Output Voltage Change (No load to full load)	—	—	—	—	2.7, 8.10	1	—	6⊙	3	ΔV <sub>o</sub> (8)	—	-0.055	—	-0.055	—	-0.085	V dc
	—	—	—	—	2.7, 8.9	1	—	9⊙	3	ΔV <sub>o</sub> (8)	—	-0.055	—	-0.055	—	-0.085	V dc
"WM" Extension Breakpoint Voltage	—	—	—	—	2.8, 9.10	1	7⊙	—	3	V <sub>b</sub> (8)	—	-0.51	—	-0.55	—	-0.63	V dc
	—	—	—	—	2.7, 9.10	1	8⊙	—	3	V <sub>b</sub> (8)	—	↓	—	↓	—	↓	V dc
	—	—	—	—	2.7, 8.10	1	9⊙	—	3	V <sub>b</sub> (8)	—	↓	—	↓	—	↓	V dc
	—	—	—	—	2.7, 8.9	1	10⊙	—	3	V <sub>b</sub> (8)	—	↓	—	↓	—	↓	V dc
Switching Times	Probe In	Probe Out									Typ	Max	Typ	Max	Typ	Max	
	Propagation Delay Time	7	6	—	2.8, 9.10	1	—	—	3	t <sub>pd</sub> (8)	6.5	11.0	6.5	11.0	6.0	14.5	ns
		10	5	—	2.7, 8.9	1	—	—	3	t <sub>pd</sub> (8)	6.5	11.0	6.5	11.0	6.0	14.5	
		7	6	—	2.8, 9.10	1	—	—	3	t <sub>pd</sub> (8)	6.5	12.5	6.5	13.5	10.0	16.0	
		10	5	—	2.7, 8.9	1	—	—	3	t <sub>pd</sub> (8)	6.5	12.5	6.5	13.5	10.0	16.0	
	Rise Time	7	6	—	2.8, 9.10	1	—	—	3	t <sub>r</sub> (8)	8.5	12.5	8.0	12.5	11.0	15.5	ns
		10	5	—	2.7, 8.9	1	—	—	3	t <sub>r</sub> (8)	8.5	12.5	8.0	12.5	11.0	15.5	
	Fall Time	7	6	—	2.8, 9.10	1	—	—	3	t <sub>f</sub> (8)	9.0	14.0	9.5	14.0	11.5	17.0	ns
		10	5	—	2.7, 8.9	1	—	—	3	t <sub>f</sub> (8)	9.0	14.0	9.5	14.0	11.5	17.0	

Pin not listed are left open. For MC359, connect pin 4 to pin 5 for all tests. ⊙ Input voltage is adjusted to obtain dv<sup>2</sup> "WM" / dV<sub>in</sub> = 0.  
 ⊕ Current test conditions: no load = 0; full load = -2.5 mA dc ± 5%.

SWITCHING CHARACTERISTICS (10% to 90% distribution)



— 0°C and +25°C  
 - - - +75°C