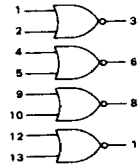
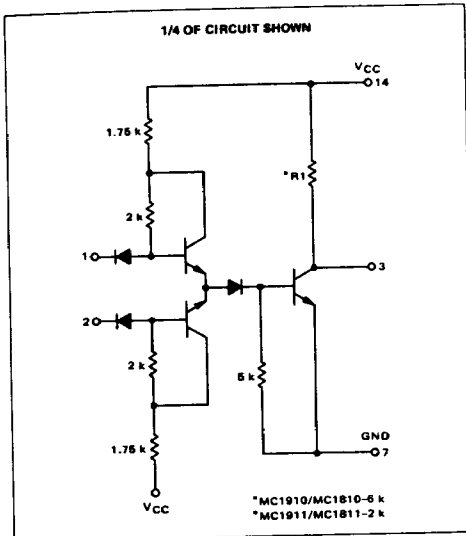


MDTL MC930/830 series

QUAD 2-INPUT "NOR" GATE

MC1910F · MC1810F, P
MC1911F · MC1811F, P

This device consists of four 2-input gates, each performing the logical NOR function. Added logic flexibility provided by this device helps to optimize system designs.



Positive Logic: $3 = 1 + 2$
Negative Logic: $3 = \bar{1} + \bar{2}$

Input Loading Factor = 1
Output Loading Factor:
MC1910, MC1810 = 8
MC1911, MC1811 = 7

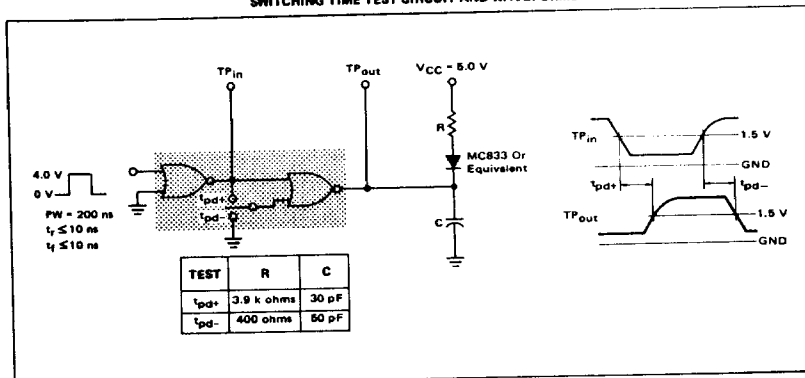
Total Power Dissipation

	MC1910 MC1810	MC1911 MC1811
Inputs Low	45 mW	45 mW
Inputs High	75 mW	100 mW
50% Duty Cycle	60 mW	72 mW

Propagation Delay Time:

MC1910/MC1810 = 30 ns typ
MC1911/MC1811 = 25 ns typ

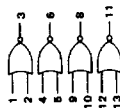
SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



MC1910F/MC1810F, P, MC1911F/MC1811F, P (continued)

ELECTRICAL CHARACTERISTICS

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



Characteristic	Symbol	Pin Under Test	TEST VOLTAGE/CURRENT VALUES										TEST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW:									
			mA					V _{OH}					mA					V _{OH}				
			I _{OL}	I _{OH}	I _{CC1}	I _{CC2}	I _{CC3}	V _{OL}	V _{OH}	V _{OL}	V _{OH}	V _{OL}	V _{OH}	I _{OL}	I _{OH}	I _{CC1}	I _{CC2}	I _{CC3}	V _{OL}	V _{OH}	V _{OL}	V _{OH}
Output Voltage	V _{OL} V _{OH}	3 3	10.40 0.40	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50	0.40 2.50
Short-Circuit Current	I _{SC}	3	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00	-1.34 -4.00
Reverse Current	I _R	1	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0
Output Leakage Current	I _{CEX}	3	-	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Forward Current	I _F	2	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00	-1.00 -1.00
Power Dissipation (TOTAL DEVICE)	P _{PDH} P _{PDH} I _{max}	14 14 14	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5	- 20.0 27.5
Switching Times	t _{PL} t _{PH} t _{PL} t _{PH}	1,3 1,3 1,3 1,3	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75	- 25.00 10.30 15.75

*Pins not listed are left open.

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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

