

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL,
LOW POWER, NAND GATES, MONOLITHIC SILICON

This amendment forms a part of Military Specification MIL-M-38510/20A, dated 20 November 1972, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

- * 1.2, delete (including example of part number) and substitute:

"1.2 Part number. The part number shall be in accordance with MIL-M-38510."

- * 1.2.3, Case outline letter B: Delete "1/8" and substitute "3/16".

PAGE 3

TABLE I, t_{PHL} test, maximum limits column: Device type 01, delete "140" and substitute "154"; device types 02 thru 06: Delete "90" and substitute "99".

- * After 3.7(a), add the following new paragraph:

"3.8 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 15 (see MIL-M-38510, Appendix E)."

PAGE 4

- * TABLE II, first column, fourth test requirement: Delete "Groups B and C" and substitute "Groups C and D".

TABLE II, following the electrical test requirements table: Add "* PDA applies to subgroup 1 (see 4.3(h)).".

- * 4.2: In second sentence, delete "groups A, B, and C" and substitute "groups A, B, C, and D"; and delete third sentence in its entirety.
- * 4.3(a), 4.3(b), 4.3(c), 4.3(e), and 4.3(g): Delete in their entirety.

PAGE 5

- * 4.4.1, first sentence: Delete "consist of the test subgroups and LTPD values shown in" and substitute "be in accordance with".
- * 4.4.2, 4.4.2(a), and 4.4.2(b), delete and substitute:

"4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of Method 5005 of MIL-STD-883."

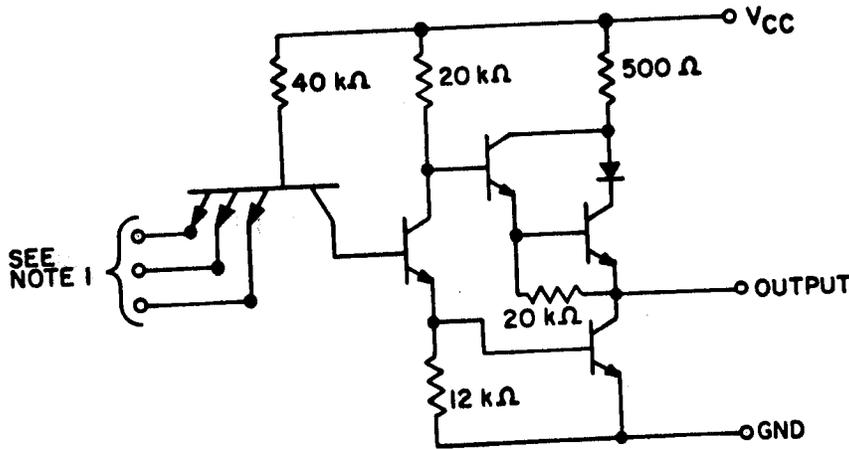
- * 4.4.3, delete and substitute:

"4.4.3 Groups C and D inspections. Groups C and D inspections shall be in accordance with tables III and IV of Method 5005 of MIL-STD-883 and as follows:"

- * 4.4.3(b), line 1: Delete "Subgroups 7 and 8" and substitute "Subgroups 3 and 4".
- * 4.4.3(c), 4.4.3(d), and 4.4.3(f): Delete in their entirety.

FIGURE 1, Logic diagram and terminal connections, device types 04 and 06: Delete "*" before device types 04 and 06 (top of page) and delete footnote "*" Device type 06 in accordance with "Case C" only." following logic diagram and terminal connections for device types 04 and 06.

FIGURE 3, Schematic circuits for device types 01 thru 05: Delete schematic B and substitute the following:



SCHEMATIC B

FIGURE 5, Switching time test circuit, device under test: Delete "BUFFER" and substitute "GATE".

FIGURES 5 and 6, Switching time test circuits: Delete waveforms on both figures and substitute the following:

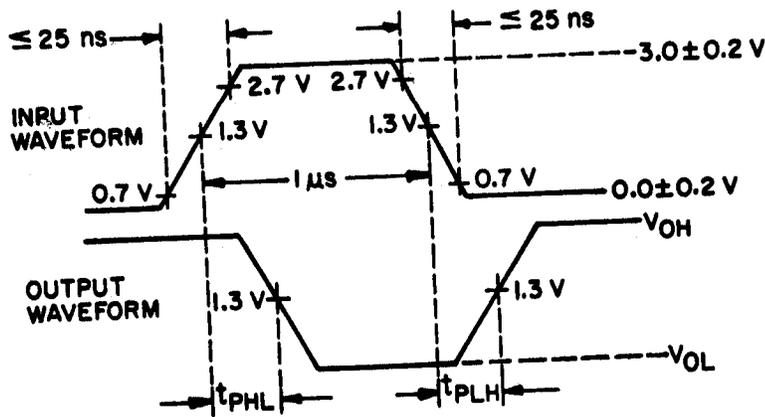


FIGURE 6, Switching time test circuit: Lead supplying V_{CC} to Gate under test should show electrically connected at intersection of V_{CC} and R_L .

PAGE 14

TABLE III, device type 01, t_{PHL}, test 37 CKT A, maximum limits column: Delete "90" and substitute "99".

TABLE III, device type 01, t_{PHL}, test 39 CKT A, maximum limits column: Delete "140" and substitute "154".

PAGE 16

TABLE III, device type 02, t_{PHL}, tests 39 CKT A and 40 CKT A, maximum limits column: Delete "60" and substitute "66".

TABLE III, device type 02, t_{PHL}, tests 43 CKT A and 44 CKT A, maximum limits column: Delete "90" and substitute "99".

PAGE 18

TABLE III, device type 03, t_{PHL}, tests 45 CKT A, 46 CKT A, and 47 CKT A, maximum limits column: Delete "60" and substitute "66".

TABLE III, device type 03, t_{PHL}, tests 51 CKT A, 52 CKT A, and 53 CKT A, maximum limits column: Delete "90" and substitute "99".

PAGE 20

TABLE III, device type 04, t_{PHL}, tests 43 CKT A, 44 CKT A, 45 CKT A, and 46 CKT A, maximum limits column: Delete "60" and substitute "66".

TABLE III, device type 04, t_{PHL}, tests 51 CKT A, 52 CKT A, 53 CKT A, and 54 CKT A, maximum limits column: Delete "90" and substitute "99".

PAGE 22

TABLE III, device type 05, t_{PHL}, tests 39 CKT A, 40 CKT A, 41 CKT A, 42 CKT A, 43 CKT A, and 44 CKT A, maximum limits column: Delete "60" and substitute "66".

TABLE III, device type 05, t_{PHL}, tests 51 CKT A, 52 CKT A, 53 CKT A, 54 CKT A, 55 CKT A, and 56 CKT A, maximum limits column: Delete "90" and substitute "99".

PAGE 23

TABLE III, device type 06: Delete and substitute TABLE III, device type 06 as shown on page 4 of this amendment.

PAGE 24

TABLE III, device type 06 - Continued: Delete and substitute TABLE III, device type 06 - Continued as shown on page 5 of this amendment.

TABLE III. Group A inspection for device type 06 - Continued.
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D				Case C				Meas. terminal				Test limits						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	Min	Max	Unit		
9 T _A =25°C	tPHL	3003 (Fig. 6)	1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	3	66	ns		
			IN	2.4 v	OUT	5.0 v	OUT	IN	2.4 v	OUT	IN	IN	2.4 v	GND							
10 T _A =125°C	tPLH		1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	3	66	ns		
			IN	2.4 v	OUT		OUT	IN	2.4 v	OUT	IN	IN	2.4 v								
11	tPHL		1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	3	66	ns		
			IN	2.4 v	OUT		OUT	IN	2.4 v	OUT	IN	IN	2.4 v								

Same tests, terminal conditions and limits as for subgroup 10, except T_A = -55°C.

MIL-M-38510/20A
AMENDMENT 2

NOTE: The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

Custodians:

Army - EL
Navy - EC
Air Force - 17
NASA - NA

Preparing activity:

Air Force - 17

Agent:

DSA - ES

Review activities:

Army - MI
Air Force - 11, 70, 99
DSA - ES

(Project 5962-0155)

User activities:

Army - SM, MU, WC
Navy - AS, OS, CG, MC
Air Force - 13, 15, 19