



12-Bit Parity Generator Checker

**ELECTRICALLY TESTED PER:
5962-8756201**

The 10H560 is a 12-bit parity generator-checker. The output goes high when an odd number of inputs are high providing the odd parity function. Unconnected inputs are pulled to a logic low allowing parity detection and generation for less than 12 bits.

The 10H560 is a functional pin duplication of the standard 10K family part with 100% improvement in propagation delay and no increase in power-supply current.

- Propagation Delay, 2.5 ns Typical
- 480 mW Max/Pkg (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
Out	2	6	3	51 Ω to V _{TT}
IN ₁	3	7	4	GND
IN ₂	4	8	5	OPEN
IN ₃	5	9	7	OPEN
IN ₄	6	10	8	OPEN
IN ₅	7	11	9	OPEN
VEE	8	12	10	VEE
IN ₆	9	13	12	OPEN
IN ₇	10	14	13	GND
IN ₈	11	15	14	OPEN
IN ₉	12	16	15	OPEN
IN ₁₀	13	1	17	OPEN
IN ₁₁	14	2	18	OPEN
IN ₁₂	15	3	19	GND
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

Input	Output
Sum of High Level Inputs	Pin 2
Even	Low
Odd	High

Military 10H560

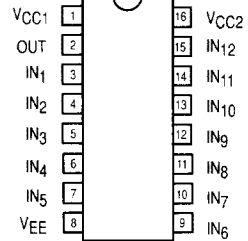


AVAILABLE AS

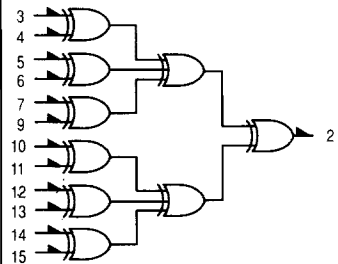
- 1) JAN: N/A
 - 2) SMD: 5962-8756201
 - 3) 883: 10H560/BXAJC
- X = CASE OUTLINE AS FOLLOWS:**

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

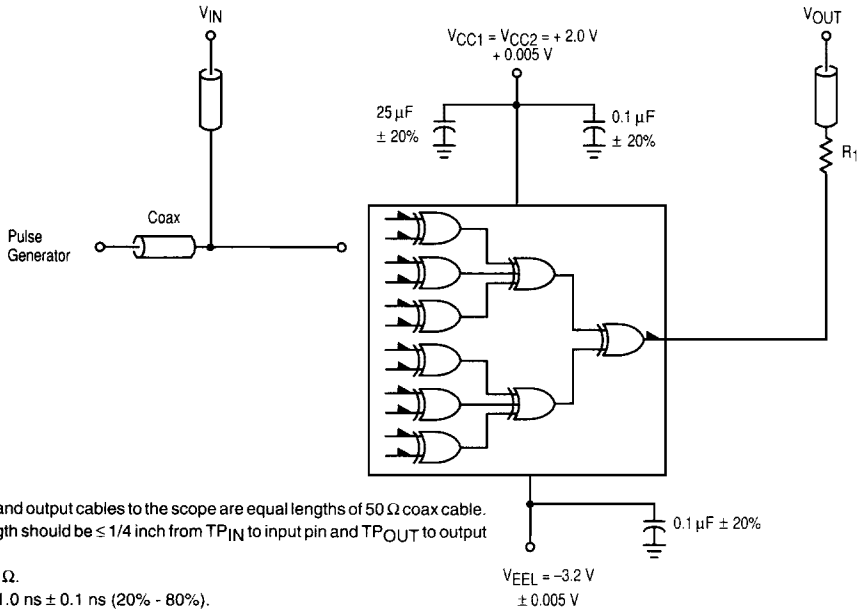
The letter "M" appears before the slash on LCC.



POSITIVE LOGIC DIAGRAM



10H560



NOTES

1. All input and output cables to the scope are equal lengths of 50 Ω coax cable. Wire length should be ≤ 1/4 inch from TP_{IN} to input pin and TP_{OUT} to output pin.
2. R₁ = 50 Ω.
3. t_r = t_f = 1.0 ns ± 0.1 ns (20% - 80%).
4. P_W ≥ 20 ns.
5. P_{RR} = 1.0 MHz.

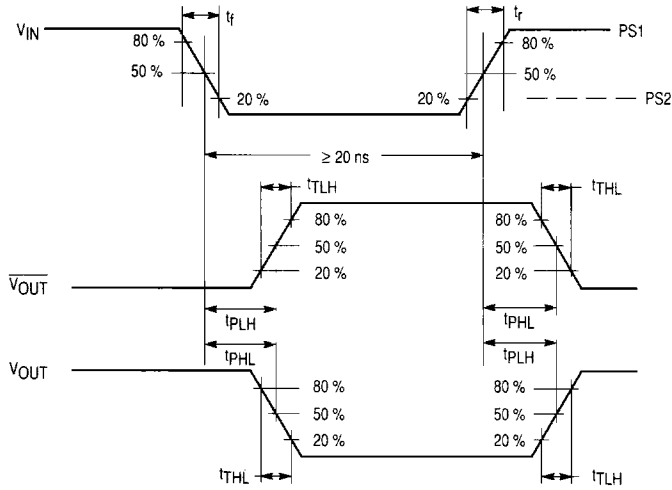


Figure 1. Switching Test Circuit and Waveforms

10H560 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	VEE _L	VEE _L
T _A = 25 °C	-0.78	-1.95	-1.10	-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 V _{CC} = 0 V, Output Load = 100 Ω to - 2.0 V							
		Subgroup 1		Subgroup 2		Subgroup 3			V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	V _{EE1}	V _{EE2}	V _{CC}	P.U.T.
V _{OH}	High Output Voltage	Min	-1.01	-0.86	-0.86	-1.06	-0.84	V	3-7 9-15	3-7			8	1, 16	2	
		Max	-0.78	-0.65	-0.65	-1.06	-0.84									
V _{OL}	Low Output Voltage	Min	-1.95	-1.95	-1.565	-1.61	-1.61	V	3-7 9-15	3-7 9-15			8	1, 16	2	
		Max	-1.58	-1.565	-1.06	-0.84										
V _{OH1}	High Output Voltage	Min	-1.01	-0.86	-0.86	-1.06	-0.84	V	3-7 9-11 13	4-7 9-15	3,5,7 10,12 14	12	8	1, 16	2	
		Max	-0.78	-0.65	-0.65	-1.06	-0.84									
V _{OL1}	Low Output Voltage	Min	-1.95	-1.95	-1.565	-1.61	-1.61	V	3-7 9-14	4-7 9-15	4,6,9 11,13 15	3	8	1, 16	2	
		Max	-1.58	-1.565	-1.06	-0.84										
I _{EE}	Power Supply Current		-78	-88	-88	-88	mA						8	1, 16	8	
I _{IH}	Input Current High		245	390	390	390	μA	4,5,9 10,13, 14					8	1, 16	4,5,9,10,13,14	
I _{IH1}	Input Current High		285	455	455	455	μA	3,6,7 11,12 15					8	1, 16	3,6,7,11,12,15	
I _{IL}	Input Current Low		0.5	0.3	0.5	0.5	μA		3-7 9-15				8	1, 16	3-7,9-15	

10H560 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	VEEL
T _A = 25 °C	-0.78	-1.95	-1.10	-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	+1.07	+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 = 2.0 V, Output Load = 100 Ω to GND									
		Subgroup 9 Min	Subgroup 9 Max	Subgroup 10 Min	Subgroup 10 Max	Subgroup 11 Min	Subgroup 11 Max		PS2	V _{IN}	V _{OUT}	VCC	VEEL	PS1	P.U.T.			
t _{TLH}	Rise Time	0.55	1.8	0.75	1.9	0.55	1.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{THL}	Fall Time	0.55	1.8	0.75	1.9	0.55	1.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PLH1}	Propagation Delay (3, 5, 7, 10, 12, 14)	1.2	2.9	1.35	3.2	1.15	2.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PHL1}	Propagation Delay (3, 5, 7, 10, 12, 14)	1.45	3.0	1.7	3.4	1.4	2.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PHL2}	Propagation Delay (3, 5, 7, 10, 12, 14)	1.3	2.9	1.55	3.2	1.25	2.9	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PLH2}	Propagation Delay (3, 5, 7, 10, 12, 14)	1.4	3.2	1.55	3.6	1.35	2.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PLH1}	Propagation Delay (4, 6, 9, 11, 13, 15)	1.1	2.9	1.25	3.2	1.05	2.7	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PHL1}	Propagation Delay (4, 6, 9, 11, 13, 15)	1.15	2.7	1.35	3.2	1.1	2.6	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PHL2}	Propagation Delay (4, 6, 9, 11, 13, 15)	1.2	2.8	1.45	3.0	1.15	2.6	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			
t _{PLH2}	Propagation Delay (4, 6, 9, 11, 13, 15)	1.1	3.0	1.25	3.3	1.1	2.8	ns	4-7, 9-15	4-7, 9-15	2	1, 16	8	4-7, 9-15	2			