

QUAD 2-INPUT "NAND" POWER GATE

MDTL MC930/830 series

MC946E · MC846F, P
MC949F · MC849F, P

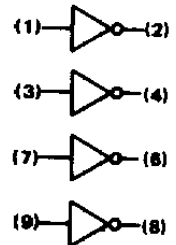
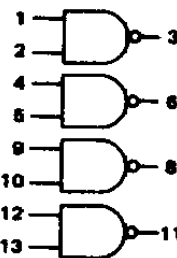
QUAD INVERTER

MC946G · MC846G
MC949G · MC849G

This gate element, in the 14-pin flat and dual in-line packages, consists of four 2-input NAND gate circuits. This circuit can be used as a dual 2-input non-inverting gate, or as two bistable circuits when two dual 2-input gates are cross-coupled. Since the metal can (G suffix) has only 10 pins, that circuit consists of four inverters.

MC946F/MC846F, P
MC849F/MC849F, P

MC946G/MC846G
MC849G/MC849G



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

Positive Logic: $2 = \overline{1}$
Negative Logic: $2 = \overline{1}$

Input Loading Factor = 1

Output Loading Factor:

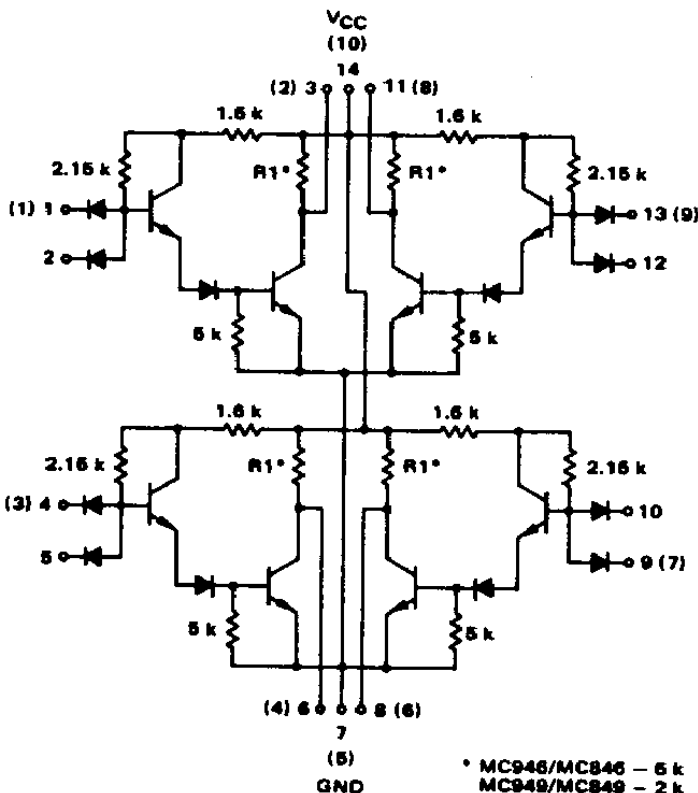
MC946/MC846 = 8
MC849/MC849 = 7

Total Power Dissipation:

	MC946 MC846	MC849 MC849
Inputs Low	24 mW	24 mW
Inputs High	82 mW	84 mW
50% Duty Cycle	38 mW	54 mW

Propagation Delay Time:

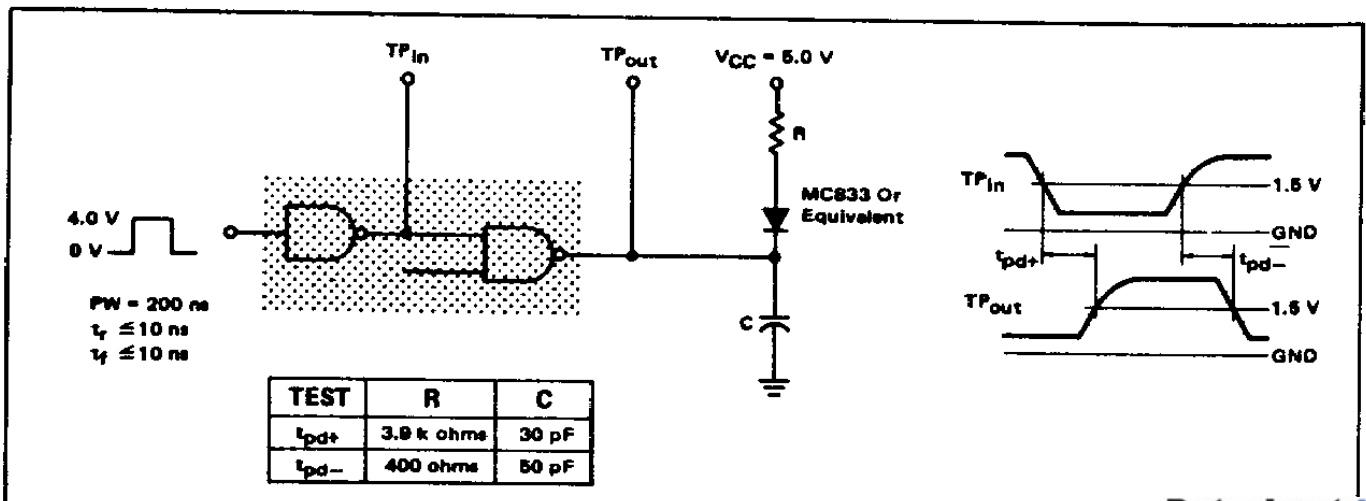
MC946/MC846 = 30 ns typ
MC849/MC849 = 25 ns typ



* MC946/MC846 - 5 k
MC849/MC849 - 2 k

Number at end of terminal represents pin number for flat and dual in-line packages. Number in parenthesis indicates pin number for metal can.

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS

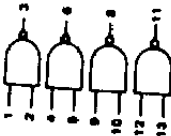


MC946F/MC846F, P, MC949F/MC849F, P (continued)
 MC946G/MC846G, MC949G/MC849G (continued)

ELECTRICAL CHARACTERISTICS

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

NOTE: Although the test conditions and test limits are the same for devices in ALL available packages, the table shows pin connections for testing only the flat and dual in-line packaged devices. To test devices in the metal can, substitute pin numbers shown in the conversion table below.



PACKAGE	PIN NUMBER													
Flat/Dual In-Line	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Metal Can	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Characteristic	Symbol	Pin Under Test	TEST CURRENT / VOLTAGE VALUES											V _{OH}	V _{OL}	V _{max}		
			-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 _{OH}	3	2.50	2.60	2.50	2.60	2.50	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Short-Circuit Current	I _{SC}	3	-1.34	-1.30	-1.34	-1.30	-1.34	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30
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
Output Leakage Current	I _{CEX}	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forward Current	I _F	1	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60
Power Drain Current (Total Device)	I _{PDH}	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MC946/MC846	I _{PDH}	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MC949/MC849	I _{PDH}	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Types	I _{max}	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Switching Times	t _{pd+}	1,3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MC946/MC846	t _{pd-}	1,3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MC949/MC849	t _{pd+}	1,3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	t _{pd-}	1,3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plus not listed are left open.

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