



MICROCIRCUIT DATA SHEET

MNMM54C906-X REV 1A0

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HEX OPEN DRAIN N-CHANNEL BUFFERS

General Description

These buffers employ monolithic CMOS technology in achieving open drain outputs. The MM54C906 consists of six inverters driving six N-channel devices. The open drain feature of these buffers makes level shifting or wire AND and 1 inputs are protected from static discharge by diode clamps to Vcc and to ground.

Industry Part Number

MM54C906

NS Part Numbers

MM54C906J/883
MM54C906W/883

Prime Die

MM54C906

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp	Description	Temp (°C)
1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

(Absolute Maximum Ratings)

(Note 1)

Voltage at Any Pin	-0.3V to Vcc +0.3V
Voltage at Any Output Pin	-0.3V to +18V
Operating Temperature Range	-55 C to +125 C
Storage Temperature Range	-65 C to +150 C
Power Dissipation	
Dual-In-Line	700mW
Small Outline	500mW
Operating Vcc Range	3V to 15V
Absolute Maximum Vcc	18V
Lead Temperature (Tl)	260 C
(Soldering, 10 seconds)	

Note 1: "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. Except for "Operating Temperature Range" they are not meant to imply that the devices should be operated at these limits. The table of "Electrical Characteristics" provides conditions for actual device operation.

Electrical Characteristics

DC PARAMETERS:

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Iih	Logical "1" Input Current	Vcc = 15V, Vin = 15V, other inputs at 0V				1	uA	1, 2, 3
Iil	Logical "0" Input Current	Vcc = 15V, Vin = 0V, all inputs			-1		uA	1, 2, 3
Icc	Power Supply Current	Vcc = 15V, Vin = 0V, all inputs				15	uA	1, 2, 3
		Vcc = 15V, Vin = 15V, all inputs				15	uA	1, 2, 3
Icex	Output Leakage Current	Vcc = 4.5V, Vout = 18V, Vin = 3V, all inputs				5	uA	1, 2, 3
Iod	Output Drive Current	Vcc = 4.5V, Vout = 0.5V, Vin = 1.45V, all inputs			2.1		mA	1, 2, 3
		Vcc = 4.5V, Vout = 1V, Vin = 1.45V, all inputs			4.2		mA	1, 2, 3
		Vcc = 10V, Vout = 0.5V, Vin = 2V, all inputs			4.2		mA	1, 2, 3
		Vcc = 10V, Vout = 1V, Vin = 2V, all inputs			8.4		mA	1, 2, 3
Vih	Logical "1" Input Voltage	Vcc = 5V	1		3.5		V	1, 2, 3
		Vcc = 10V	1		8		V	1, 2, 3
		Vcc = 4.5V (CMOS to LP)	1		3		V	1, 2, 3
Vil	Logical "0" Input Voltage	Vcc = 5V	1			1.5	V	1, 2, 3
		Vcc = 10V	1			2	V	1, 2, 3
		Vcc = 4.5V (CMOS to LP)	1			0.8	V	1, 2, 3

Electrical Characteristics

AC PARAMETERS: PROPAGATION DELAY TIME:

(The following conditions apply to all the following parameters, unless otherwise specified.)
 AC: $C_l = 50\text{pF}$ or equivalent impedance provided by diode load.

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
t _{PHL}		V _{cc} = 5V, R _l = 10K	3			150	nS	9
			3			210	nS	10, 11
		V _{cc} = 10V, R _l = 10K	2			75	nS	9
t _{PLH}		V _{cc} = 5V	3			640	nS	9
			3			505	nS	10
			3			290	nS	11
		V _{cc} = 10V	2, 4			75+K	nS	9

- Note 1: Parameter tested go-no-go only.
- Note 2: Guaranteed parameter not tested.
- Note 3: Tested at 25 C; guaranteed but not tested at +125 C and -55 C.
- Note 4: $K = .7RC$ where R = LOAD resistance and C = LOAD capacitance (C_l) plus device output capacitance (C_{out}).