



Triple 2 Input Exclusive "OR"/Exclusive "NOR" Gate

**ELECTRICALLY TESTED PER:
5962-8772701**

The 10H507 is a triple 2 input **Exclusive OR/NOR** gate. This MECL 10H part is a functional/pinout duplication of the standard MECL 10K family part, with 100% improvement in clock frequency and propagation delay and no increase in power-supply current.

- Propagation Delay, 1.0 ns Typical
- 60 mW Max/Gate (No Load)
- Improved Noise Margin 150 mV (Over Operating Voltage and Temperature Range)
- Voltage Compensated
- MECL 10K-Compatible

PIN ASSIGNMENTS

FUNCTION	DIL	FLATS	LCC	BURN-IN (CONDITION C)
VCC1	1	5	2	GND
AOUT	2	6	3	51 Ω to V _{TT}
AOUT	3	7	4	51 Ω to V _{TT}
A _{IN}	4	8	5	GND
A _{IN}	5	9	7	OPEN
N.C.	6	10	8	OPEN
B _{IN}	7	11	9	OPEN
VEE	8	12	10	VCC
B _{IN}	9	13	12	GND
BOUT	10	14	13	51 Ω to V _{TT}
BOUT	11	15	14	51 Ω to V _{TT}
COUT	12	16	15	51 Ω to V _{TT}
COUT	13	1	17	51 Ω to V _{TT}
C _{IN}	14	2	18	GND
C _{IN}	15	3	19	OPEN
VCC2	16	4	20	GND

BURN - IN CONDITIONS:

V_{TT} = - 2.0 V MAX/ - 2.2 V MIN

VEE = - 5.7 V MAX/ - 5.2 V MIN

Military 10H507

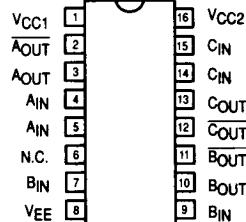


AVAILABLE AS

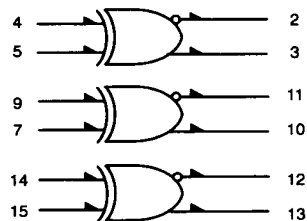
- 1) JAN: N/A
 - 2) SMD: 5962-8772701
 - 3) 883: 10H507/BXAJC
- X = CASE OUTLINE AS FOLLOWS:**

**PACKAGE: CERDIP: E
CERFLAT: F
LCC: 2**

**The letter "M" appears before
the slash on LCC.**



LOGIC DIAGRAM



$$3 = (4 \cdot \bar{5}) + (\bar{4} \cdot 5)$$

$$2 = (\bar{4} \cdot \bar{5}) + (4 \cdot 5)$$

10H507 QUIESCENT LIMIT TABLE *

* ELECTRICAL CHARACTERISTICS

Each MECL 10H series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 linear fpm is maintained. Outputs are terminated through a 100 Ω resistor to -2.0 volts.

Test Temperature	Test Voltage Values (Volts)									
	V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	PS ₁	PS ₂	VEE ₁	VEE ₂	VEEL	VEEL
T _A = 25 °C	-0.78	-1.95	-1.11	-1.480	+1.11	+0.31	-5.46	-4.94	-2.94	-2.94
T _A = 125 °C	-0.65	-1.95	-0.96	-1.465	+1.24	+0.36	-5.46	-4.94	-2.94	-2.94
T _A = -55 °C	-0.84	-1.95	-1.16	-1.510	+1.01	+0.28	-5.46	-4.94	-2.94	-2.94

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW									
		+ 25 °C		+ 125 °C		- 55 °C			Pinouts referenced are for DIL package, check Pin Assignments VCC = 0 V, Output Load = 100 Ω to - 2.0 V									
		Subgroup 1		Subgroup 2		Subgroup 3												
		Min	Max	Min	Max	Min	Max		V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	VEE1	VEE2	V _{CC}	P.U.T.		
V _{OH}	High Output Voltage	- 1.01	- 0.78	- 0.86	- 0.65	- 1.06	- 0.84	V	4, 5, 7, 9, 14, 15	4, 5, 7, 9, 14, 15			8		1, 16	2, 3, 10-13		
V _{OL}	Low Output Voltage	- 1.95	- 1.58	- 1.95	- 1.565	- 1.95	- 1.61	V	4, 5, 7, 9, 14, 15	4, 5, 7, 9, 14, 15			8		1, 16	2, 3, 10-13		
V _{OH1}	High Output Voltage	- 1.01	- 0.78	- 0.86	- 0.65	- 1.06	- 0.84	V		4, 7, 14	4, 5, 7, 9, 14, 15	4, 5, 7, 9, 14, 15	8	8	1, 16	2, 3, 10-13		
V _{OL1}	Low Output Voltage	- 1.95	- 1.58	- 1.95	- 1.565	- 1.95	- 1.61	V	5, 9, 15		4, 5, 7, 9, 14, 15	4, 5, 7, 9, 14, 15	8	8	1, 16	2, 3, 10-13		
I _{EE}	Power Supply Current	- 28		- 31		- 31		mA	5, 7, 15				8		1, 16	8		
I _{IH}	Input Current High		220		425		425	μA	4, 9, 14				8		1, 16	4, 9, 14		
I _{IH1}	Input Current High		265		425		425	μA	5, 7, 15				8		1, 16	5, 7, 15		
I _{IL}	Input Current Low	0.5		0.3		0.5		μA		4, 5, 7, 9, 14, 15				8	1, 16	4, 5, 7, 9, 14, 15		

10H507 QUIESCENT LIMIT TABLE *

* ELECTRICAL CHARACTERISTICS

Each MECL 10H series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 linear fpm is maintained. Outputs are terminated through a 100 Ω resistor to -2.0 volts.

Test Temperature	Test Voltage Values (Volts)									
	V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	PS1	PS2	VEE1	VEE2	VEEL	
T _A = 25 °C	-0.78	-1.95	-1.11	-1.480	+1.11	+0.31	-5.46	-4.94	-2.94	
T _A = 125 °C	-0.65	-1.95	-0.96	-1.465	+1.24	+0.36	-5.46	-4.94	-2.94	
T _A = -55 °C	-0.84	-1.95	-1.16	-1.510	+1.01	+0.28	-5.46	-4.94	-2.94	

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW																
	Functional Parameters:	+ 25 °C		+ 125 °C		- 55 °C			Pinouts referenced are for DIL package, check Pin Assignments VCC = 2.0 V, Output Load = 100 Ω to GND																
																			Subgroup 9		Subgroup 10		Subgroup 11		
		Min	Max	Min	Max	Min	Max												VIN	VOUT	VCC	VEEL	PS1	PS2	P.U.T.
		tTLH	Rise Time	0.5	1.6	0.5	1.9												0.5	1.5	ns	4	3	1, 16	8
tTHL	Fall Time	0.5	1.6	0.5	1.9	0.5	1.5	ns	5	2	1, 16	8	5	5	3, 10-13										
tPHL	Propagation Delay High to Low	0.4	1.6	0.4	1.9	0.4	1.5	ns	7	11	1, 16	8	9	9	2, 3, 10, 12, 13										
tPLH	Propagation Delay Low to High	0.4	1.6	0.4	1.9	0.4	1.5	ns	14	13	1, 16	8	14	14	2, 3, 10-12										