INCH-POUND

MIL-M-38510/754A
AMENDMENT 2
25 July 2002
SUPERSEDING
AMENDMENT 1
29 December 1992

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, ADVANCED CMOS, LATCHES, MONOLITHIC SILICON

Inactive for new design after 9 August 1996

This amendment forms a part of MIL-M-38510/754A, dated 29 June 1992, and is approved for use by all Departments and Agencies of the Department of Defense.

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*1.2.3, delete in its entirety and replace with:

"1.2.3 Case outline(s). The case outlines are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
R	GDIP1-T20 or CDIP2-T20	20	Dual-in-line
S	GDFP2-F20 or CDFP3-F20	20	Flat pack
Z	GDFP1-G20	20	Flat pack with gull wing
2	CQCC1-N20	20	Square leadless chip carrier"

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4.2b.3, delete and substitute:

"3. V_{CC} = 5.5 V +0.5 V, -0.00 V."

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4.2c.3, delete and substitute:

"3. V_{CC} = 5.5 V +0.5 V, -0.00 V."

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*FIGURE 1; add case outline "Z" under device type "03" next to case outlines "R, S, 2".

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

4.4.5, delete and substitute:

" 4.4.5 Group E inspection. Group E inspection is required only for parts intended to be marked as radiation hardness assured (see 3.5 herein). RHA levels for device classes B and S shall be M, D, R, and H. RHA quality conformance inspection sample tests shall be performed at the RHA level specified in the acquisition document.

a. End-point electrical parameters shall be as specified in table II herein.

b. For device classes B and S, subgroups 1 and 2 in table V, method 5005 of MIL-STD-883 shall be tested as appropriate for device construction.

c. When specified in the purchase order or contract, a copy of the RHA delta limits shall be supplied.

d. RHA tests for device classes B and S for levels M, D, R, and H shall be performed through each level to determine at what levels the devices meet the RHA requirements. These RHA tests shall be performed for initial qualification and after design or process changes which may affect the RHA performance of the device.

e. Prior to irradiation, each selected sample shall be assembled in its qualified package. It shall pass the specified group A electrical parameters in table I for subgroups specified in table II herein.

f. For device classes B and S, the devices shall be subjected to radiation hardness assured tests as specified in MIL-M-38510 for the RHA level being tested. All device classes must meet the postirradiation end-point electrical parameter limits as defined in table I at T_A = +25°C ±5°C, after exposure, to the subgroups specified in table II herein.

4.4.5.1 Total dose irradiation testing. Total dose irradiation testing shall be performed in accordance with MIL-STD-883, method 1019, and as specified herein. Prior to and during total dose irradiation characterization and testing, the devices for characterization shall be biased so that 50 percent are at inputs high and 50 percent are at inputs low, and the devices for testing shall be biased to the worst case condition established during characterization. Devices shall be biased as follows:

a. Inputs tested high, V_{CC} = 5.5 V dc +5%, R_{CC} = 10Ω +20%, V_{IN} = 5.0 V dc +5%, R_{IN} = 1 kΩ +20%, and all outputs are open.

b. Inputs tested low, V_{CC} = 5.5 V dc +5%, R_{CC} = 10Ω +20%, V_{IN} = 0.0 V dc, R_{IN} = 1 kΩ +20%, and all outputs are open.

4.4.5.1.1 Accelerated aging test. Accelerated aging shall be performed on class B and S devices requiring an RHA level greater than 5K rads (Si). The post-anneal end point electrical parameter limits shall be as specified in table I herein and shall be the preirradiation end point electrical parameter limit at 25°C ±5°C. Testing shall be performed at initial qualification and after any design or process changes which may effect the RHA response of the device."

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.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 11
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

Review activities:

Army - AR, MI, SM
Navy - AS, CG, MC, OS, SH
Air Force - 19, 99

(Project 5962-1927)