



Dual 4 to 1 Multiplexer

**ELECTRICALLY TESTED PER:
5962-8750601**

The 10H574 is a Dual 4-to-1 Multiplexer. This device is a functional/pinout duplication of the standard MECL 10K part, with 100% improvement in propagation delay and no increase in power supply current.

- Propagation Delay, 1.5 ns Typical
- 440 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)
V _{CC1}	1	5	2	GND
Q ₀	2	6	3	51 Ω to V _{TT}
DO ₀	3	7	4	OPEN
DO ₂	4	8	5	OPEN
DO ₁	5	9	7	GND
DO ₃	6	10	8	GND
A	7	11	9	GND
V _{EE}	8	12	10	V _{EE}
B	9	13	12	GND
D ₁₃	10	14	13	GND
D ₁₁	11	15	14	OPEN
D ₁₂	12	16	15	GND
D ₁₀	13	1	17	OPEN
Enable	14	2	18	OPEN
Q ₁	15	3	19	51 Ω to V _{TT}
V _{CC2}	16	4	20	GND

BURN - IN CONDITIONS:

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

V_{EE} = - 5.7 V MAX/ - 5.2 V MIN

Military 10H574

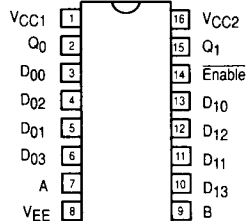


AVAILABLE AS

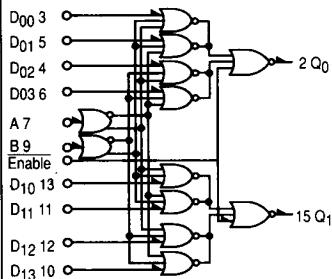
- 1) JAN: N/A
 - 2) SMD: 5962-8750601
 - 3) 883: 10H574/BXAJC
- X = CASE OUTLINE AS FOLLOWS:

PACKAGE: CERDIP: E
CERFLAT: F
LCC: 2

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



POSITIVE LOGIC DIAGRAM

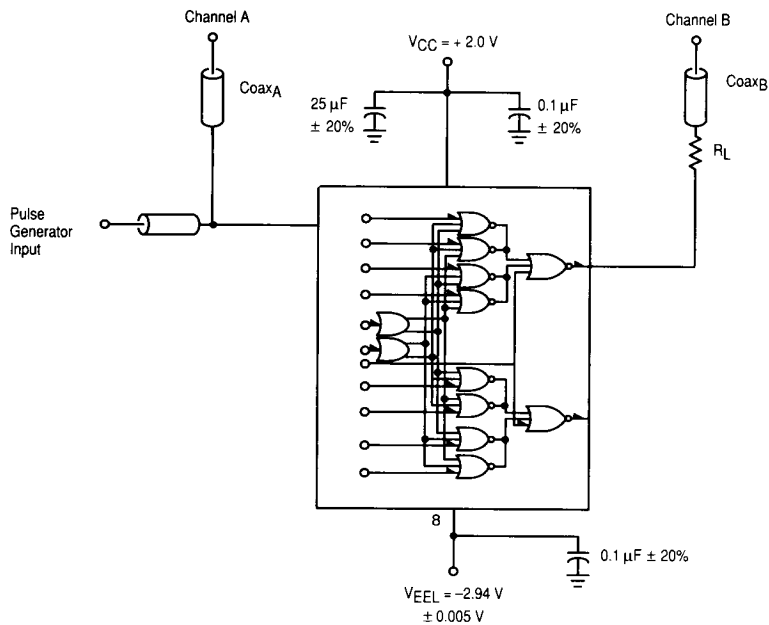


10H574
TRUTH TABLE

ENABLE	ADDRESS INPUTS		OUTPUTS	
$\bar{E}$	B	A	Q ₀	Q ₁
H	∅	∅	L	L
L	L	L	D ₀₀	D ₁₀
L	L	H	D ₀₁	D ₁₁
L	H	L	D ₀₂	D ₁₂
L	H	H	D ₀₃	D ₁₃

∅ = Don't Care

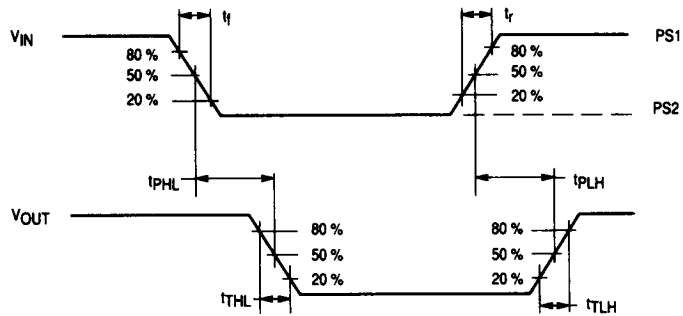
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NOTES

1. Unused outputs loaded 100 Ω to ground.
2. P_{RR} = 1.0 MHz.
3. t_r = t_f = 1.0 ns ± 0.1 ns (20% - 80%).
4. R_L = 50 Ω.
5. P_W = 20 ns.

Figure 1. Switching Test Circuit

**Figure 2. Switching Test Circuit Waveforms**

10H574 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}	P _{S1}	P _{S2}	V _{EE1}	V _{EE2}	V _{EE1}	V _{EE2}
T _A = 25 °C	-0.78	-1.95	-1.10	-1.480	+1.11	+0.31	-5.46	-4.94	-5.46	-4.94
T _A = 125 °C	-0.65	-1.95	-0.96	-1.465	+1.24	+0.36	-5.46	-4.94	-5.46	-4.94
T _A = -55 °C	-0.84	-1.95	-1.16	-1.510	+1.01	+0.28	-5.46	-4.94	-5.46	-4.94

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														
	Functional Parameters:	Min	Max	Min	Max	Min	Max		V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	V _{EE1}	V _{EE2}	V _{CC}	P.U.T.		
V _{OH}	High Output Voltage	-1.01	-0.78	-0.86	-0.65	-1.06	-0.84	V	3 - 7 9 - 14	7, 9, 14			8		1, 16	2, 15		
V _{OL}	Low Output Voltage	-1.95	-1.58	-1.95	-1.565	-1.95	-1.61	V	3, 7, 9, 13, 14	3 - 7 9 - 14			8		1, 16	2, 15		
V _{OL1}	Low Output Voltage	-1.95	-1.58	-1.95	-1.565	-1.95	-1.61	V	7, 9, 14		7, 9, 14	3 - 7 9 - 13	8	8	1, 16	2 - 4 13 - 15		
V _{OH1}	High Output Voltage	-1.01	-0.78	-1.86	-0.65	-1.06	-0.84	V	3 - 7 9 - 13		3 - 7 9 - 13	7, 9, 14	8	8	1, 16	2, 15		
I _{IH}	Power Supply Current		300		475		475	μA	3 - 7 9 - 13				8		1, 16	3 - 7, 9 - 13		
I _{IH1}	Input Current High		420		670		670	μA	14				8		1, 16	14		
I _{IL}	Input Current Low	0.5		0.3		0.5		μA		3 - 7 9 - 14			8		1, 16	3 - 7, 9 - 14		
I _{EE}	Power Supply Drain Current	-73		-80		-80		mA					8		1, 16	8		

10H574 QUIESCENT LIMIT TABLE *

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Test Temperature	Test Voltage Values (Volts)									
	V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	P _{S1}	P _{S2}	VEEL	VEE1	VEE2	
T _A = 25 °C	-0.78	-1.95	-1.10	-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					
		+ 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	P.U.T.
tTLH	Rise Time	0.5	1.7	0.5	2.0	0.4	1.65	ns	3 - 7, 9 - 14	2, 15	1, 16	8	3 - 5, 9, 11 - 13	2, 15
tTHL	Fall Time	0.5	1.7	0.5	2.0	0.4	1.65	ns	3 - 7, 9 - 14	2, 15	1, 16	8	3 - 5, 9, 11 - 13	2, 15
tPLH tPHL	Propagation Delay (A & B) note 1	1.2	2.9	1.5	3.6	1.1	2.75	ns	3 - 7, 9 - 14	2, 15	1, 16	8	3 - 5, 9, 11 - 13	2, 15
tPLH tPHL	Propagation Delay (Data X & Y) note 2	1.0	2.4	1.0	2.9	0.8	2.25	ns	3 - 7, 9 - 14	2, 15	1, 16	8	3 - 5, 9, 11 - 13	2, 15
tPLH tPHL	Propagation Delay (Enable) note 3	0.5	1.8	0.5	2.0	0.5	1.7	ns	3 - 7, 9 - 14	2, 15	1, 16	8	3 - 5, 9, 11 - 13	2, 15

Notes

1. Pins 7, 9.
2. Pins 3 - 6, 10 - 13.
3. Pins 14.