

Qualification requirements have been reinstated for device type 01.

INCH-POUND

MIL-M-38510/26(USAF)  
AMENDMENT 6  
12 March 1996  
SUPERSEDING  
AMENDMENT 5  
18 December 1995

MILITARY SPECIFICATION

Inactive for new design as of 6 October 1995

MICROCIRCUITS, DIGITAL, TTL, LOW POWER,  
EXCLUSIVE-OR GATES, MONOLITHIC SILICON

This amendment forms a part of Military Specification  
MIL-M-38510/26(USAF), dated 15 August 1972.

PAGE 1

1.1, delete and substitute:

"1.1 Scope. This specification covers the detail requirements for monolithic silicon, TTL, low power exclusive OR gate. Qualification requirements are removed for device type 01. For the remaining device types two product assurance classes and a choice of case outlines and lead finishes are provided and are reflected in the complete part number. All device types are inactive for new design after 6 October 1995."

\*1.1, delete and substitute:

"1.1 Scope. This specification covers the detail requirements for monolithic silicon, TTL, low power exclusive OR gate. Two product assurance classes and a choice of case outlines and lead finishes are provided and are reflected in the complete part number. All device types are inactive for new design after 6 October 1995."

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

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

PAGE 2

3.1 Detail specification. Add the following sentence, "Certification and Qualification requirements have been removed for device type 01."

\*3.1 Detail specification. Delete the following sentence, "Certification and Qualification requirements have been removed for device type 01."

PAGE 3

TABLE I,  $I_{IH2}$  test, maximum limits column: Delete "80" and substitute "100".  
TABLE I,  $I_{IL}$  test, minimum limits column: Add "-120"; maximum limits column: delete "-0.36" and substitute "-360"; units column: delete "mA" and substitute " $\mu$ A".  
TABLE I,  $I_{OS}$  and  $I_{CCH}$  tests, conditions column: Delete "2".  
TABLE I  $t_{PHL1}$  test, maximum limits column: delete "165" and substitute "275".  
TABLE I  $t_{PHL2}$  test, maximum limits column: delete "80" and substitute "110".  
TABLE I  $t_{PLH1}$  test, maximum limits column: delete "180" and substitute "250".  
TABLE I  $t_{PLH2}$  test, maximum limits column: delete "110" and substitute "150".

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TABLE II, test requirement column: Delete "Groups B and C end point electrical parameters (Method 5005)" and substitute "Groups C and D end point electrical parameters (Method 5005)".

- 3.7 Marking. Add the following sentence "The JAN or J certification mark shall not be used for device type 01."
- \*3.7 Marking. Delete the following sentence, "The JAN or J certification mark shall not be used for device type 01."
- 4.2 Qualification inspection. Add the following sentence, "Qualification inspection is not required for device type 01."
- \*4.2 Qualification inspection. Delete the following sentence, "Qualification inspection is not required for device type 01."
- 4.2, second sentence: Delete "A, B, and C" and substitute "A, B, C, and D". Delete third sentence.
- 4.3: Delete subparagraphs (a), (b), (c), (e), and (g).

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, delete and substitute:  
"Group B inspection. Group B inspection shall be in accordance with table II of Method 5005 of MIL-STD-883."
- 4.4.3: Delete title "Group C inspection" and substitute "Groups C and D inspections". Delete first sentence and substitute "Groups C and D inspections shall be in accordance with tables III and IV of Method 5005 of MIL-STD-883 and as follows:" Delete subparagraphs (c), (d), and (f). Subparagraph (b): Delete "Subgroups 7 and 8" and substitute "Subgroups 3 and 4".

PAGE 6

FIGURE 1, logic diagram and terminal connections: Delete and Substitute the following:

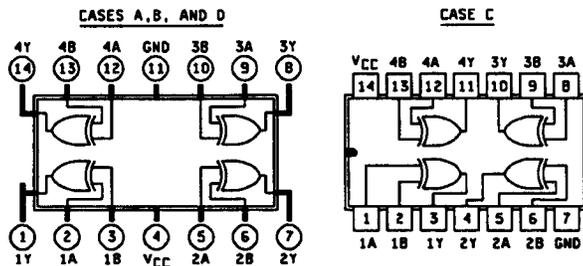
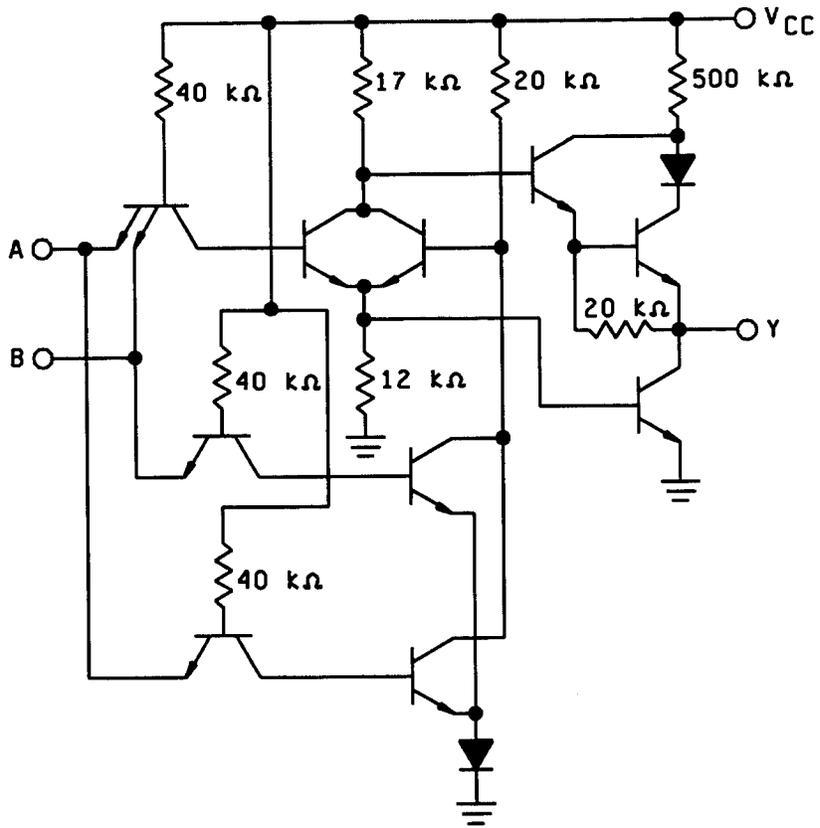


FIGURE 3, schematic circuit: Add "circuit: Add "circuit A" after schematic circuit; add new circuit (B) as shown on page 3 of this amendment.

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NOTE: All resistance values are nominal.  
FIGURE 3. Schematic circuit - circuit B.

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FIGURE 5, switching time test circuit: Delete and substitute figure 5 as shown on page 4 of this amendment.

TABLE III, tests 31 and 32, column 3A: Add "GND".

TABLE III, tests 25 thru 32, maximum limits column: Delete "80" and substitute "100".

TABLE III, tests 33 thru 40, maximum limits column: Delete ".36 mA" and substitute ".360  $\mu$ A".

TABLE III, tests 48 thru 51, maximum limits column: Delete "105" and substitute "165".

TABLE III, tests 52 thru 55, maximum limits column: Delete "50" and substitute "66".

TABLE III, tests 56 thru 59, maximum limits column: Delete "115" and substitute "150".

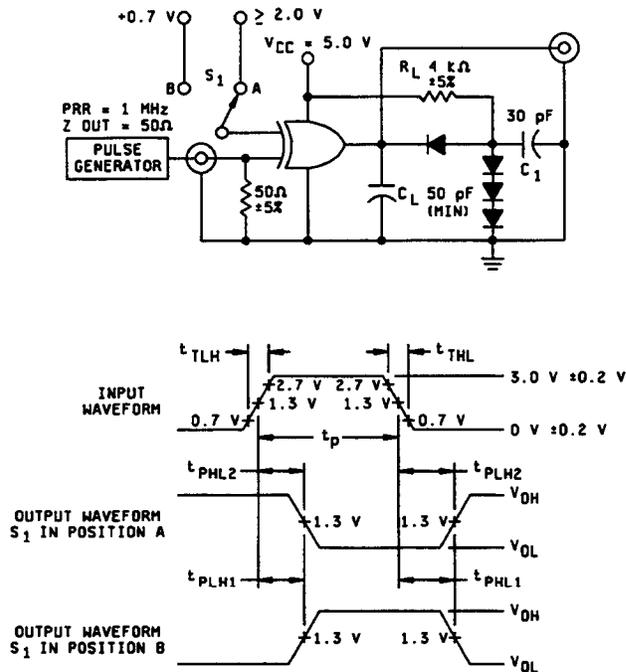
TABLE III, tests 60 thru 63, maximum limits column: Delete "70" and substitute "90".

TABLE III, tests 64 thru 67, maximum limits column: Delete "165" and substitute "275".

TABLE III, tests 68 thru 71, maximum limits column: Delete "80" and substitute "110".

TABLE III, tests 72 thru 75, maximum limits column: Delete "180" and substitute "250".

TABLE III, tests 76 thru 79, maximum limits column: Delete "110" and substitute "150".



NOTES

1. The generator has the following characteristics:  $V_{gen} = 3 V$ ,  $t_{TLH} = t_{THL} \leq 25 ns$ ,  $t_p = 1.0 \mu s$ ,  $PRR \leq 500 kHz$ ,  $Z_{out} = 50\Omega$ .
2. All diodes are 1N3064, or equivalent.
3.  $C_L$  includes probe and jig capacitance.
4. Each gate tested separately.

FIGURE 5. Switching time test circuit.

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6.2 Delete in its entirety, and replace as follows: "intended use. Microcircuits conforming to this specification are intended for Government microcircuit applications (original equipment) and logistic purposes. Device type 03 is intended for use for logistic support of existing equipment."

\*6.2 Intended use. Delete the following sentence, "Device type 03 is intended for use for logistic support of existing equipment."

6.3 Ordering data. Paragraphs d - e, delete and replace as follows,

"d. Requirements for notification of change of product or process to the contracting activity for device type 01. In addition, to the notification to the qualifying activity for device type 01 if applicable."

"e. Requirements for packaging and packing, device type 01. Requirement for product assurance options."

\*6.3 Ordering data. Paragraphs d and e, delete in its entirety from previous amendment and replace as follows:

"d. Requirements for notification of change of product or process to procuring activity in addition to notification to qualifying activity, if applicable."

"e. Requirements for packaging and packing, if other than level C of MIL-M-55565."

6.5, delete and substitute:

"6.5 Logistic support. Lead materials and finishes (see 3.3), are interchangeable. Unless otherwise specified, microcircuits procured to Government logistic support will be procured to device class B (see 1.2.2), and lead material and finish C (see 3.3). Longer length leads and lead forming shall not affect the part number."

6.6 Delete in its entirety and replace as follows:

"6.6 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information shall not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-M-38510.

Military device type

Generic-industry type

01 1/

54L86

1/ Qualification requirements removed for this device type."

\*6.6 Substitutability. Delete in its entirety from previous amendment and replace as follows:

"Substitutability. Microcircuits covered by this specification are substitutable for commercial device type 54L86."

NOTE: The margins of this amendment are marked with an asterisk to indicate where changes 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.

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Custodian:  
Air Force - 17

Review activities:  
Air Force - 11, 17, 85

Preparing activity:  
DLA-ES

(Project 5962-1618)