



MOTOROLA

Triple Line Receiver

ELECTRICALLY TESTED PER:
5962-8750201

The 10H516 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
- 125 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
AOUT	2	6	3	51 Ω to VTT
AOUT	3	7	4	51 Ω to VTT
A $\overline{\text{IN}}$	4	8	5	GND
A $\overline{\text{IN}}$	5	9	7	VBB
BOUT	6	10	8	51 Ω to VTT
BOUT	7	11	9	51 Ω to VTT
VEE	8	12	10	VEE
B $\overline{\text{IN}}$	9	13	12	GND
B $\overline{\text{IN}}$	10	14	13	VBB
VBB	11	15	14	VBB
C $\overline{\text{IN}}$	12	16	15	GND
C $\overline{\text{IN}}$	13	1	17	VBB
COUT	14	2	18	51 Ω to VTT
COUT	15	3	19	51 Ω to VTT
VCC2	16	4	20	GND

BURN - IN CONDITIONS:

VTT = -2.0 V MAX/ -2.2 V MIN

VEE = -5.7 V MAX/ -5.2 V MIN

VBB = All pins designated for VBB must be tied together, no external voltage applied.

Military 10H516

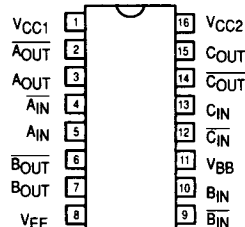


AVAILABLE AS

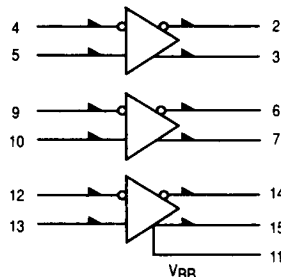
- 1) JAN: N/A
 - 2) SMD: 5962-8750201
 - 3) 883: 10H516/BXAJC
- X = CASE OUTLINE AS FOLLOWS:

PACKAGE: CERDIP: E
CERFLAT: F
LCC: 2

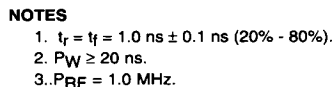
The letter "M" appears before
the slash on LCC.



LOGIC DIAGRAM



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1. All input and output cables to the scope are equal lengths of 50 Ω coaxial cable. Wire length should be ≤ 0.250 inches (6.35 mm) from TP_{IN} to input pin and TP_{OUT} to output pin.
2. Outputs not under test should be connected to a 100 Ω resistor to ground.



10H516 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 V.

Test Temperature	Test Voltage Values (Volts)									
	V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	PS ₁	PS ₂	VEE ₁	VEE ₂	VEEL	V _{CB}
T _A = 25°C	-0.78	-1.95	-1.11	-1.480	+1.11	+0.31	-5.46	-4.94	-2.94	-5.2
T _A = 125°C	-0.65	-1.95	-0.96	-1.465	+1.24	-0.36	-5.46	-4.94	-2.94	-5.2
T _A = -55°C	-0.84	-1.95	-1.16	-1.510	+1.01	+0.28	-5.46	-4.94	-2.94	-5.2

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 = 0 V, Output Load = 100 Ω to - 2.0 V									
		Subgroup 1		Subgroup 2		Subgroup 3												
		Min	Max	Min	Max	Min	Max											
VOH	High Output Voltage	-1.01	-0.78	-0.86	-0.65	-1.06	-0.84	V	4, 5, 9, 10, 12, 13	4, 5, 9, 10, 12, 13			8	1, 16			2, 3, 6, 7, 14, 15	
VOL	Low Output Voltage	-1.95	-1.58	-1.95	-1.565	-1.95	-1.61	V	4, 5, 9, 10, 12, 13, 14	4, 5, 9, 10, 12			8	1, 16			2, 3, 6, 7, 14, 15	
VOH1	High Output Voltage	-1.01	-0.78	-0.86	-0.65	-1.06	-0.84	V	4, 5, 9, 11, 12	4, 5, 9, 11, 12	4, 5, 9, 11, 12	4, 5, 9, 10, 13	8	8	1, 16	4, 5, 9, 11, 12	2, 3, 6, 7, 14, 15	
VOL1	Low Output Voltage	-1.95	-1.58	-1.95	-1.565	-1.95	-1.61	V	4, 5, 9, 11, 12	4, 5, 9, 11, 12	4, 5, 9, 11, 12	4, 5, 9, 10, 13	8	8	1, 16	4, 5, 9, 11, 12	2, 3, 6, 7, 14, 15	
VBB1	Reference Voltage**	-1.37	-1.25	-1.31	-1.15	-1.41	-1.27	V					8	1, 16			11	
IEE	Power Supply Current	-21		-23		-23		mA	4, 9, 12	5, 10, 13			8	1, 16			8	
I _{IH}	Input Current High		140		235		235	μA	4, 5, 9, 10, 12, 13	4, 5, 9, 10, 12, 13			8	1, 16			4, 5, 9, 10, 12, 13	
I _{CBO}	Input Leakage Current	-1.0		-1.0		-1.5		μA	4, 5, 9, 10, 12, 13	4, 5, 9, 10, 12, 13			8	1, 16	4, 5, 9, 10, 12, 13		4, 5, 9, 10, 12, 13	

** For V_{BB1} connect pin 5, 10, 13 to pin 11.

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	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		V _{IN}	V _{OUT}	V _{CC}	V _{EE1}	P.U.T	
t _{TLH}	Rise Time	0.4	1.35	0.4	1.5	0.4	1.25	ns	12	15	1, 16	8	2, 3, 6, 7, 14, 15	
t _{FHL}	Fall Time	0.4	1.35	0.4	1.5	0.4	1.25	ns	12	15	1, 16	8	2, 3, 6, 7, 14, 15	
t _{pHL}	Propagation Delay	0.4	1.4	0.4	1.6	0.4	1.3	ns	4	2	1, 16	8	2, 3, 6, 7, 14, 15	
t _{pLH}	Propagation Delay	0.4	1.4	0.4	1.6	0.4	1.3	ns	4	2	1, 16	8	2, 3, 6, 7, 14, 15	