MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, SCHOTTKY TTL,
1024 BIT RANDOM ACCESS MEMORY (RAM),
MONOLITHIC SILICON

This amendment forms a part of MIL-M-38510/231B, dated 2 April 1982, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

1.1, second sentence: Delete "Three" and substitute "Two".

PAGE 2

* 1.2.3, Case outline, Letter column, after X: Add "2/".

* 1.2.3, add the following new case outline:

Letter	Case outline (see MIL-M-38510, appendix C)
"K	F-6 (24-lead, 3/8" x 5/8"), flat package"

1.3, Thermal resistance, delete in its entirety and substitute the following:

"Thermal resistance, junction-to-case (θ_{JC}): See MIL-M-38510, appendix C".

* Bottom of page, add the following new footnote:

"2/ This package is no longer available, do not use for new design."

PAGE 4

* TABLE I, Data setup time prior to write, TDCWL, Device type column, after 14: Add ",15"; after 13 delete ",15".

PAGE 5

* TABLE I, Chip select setup time prior to write, TSVWL, Device type column, after 14: Add ",15"; after 13 delete ",15".

The attached insertable replacement pages listed below are replacements for stipulated pages. When the new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

Replacement page	Page replaced
7	7
8	8

PAGE 6

3.6, delete the following:

"At the option of the manufacturer, marking of the country of origin may be omitted from the body of the microcircuit, but shall be retained on the initial container."

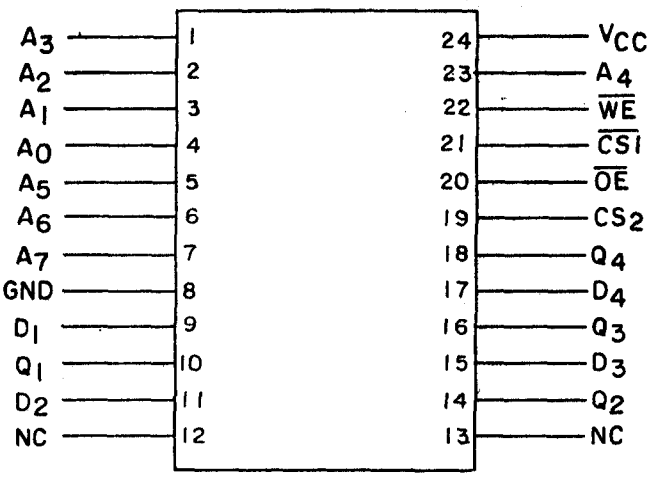
TABLE II, Class C devices column: Delete in its entirety.

TABLE II, Group A test requirements, Class B devices column: Add "8".

PAGE 10

* FIGURE 2, add the following new Case K terminal connection diagram:

" Device types 09, 10, 11, 12, 14, and 15
Case K



"

PAGES 36 THROUGH 43

* TABLE III, column headings, delete and substitute as follows:

"

Case W	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Cases X and K	1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24
Case Y	1	2	3	4	5	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
	A_3	A_2	A_1	A_0	A_5	A_6	A_7	GND	D_1	Q_1	D_2	Q_2	D_3	Q_3	D_4	Q_4	CS_2	$\overline{OE}$	$\overline{CS_1}$	$\overline{WE}$	A_4	V_{CC}

"

PAGE 36

TABLE III, test number 57: Add "GND" to all pin columns except columns Q_1 through Q_4 and the V_{CC} column.

PAGE 39

TABLE III, test number 69: Add "GND" to all pin columns except columns Q_1 through Q_4 and the V_{CC} column.

PAGE 40

TABLE III, test number 57: Add "GND" to all pin columns except columns Q_1 through Q_4 and the V_{CC} column.

PAGE 43

TABLE III, test number 69: Add "GND" to all pin columns except columns Q_1 through Q_4 and the V_{CC} column.

PAGES 46 THROUGH 49

* TABLE III, column headings, delete and substitute as follows:

"

Case W	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Cases X and K	1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24
Case Y	1	2	3	4	5	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
	A_3	A_2	A_1	A_0	A_5	A_6	A_7	GND	D_1	Q_1	D_2	Q_2	D_3	Q_3	D_4	Q_4	CS_2	$\overline{OE}$	$\overline{CS_1}$	$\overline{WE}$	A_4	V_{CC}

"

PAGE 47

TABLE III, test number 69: Add "GND" to all pin columns except columns Q_1 through Q_4 and the V_{CC} column.

PAGE 49

* TABLE III, TDCWL, test number 80, Min limits column: Delete "10" and substitute "5".

* TABLE III, TSVWL, test number 83, Min limits column: Delete "10" and substitute "5".

PAGE 50

Footnote 3/, delete in its entirety and substitute the following:

"3/ The functional tests shall verify the truth table of figure 3. All bits shall be tested. Terminal conditions shall be as follows:

a. Inputs: H = 2.4 V, L = 0.4 V.

b. Outputs: Output voltage shall be H $\geq$ 1.5 V and L < 1.5 V, when using a high-speed checker single comparator.

c. The functional tests shall be performed with V_{CC} = 4.5 V and V_{CC} = 5.5 V."

PAGE 51

4.4.3b: Delete in its entirety.

4.4.3c (1): Delete "or E".

6.1: Delete in its entirety.

6.3e: Delete in its entirety.

PAGE 53

6.6, Generic-industry type: Delete "93415, 82S10" and substitute "93415"; also delete "93425A, 82S11" and substitute "93425A".

The margins of this amendment are marked with asterisks 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 - ER
Navy - EC
Air Force - 17

Review activities:
Army - MI
Air Force - 11, 19, 85, 99
DLA - ES

User activities:
Army - AR, SM
Navy - AS, CG, MC, OS, SH

Preparing activity:
Air Force - 17

Agent:
DLA - ES

(Project 5962-1029)

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test (method 1015 of MIL-STD-883).

(1) Test condition D, using the circuit shown on figure 5, or equivalent.

(2) T_A = 125°C minimum.

b. Interim and final electrical tests shall be as specified in table II, except interim electrical tests prior to burn-in are optional at the discretion of the manufacturer.

c. The percent defective allowable (PDA) shall be as specified in MIL-M-38510.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.3.1 Qualification extension. When authorized by the qualifying activity, for qualification inspection, if a manufacturer qualifies to a faster device type which is manufactured identically to a slower device type on this specification, then the slower device type may be part I qualified by conducting only group A electrical tests and any electricals specified as additional group C subgroups and submitting data in accordance with MIL-M-38510, appendix D (i.e., groups B, C, and D tests are not required).

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table I of method 5005 of MIL-STD-883 and as follows:

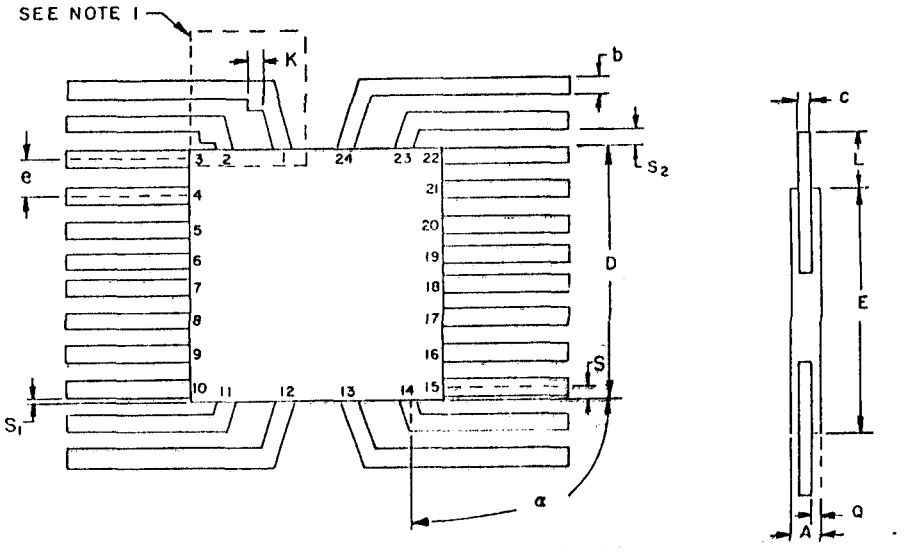
a. Test requirements shall be as specified in table II herein.

b. Subgroups 4, 5, and 6 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883 and as follows:

a. For class S the electrical tests shall be as specified in table II herein.

b. Steady-state life test for class S devices shall be in accordance with table IIa of method 5005 of MIL-STD-883 using a circuit submitted to the qualifying activity for approval. If the alternate burn-in conditions are used, the circuit on figure 5 or equivalent shall be used.



Symbol	Inches		Millimeters		Notes
	Min	Max	Min	Max	
A	.045	.090	1.14	2.29	
b	.015	.019	0.38	0.48	5
c	.003	.006	0.08	0.15	5
D		.440		11.18	3
E	.360	.420	9.14	10.67	
E_1		.440		11.18	3
e	.050 BSC		1.27 BSC		4,6
k	.015 TYP		.38 TYP		9
L	.250	.370	6.35	9.40	
Q	.010	.040	.25	1.02	2
S		.045		1.14	7
S_1	.000		0.00		8
S_2	.004		0.10		10
α	30°	90°	30°	90°	11,12

NOTES:
1. Index area; a notch or a pin one identification mark shall be located adjacent to pin one and shall be located within the shaded area shown. The manufacturer's identification shall not be used as a pin one identification mark. Alternatively, a tab (dimension k) may be used to identify pin one.
2. Dimension Q shall be measured at the point of exit of the lead from the body. Dimension Q shall be .0085 (0.216 mm) minimum when lead finish A is applied.
3. This dimension allows for off-center lid, meniscus and glass overrun.
4. The basic pin spacing is .050 (1.25 mm) between centerlines. Each pin centerline shall be located within ±.005 (0.13 mm) of its exact logitudinal position relative to pins 1 and 24.
5. All leads - Increase maximum limit by .003 (0.08 mm) measured at the center of the flat, when lead finish A is applied.
6. Twenty-two spaces.
7. Applies to all four corners (leads number 3, 10, 15, and 22).
8. Dimension S_1 (MIL-M-38510, appendix C) may be .000 (0.00 mm) if leads number 3, 10, 15, and 22 bend toward the cavity of the package within one leads width from the point of entry of the lead into the body. (MIL-M-38510, appendix C), figure C-4 shall apply for bottom or side brazed lead configurations.
9. Optional, see note 1. If a pin one identification mark is used in addition to this tab, the minimum limit of dimension k does not apply.
10. Applies to leads number 2, 11, 14, and 23.
11. Lead configuration is optional within dimension E except dimensions b and c apply (MIL-M-38510, appendix C).
12. Applies to leads number 1, 2, 11, 12, 13, 14, 23, and 24.

THIS PACKAGE NO LONGER AVAILABLE, DO NOT USE FOR NEW DESIGN

FIGURE 1. Case outline X (24 lead, 3/8" x 3/8" flat package).