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MIL-C-5E
AMENDMENT 4
21 September 1998
SUPERSEDING
AMENDMENT 3
11 June 1998

MILITARY SPECIFICATION

CAPACITORS, FIXED, MICA DIELECTRIC,
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-C-5E, dated 27 May 1975, and is approved for use by all Departments and Agencies of the Department of Defense.

TABLE I, add:

"

Symbol	Temperature coefficient	Capacitance drift
H	-500 to +500	Not specified

"

PAGE 3

2.1, SPECIFICATIONS, MILITARY, delete "MIL-C-39028" and "MIL-C-45662", and corresponding titles.

2.1, STANDARDS, MILITARY, delete "MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes."

2.2, delete and substitute:

"2.2 Non-Government publications. The following documents form a part of this document to the extent specified - herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/J-STD-006 - Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications, Requirements for.
ANSI/NCSL Z540-1 - Laboratories, Calibration, and Measuring and Test Equipment.

INTERNATIONAL ORGANIZATION FOR STANDARDS (ISO)

ISO 10012-1 - Equipment, Quality Assurance Requirements for Measuring - Part 1: Meteorological Confirmation System for Measuring Equipment.

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.)"

PAGE 4

3.4.3, delete.

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PAGE 5

3.6, title, delete and substitute:

"Barometric pressure (Qualification inspection only)."

PAGE 10

4.1.1, delete and substitute:

"4.1.1 Test equipment and inspection facilities. The supplier shall establish and maintain a calibration system in accordance with ANSI/NCSL Z540-1, ISO-10012-1, or equivalent system."

4.5.1, delete and substitute:

"4.5.1 Inspection of product for delivery. Inspection of product for delivery shall consist of group A and group B inspection."

PAGE 12

4.5.1.1, delete first three sentences and substitute:

"An inspection lot, as far as practicable, shall consist of capacitors in one or more styles. The sample selected from the lot shall be representative of the styles in the lot. Styles may be grouped as follows:"

* TABLE IX, delete and substitute:

"TABLE IX. Group A inspection.

Examination or test	Requirement paragraph	Method paragraph	Sampling procedure
Visual and mechanical examination:		4.6.1	
Material	3.1, 3.3 to 3.3.4 inclusive		
Body dimensions	3.4		13 samples 0 failures
Design and construction (other than dimensions)	3.4 to 3.4.4 inclusive		
Marking 1/	3.19 to 3.19.3 inclusive		
Workmanship	3.20 to 3.20.2 inclusive		
Dielectric withstanding voltage	3.5	4.6.2	
Insulation resistance (at room ambient temperature)	3.7	4.6.4.1	See 4.5.3.1
Dissipation factor	3.8	4.6.5	
Capacitance	3.9	4.6.6	
Current rating (potted and cast epoxy capacitors only)	3.10	4.6.7.2	

1/ Marking defects are based on visual examination only. Any subsequent electrical defects shall not be used as a basis for determining marking defects. "

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* 4.5.3.1, delete and substitute:

"4.5.3.1 Sampling plan. A sample of parts shall be randomly selected in accordance with table IX-1. If one or more defects are found, the lot shall be rescreened and defects removed. After screening and removal of defects, a new sample of parts shall be randomly selected in accordance with table IX-1. If one or more defects are found in the second sample, the lot shall be rejected and shall not be supplied to this specification."

* Add TABLE IX-1 after TABLE IX:

"Table IX-1. Sampling plans for group A electrical inspection.

LOT SIZE	Sample size
2 to 8	100 percent
9 to 150	13
151 to 280	20
281 to 500	29
501 to 1,200	34
1,201 to 3,200	42
3,201 to 10,000	50
10,001 to 35,000	60
35,001 to 150,000	74
150,001 to 500,000	90
500,001 and over	102

"

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* TABLE X, delete and substitute:

"TABLE X. Group B inspection.

Test	Requirement paragraph	Method paragraph	Sampling procedure
Insulation resistance (at high ambient temperature) 1/	3.7	4.6.4.2	
Temperature coefficient and capacitance drift 1/	3.17	4.6.14.2 to 4.6.14.2.2 inclusive	5 samples 0 failures
Low-temperature storage and life (performance check) 1/	3.18.1	4.6.15.2.1	

1/ If the manufacturer can demonstrate that this test has been performed five consecutive times with zero failures, the frequency of this test, with the approval of the qualifying activity, can be performed every two years. If the design, material, construction, or processing of the part is changed, or if there are any quality problems or failures, the qualifying activity may require resumption of the original test frequency."

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* 4.5.4.1.1, delete and substitute:

"4.5.4.1.1 All styles (except cast epoxy case units, see 3.1). A sample of parts shall be randomly selected in accordance with table X. If one or more defects are found, the lot shall be rescreened and defects removed. After screening and removal of defects, a new sample of parts shall be randomly selected in accordance with table X. If one or more defects are found in the second sample, the lot shall be rejected and shall not be supplied to this specification."

PAGE 13 - 14

4.5.5 and table XI, delete.

PAGE 15

4.5.6, delete and substitute:

"4.5.6 Retention of qualification. To retain qualification, the manufacturer shall forward, at 6-month intervals, a summary of the results of groups A and B tests to the qualifying activity. As a minimum, the summary shall include the number of lots which failed, number of lots which passed and tests performed during that 6-month period. If the summary of the test results indicates nonconformance with specification requirements, action shall be taken to remove the failing product from the qualified products list. Failure to submit the summary shall result in loss of qualification for that product. The supplier shall also notify the qualification activity at any time during the 6-month period that the inspection data indicates failure of the qualified product to meet the requirements of the specification.

In the event that there is no production of a single style device during a reporting period and the manufacturer is listed for more than one style on the QPL, a report shall be submitted certifying that the manufacturer still has the capabilities and facilities necessary to produce that product. If during three consecutive reporting periods there has been no production of a given style, the manufacturer may be required, at the discretion of the qualifying activity, to submit a representative product of that style to testing.

PAGE 15

4.5.7, delete.

PAGE 16

4.6.3, title, delete and substitute:

"Barometric pressure (Qualification inspection only) (see 3.6)."

4.6.5, second sentence, delete and substitute:

"Measurement accuracy for direct reading methods shall be within ±2 percent of the readout or ±0.0005 dissipation factor, whichever is greater. If obtaining dissipation factor measurements by an indirect method, an analysis should be made to show that the calculated value is within the specified limits when considering the worst case error stated by the measurement accuracy of the measurement instrument."

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PAGE 19

4.6.14.1, last two sentences, delete and substitute:

"The measurement at each temperature shall be recorded when two successive readings taken at 5 minute intervals are within ±(0.025 percent of nominal capacitance ±0.05 pF) of each other. The second reading is then taken as the capacitance at the specified test temperature."

PAGE 20

5, delete and substitute:

"5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order. When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity."

PAGE 21

6.3, delete and substitute:

"6.3 Qualification (see 3.2). With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List, whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from the Defense Supply Center Columbus (DSCC-VQP), 3990 East Broad Street, Columbus, OH 43213. Application for qualification tests shall be made in accordance with SD-6, "Provisions Governing Qualification" (see 6.3.1).

6.3.1 Copies of SD-6. Copies of SD-6, "Provisions Governing Qualification" may be obtained upon application to Defense Automated Printing Service, Bldg. 4D (DPM-DODSSP), 700 Robbins AVE, Philadelphia PA 19111-5094."

PAGE 22

6.5, delete.

PAGE 23

20.3 and 20.4, delete.

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TABLE XIV, qualification group A heading, delete "CM14"; qualification group D heading, add "CM14"; group D, under number of specimens and type designation add the following:

"12 CM14HH103J03
12 CM14HP224J03"

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 - CR
Navy - EC
Air Force - 85

Review activities:
Navy - AS, CG, MC, OS
Air Force - 17, 19, 99
Army - CR4

Preparing activity:
DLA - CC

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