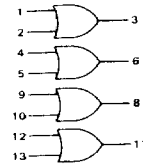
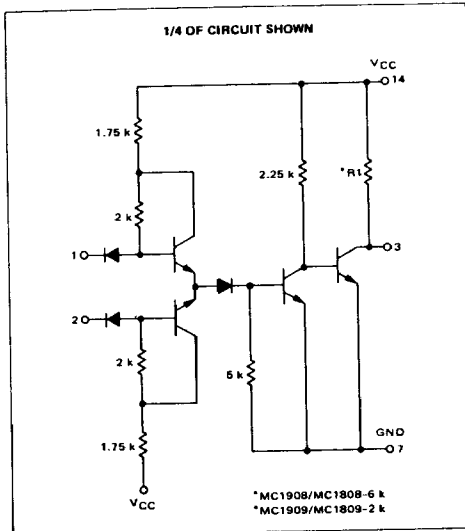


MDTL MC930/830 series

QUAD 2-INPUT "OR" GATE

MC1908F • MC1808F,P
MC1909F • MC1809F,P

This device consists of four 2-input gates, each performing the logical OR function. Added logic flexibility provided by this device helps to optimize system designs.



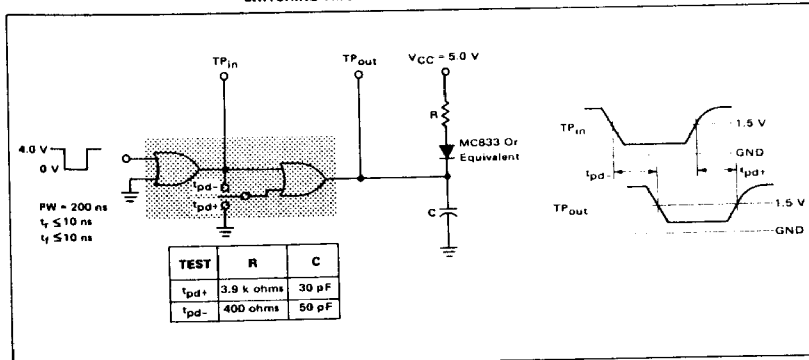
Positive Logic: 3 = 1 + 2
Negative Logic: 3 = 1 • 2

Input Loading Factor = 1
Output Loading Factor = 1
MC1908, MC1808 = 8
MC1909, MC1809 = 7
Total Power Dissipation

	MC1908 MC1808	MC1909 MC1809
Inputs Low	95 mW	130 mW
Inputs High	100 mW	100 mW
50% Duty Cycle	97 mW	115 mW

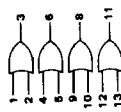
Propagation Delay Time
MC1908/MC1808 = 35 ns typ
MC1909/MC1809 = 30 ns typ

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one gate. The other gates are tested in the same manner.



Characteristic	Symbol	Pin Under Test	MC1908, MC1909 Test Limits						MC1808, MC1809 Test Limits						I _{CC1}	I _{CC2}	I _{CC3}	I _{CC4}	I _{CC5}	V _{DD1}	V _{DD2}	V _{DD3}	V _{DD4}	V _{DD5}		
			-55°C		+25°C		+125°C		0°C		+25°C		+75°C													
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max												
Output Voltage	V _{OL}	3	0.40	0.40	0.45	0.45	V _{DC}	0.45	0.45	0.50	0.50	V _{DC}	0.45	0.45	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Output Voltage	V _{OH}	3	2.50	2.40	2.50	2.50	↑	2.00	2.40	2.50	2.50	↑	2.00	2.40	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Static Current	I _{CC}	3	-1.34	-1.34	-1.30	-1.30	mAdc	-1.34	-1.34	-1.30	-1.30	mAdc	-1.34	-1.34	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30
Forward Current	I _{CC}	3	-4.00	-4.00	-3.75	-3.75	mAdc	-4.00	-4.00	-3.75	-3.75	mAdc	-4.00	-4.00	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75	-3.75
Reverse Current	I _R	3	2.0	2.0	5.0	5.0	μAac	5.0	5.0	10	10	μAac	5.0	5.0	10	10	10	10	10	10	10	10	10	10	10	10
Output Leakage	I _{CEX}	3	-	50	-	-	μAac	-	50	-	100	-	100	-	100	-	100	100	100	100	100	100	100	100	100	100
Forward Current	I _F	2	-1.60	-1.60	-1.50	-1.50	mAac	-1.60	-1.60	-1.40	-1.40	mAac	-1.60	-1.60	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40
Power Drain Current (Total Device)	I _{PD}	14	-	25	-	-	mAac	-	25	-	29	-	29	-	37.5	-	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
Switching Times	t _{PHL}	14	-	35	-	-	ns	-	35	-	37.5	-	37.5	-	45	-	45	45	45	45	45	45	45	45	45	45
	t _{PLL}	14	-	35	-	-	ns	-	35	-	37.5	-	37.5	-	45	-	45	45	45	45	45	45	45	45	45	45
	t _{MAX}	14	-	50	-	-	ns	-	50	-	97	-	97	-	115	-	115	115	115	115	115	115	115	115	115	115
	t _{PH}	1,3	-	25	90	-	ns	-	25	90	-	25	90	-	35	85	-	35	85	85	85	85	85	85	85	85
	t _{PL}	1,3	-	15	65	-	ns	-	15	65	-	15	65	-	20	55	-	20	55	55	55	55	55	55	55	55
	t _{PHL}	1,3	-	15	75	-	ns	-	15	75	-	15	75	-	20	65	-	20	65	65	65	65	65	65	65	65
	t _{PLL}	1,3	-	15	65	-	ns	-	15	65	-	15	65	-	20	55	-	20	55	55	55	55	55	55	55	55

Pin not listed are left open.

Characteristic	TEST VOLTAGE/CURRENT VALUES													
	I _{CC}	I _{OH}	V _{IH}	V _{OL}	V _I	V _O	V _{CEX}	V _{CC1}	V _{CC2}	V _{CC3}	V _{CC4}	V _{CC5}	V _{DD}	
MC1908/MC1808	11.4	10.4	-0.15	-0.5	1.40	2.10	0	4.00	-	-	-	-	4.50	5.50
MC1909/MC1809	12.0	11.0	-0.15	-0.5	1.10	2.00	0	4.00	4.50	5.00	4.50	5.00	5.00	6.00
MC1908/MC1808/MC1809	10.8	9.8	-0.12	-0.5	0.80	2.00	0	4.00	-	-	-	-	4.50	5.50
MC1908/MC1808	12.0	11.0	-0.12	-0.5	1.20	2.00	0.45	4.00	-	-	-	-	5.00	5.00
MC1909/MC1809	12.0	11.0	-0.12	-0.5	1.10	1.90	0.45	4.00	5.00	5.00	5.00	5.00	5.00	6.00
MC1908/MC1808/MC1809	11.4	10.4	-0.12	-0.5	0.90	1.80	0.50	4.00	-	-	-	-	5.00	5.00

Characteristic	TEST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW:												
	I _{OH}	V _{IH}	V _{OL}	V _I	V _O	V _{CEX}	V _{CC1}	V _{CC2}	V _{CC3}	V _{CC4}	V _{CC5}	V _{DD}	
MC1908/MC1808	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1909/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1908/MC1808/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1908/MC1808	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1909/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1908/MC1808/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1908/MC1808	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1909/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	
MC1908/MC1808/MC1809	3	1.3	-	-	-	-	14	-	-	-	-	7	

PRODUCT DOCUMENTATION

The three documents listed in the following table are required for a complete description of the DSP56301 and are necessary to design properly with the part. Documentation is available from one of the following locations (see back cover for detailed information):

- A local Motorola distributor
- A Motorola semiconductor sales office
- A Motorola Literature Distribution Center
- The World Wide Web (WWW)

See the **Additional Support** section of the *DSP56300 Family Manual* for detailed information on the multiple support options available to you.

Table 1 DSP56301 Documentation

Name	Description	Order Number
DSP56300 Family Manual	Detailed description of the DSP56300 family processor core and instruction set	DSP56300FM/AD
DSP56301 User's Manual	Detailed functional description of the DSP56301 memory configuration, operation, and register programming	DSP56301UM/AD
DSP56301 Technical Data	DSP56301 features list and physical, electrical, timing, and package specifications	DSP56301/D

