

MILITARY SPECIFICATION

CAPACITORS, FIXED, METALLIZED (PAPER, PAPER-PLASTIC OR PLASTIC FILM)
 DIELECTRIC, DIRECT CURRENT
 (HERMETICALLY SEALED IN METAL CASES),
 GENERAL SPECIFICATION FOR

This amendment forms a part of Military Specification MIL-C-18312E, dated 8 January 1970, and is approved for use by all Departments and Agencies of the Department of Defense.

Page 1

1.1, line 3: After "cases", delete the period and add "and removable mounting brackets for use with style CH72 capacitors."

TABLE I, delete and substitute:

TABLE I. Terminals.

Symbol	Description
A - - - - -	Axial wire-lead
B - - - - -	Solder lug (nonremovable)
E - - - - -	Pillar insulator with threaded stud and nuts

Page 2

Following 1.2.1.7, add:

"1.2.2 Type designation for brackets. The type designation shall be in the following form, and as specified (see 3.1):

<u>CM72</u>	<u>F</u>	<u>A1</u>
Bracket designator (1.2.2.1)	Design (1.2.2.2)	Case size (1.2.2.3)

"1.2.2.1 Bracket designator. Brackets for style CH72 capacitors covered by this specification are identified by the symbol CM72.

"1.2.2.2 Design. The design of the footed bracket is identified by the letter 'F' and of the spade lug bracket by the letter 'S'.

"1.2.2.3 Case size. The case-size designation corresponds to the case size, as specified (see 3.1)."

Page 3

*2.1: In list of Military Specifications, delete "MIL-R-39034" (with corresponding title); also add the following:

"MIL-C-25 - Capacitors, Fixed, Paper-Dielectric, Direct Current
 (Hermetically Sealed in Metal Cases), General Specification
 For.

Page 3 - Continued

"MIL-C-39022 - Capacitors, Fixed, Metallized, Paper-Plastic Film, or Plastic Film Dielectric, Direct and Alternating Current (Hermetically Sealed in Metal Cases), Established Reliability, General Specification For."

Page 4

3.4, line 1: After "capacitor", add "and brackets, as applicable,".

Page 5

3.11, line 1: After "capacitors", add "and brackets, as applicable,".

Page 6

3.12, line 1: After "capacitors", add "and brackets, as applicable,".

*3.13: In title, delete "Temperature cycling" and substitute "Thermal shock" (make this same change wherever "Temperature cycling" appears in this specification): in line 1, after "capacitors", add "and brackets, as applicable,"; and in line 19, after "capacitors", add "and brackets, as applicable,".

3.16, line 1: After "capacitors", add "and brackets, as applicable,".

Page 7

3.16, line 8: After "capacitors", add "and brackets, as applicable,".

Following 3.21, add:

"3.21.1 Bracket identification marking. Brackets shall be marked with the type designation (see 1.2.2), and the manufacturer's name or code symbol. When two type designations are applicable to the same bracket, both designations shall be marked on the bracket.

* "3.21.2 CH09 and CH12 style marking only. An established reliability (ER) part manufactured in accordance with MIL-C-39022 may be marked and furnished as a non-ER part, if produced on the same assembly line or lines, and provided it is subjected to and meets all the inspection requirements of the ER part."

Page 8

3.22, line 1: After "capacitors", add "and brackets, as applicable,".

Following 3.22.2, add:

"3.22.3 Riveting. The riveting operation shall be performed carefully to assure that the rivet is tight and satisfactorily headed."

4.4.1, line 1: After "capacitors", add "and brackets, as applicable,".

Page 9

Following 4.4.2.2, add:

"4.4.2.3 Bracket submission. Sample brackets shall be subjected to the examination and tests specified in table VIa, in the order shown. Two sample units of each type represented in a sample shall be subjected to group 1 examinations, and the remaining brackets shall be divided into test groups as specified in table VIa and subjected to the tests for their particular group. Each type of bracket shall be equally represented in each test group. During these tests, one set of each bracket type shall support a capacitor of the same designation with which it is normally used (see 3.1). Tests on brackets may be run concurrently with those

specified for capacitors in 4.4.2. Each bracket will be considered as a sample unit for the purpose of determining failure.

TABLE VIa. Qualification inspection for brackets.

Examination or test	Requirement paragraph	Method paragraph	Number of sample units to be inspected	Number of failures ^{1/}
<u>Group I</u>				
Visual and mechanical examination - - - - -	3.1, 3.3, and 3.4	4.6.1	} 2	} 1
Marking - - - - -		4.6.1		
Workmanship (external) - - -		4.6.1		
	3.22, 3.22.2, and 3.22.3			
<u>Group II</u>				
Vibration - - - - -	3.11	4.6.8.1	} 12	} 1
Salt spray (corrosion) - - -	3.12	4.6.9		
Thermal shock and immersion -	3.13	4.6.10		
<u>Group III</u>				
Moisture resistance - - - - -	3.16	4.6.13	12	1

^{1/} A sample unit having one or more defects will be considered as a failure."

4.4.3, delete and substitute:

"4.4.3 Failures. Failures in excess of those allowed in table VI and VIa shall be cause for refusal to grant qualification approval."

*4.5.1.1, delete and substitute:

"4.5.1.1 Inspection lot. An inspection lot shall consist of all capacitors of the same group and of the same characteristic (see 1.2.1.4), produced under essentially the same conditions and offered for inspection at one time. The sample selected from the lot shall be representative of the styles in the lot. All styles and voltage ratings may be combined by characteristic as indicated in table VII."

*TABLE VII, delete and substitute:

" TABLE VII. Inspection lot groups.

Group	Characteristic symbol
1	R
2	N

*4.5.2.1.1, line 2: Delete "each month" and substitute "every 2 months."

Page 12

4.6.1, line 1: After "capacitors", add "and brackets, as applicable,".

Page 14

4.6.8.1, line 1: After "Capacitors", add "and brackets, as applicable,".

4.6.9, line 1: After "Capacitors", add "and brackets, as applicable,".

Page 15

4.6.9, line 1: After "capacitors", add "and brackets, as applicable,".

*4.6.10.1, delete and substitute:

"4.6.10.1 Thermal shock. Capacitors and brackets shall be tested in accordance with method 107 of MIL-STD-202, with the following exceptions:

- (a) Test condition A shall apply, except that step 3 shall be as specified (see 3.1).
- (b) No measurements shall be made before or after cycling."

4.6.10.2, line 1: After "capacitors", add "and brackets, as applicable,".

Page 16

4.6.13, line 1: After "Capacitors", add "and brackets, as applicable,".

Following 4.6.13(d), add:

"(e) Visual examination - After this test, capacitors and brackets, as applicable, shall be visually examined for corrosion and obliteration of marking."

Page 19

6.7, delete and substitute:

"6.7 Supersession data. Specification sheet MIL-C-18312/1 has been canceled. Recommended substitute item may be selected from style CH09 covered by MIL-C-18312/2."

Page 21

10.1, line 2: After "capacitors", add "and brackets, as applicable,".

20.1, line 2: After "table VI", add "and VIa."

TABLE XII, delete and substitute:

"TABLE XII. Specimens for complete qualification submission.

Qualification group	Style	Parts to be submitted	Quantity for complete qualification groups
A (operating temperature range -55 to +85°C)	CH09	CH09A1RA183K	25
		CH09A1RA126K	25
B (operating temperature range -55 to +125°C)	CH09 CH12	CH09A1NC104K	25
		CH12A1NF225K	25
C	CH53 CH54	CH53B1NF475K	25
		CH54B1NV475K	25
E	CH72	CH72E1NV156K	25
		CH72E1NF226K	25

Following 20.5, add:

"20.6 Bracket submissions. A sample consisting of 26 sample units of the design or designs for which qualification is sought shall be submitted. Bracket submissions of 13 each CH072SC14 and CH072FB4 will confer eligibility for qualification of all case size designations for both designs. Single design submission (26 sample units) will confer eligibility for the case size submitted and all smaller sizes of the specific design submitted. Complete qualification for CH072 brackets will be automatically granted to suppliers currently qualified to produce brackets CP072SE2 and CP072FE2 in accordance with MIL-C-25."

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.

Custodians:

Army - EL
 Navy - EC
 Air Force - 11

Preparing activity:

Navy - EC

Agent:

DSA - ES

Review activities:

Army - EL, MU
 Navy - EC
 Air Force - 11, 17, 85
 DSA - ES

(Project S910-11(4))

User activities:

Army -
 Navy - MC, AS, OS, CG
 Air Force - 19