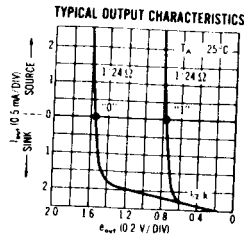
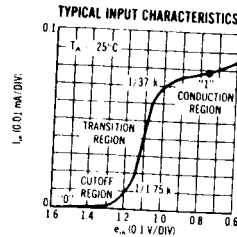
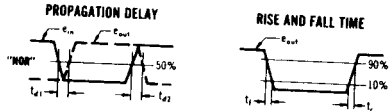
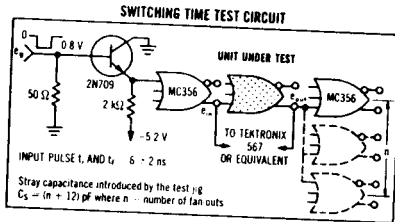
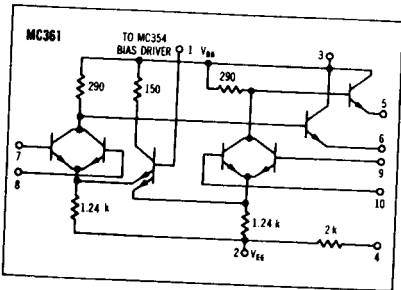
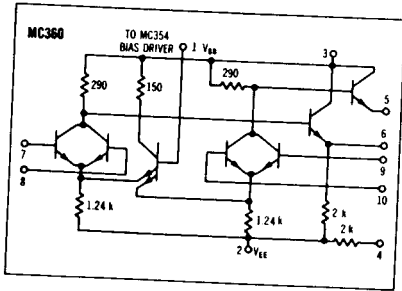
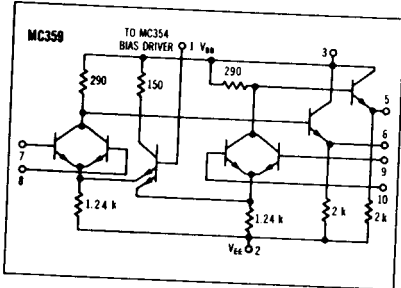


MC359 • MC360 • MC361

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.



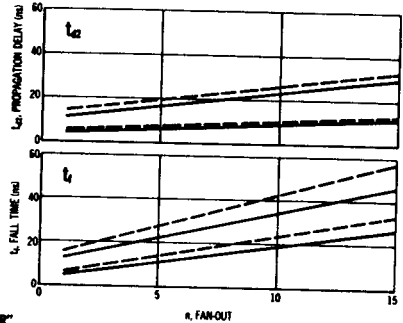
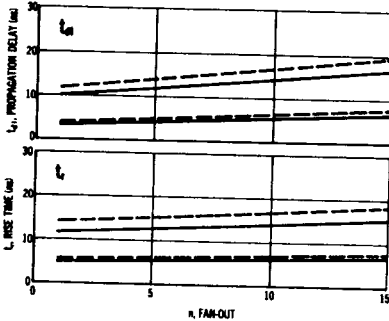
MC359, MC360, MC361 (continued)

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>i</sub> Pin No	Ground Pin No	Symbol Pin No ( )	Min	Max	Min	Max	Min	Max		
Power Supply	MC359, MC360	—	—	—	2,7,8,9,10	1	—	—	3	I <sub>cc</sub> (2)	—	13.55	—	13.0	—	12.0	mA dc
Steady Current	MC361	—	—	—	2,7,8,9,10	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> (9)	—	—	—	—	—	—	V dc
	—	—	—	—	2,7,8,10	1	—	—	3	V <sub>o</sub> (10)	—	—	—	—	—	—	V dc
	—	—	—	—	2,7,8,9	1	—	—	3	V <sub>o</sub> (11)	—	—	—	—	—	—	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> (9)	—	—	—	—	—	—	V dc
	—	9	—	—	2,7,8,10	1	—	—	3	V <sub>o</sub> (10)	—	—	—	—	—	—	V dc
	—	10	—	—	2,7,8,9	1	—	—	3	V <sub>o</sub> (11)	—	—	—	—	—	—	V dc
"WM" Output Voltage Change (No load to full load)	—	—	—	—	2,7,8,9,10	1	—	6⊙	3	ΔV <sub>o</sub> (8)	—	-0.055	—	-0.055	—	-0.085	V dc
	—	—	—	—	2,7,8,9,10	1	—	9⊙	3	ΔV <sub>o</sub> (9)	—	-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> (9)	—	—	—	—	—	—	V dc
	—	—	—	—	2,7,8,10	1	9⊙	—	3	V <sub>b</sub> (10)	—	—	—	—	—	—	V dc
	—	—	—	—	2,7,8,9	1	10⊙	—	3	V <sub>b</sub> (11)	—	—	—	—	—	—	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	—	2,7,9,10	1	—	—	3	t <sub>pd</sub> (9)	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	—	2,7,8,9,10	1	—	—	3	t <sub>pd</sub> (9)	6.5	13.5	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	
		10	5	—	2,7,8,9	1	—	—	3	t <sub>r</sub> (10)	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	
		10	5	—	2,7,8,9	1	—	—	3	t <sub>f</sub> (10)	9.0	14.0	9.5	14.0	11.5	17.0	

Pin not listed are left open. For MC360, 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