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TABLE I. Characteristics.

Symbol	Capacitance change from value at 25°C					
	At -55°C		At +85°C		At +125°C	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
A	-4.5	+2.0	-2.5	+2.0	-4.2	+3.4
B	-1.0	+3.5	-2.5	-0.5	-4.2	-0.8
C	-1.0	+6.5	-4.0	-1.0	-6.7	-1.7
D	+1.5	+8.2	-5.0	-1.5	-8.5	-2.5
E	+3.0	+14.0	-10.0	-3.0	-15.0	-9.0
G	0.0	+14.0	-8.0	-3.0	-14.0	-5.0
	Temperature coefficient -55°C to +85°C					
F	+100 ±150 ppm/°C					
H	+100 ±600 ppm/°C					
J	-300 ±300 ppm/°C					
K	-450 ±300 ppm/°C					
L	+50 ±150 ppm/°C					
M	-100 ±500 ppm/°C					
N	-300 ±800 ppm/°C					
P	-400 ±500 ppm/°C					
Q	-1500 ±900 ppm/°C					
R	-200 ±400 ppm/°C					
T	-150 ±300 ppm/°C					
V	-1200 ±500 ppm/°C					
W	0 ±400 ppm/°C					
X	0 ±200 ppm/°C					
Y	-450 ±300 ppm/°C					
Z	-750 ±300 ppm/°C					



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3.8 Capacitance. When measured as specified in 4.6.5, the minimum capacitance shall be no greater than the minimum value specified and the maximum capacitance shall be not less than the maximum value specified, and no greater than 50 percent above the maximum value specified (see 3.1).

3.9 Dissipation factor. When measured as specified in 4.6.6, the dissipation factor of capacitors shall be not more than 0.2 percent.

### 3.10 Temperature coefficient and capacitance drift.

3.10.1 Temperature coefficient. When measured as specified in 4.6.7.1, capacitance change measurements shall be within the limits specified in table I for the applicable characteristic.

3.10.2 Capacitance drift (for qualification only). When calculated as specified in 4.6.7.2, capacitance drift shall be within 0.5 pF of the initial step 1 measurement.

3.11 Terminal strength. When measured as specified in 4.6.8, there shall be no fracture, loosening of parts, or other mechanical failures.

3.12 Torque. When measured as specified in 4.6.9, the torque values shall be within the limits specified for individual capacitor styles (see 3.1).

### 3.13 Fatigue. When measured as specified in 4.6.10, capacitors shall meet the following requirements:

Capacitance: Change not more than 12 percent or 0.75 pF, whichever is greater, from the initial value obtained when measured as specified in 4.6.10.

Torque: As specified for individual capacitor styles (see 3.1).

### 3.14 Life. When tested as specified in 4.6.11, capacitors shall meet the following requirements:

Insulation resistance: As specified in 3.7.

Capacitance: Unless otherwise specified, change not more than 5 percent or 0.5 pF, whichever is greater, from the initial value obtained when set and measured as specified in 4.6.11.1.

3.15 Shock, specified pulse. When capacitors are tested as specified in 4.6.12, there shall be no intermittent contacts of 0.5 millisecond (ms) or greater duration or arcing or other indication of breakdown, nor shall there be any open or short circuiting or evidence of mechanical damage.

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3.16 Vibration, high frequency. When capacitors are tested as specified in 4.6.13, there shall be no intermittent contacts of 0.5 ms or greater duration or arcing or other indication of breakdown, nor shall there be any open or short circuiting or evidence of mechanical damage. Capacitors shall also meet the following requirements.

Capacitance: Change not more than 2 percent of 0.5 pF (0.25 pF for values less than 10 pF), whichever is greater, from the initial value obtained when measured as specified in 4.6.5.

Dissipation factor: Not more than 0.2 percent.

Dielectric withstanding voltage: As specified in 3.5.

3.17 Moisture resistance. When measured as specified in 4.6.14, capacitors shall meet the following requirements.

Visual inspection: There shall be no mechanical damage.

Insulation resistance: Shall exceed 10,000 megohms.

Capacitance: Change not more than 10 percent for styles CV11, CV14, and CV21, and not more than 5 percent for styles CV31 and CV34 from the initial value obtained when set and measured as specified in 4.6.5.

Dissipation factor: Shall not be more than 0.5 percent.

3.18 Marking. Each capacitor shall be legibly marked with smear-resistant ink that will withstand the environmental tests specified herein and shall be marked with the type designation, and the manufacturer's name or symbol. The marking shall not be placed on the mounting surface. There shall be no space between the symbols which comprise the type designation. If lack of space requires it, the type designation may appear on two lines. In this event, the type designation shall be divided between the style and the characteristic symbols and shall appear on two lines as shown in the following example.

CV11  
A070

Other markings which in any way interfere with, obscure, or confuse those specified herein, are prohibited. Marking shall remain legible after all tests.

3.19 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.20 Workmanship. Capacitors shall be manufactured and processed in such a manner as to be uniform in quality and be free from other defects that will affect life, serviceability, or appearance.

3.20.1 Soldering. Where soldering is employed, only non-corrosive fluxes shall be used, unless it can be shown that corrosive elements have been satisfactorily removed after soldering. Solder shall not be used for obtaining mechanical strength. Electrical connections shall be mechanically secure before soldering and electrically continuous after soldering.

3.20.2 Finish of terminals. The terminals shall be so coated that soldering can be accomplished readily.

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4. VERIFICATION

4.1 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see 4.3).
- b. Conformance inspection (see 4.4).
- c. Periodic group C inspection (see 4.5)

4.2 Inspection conditions. Unless otherwise specified herein, all inspections shall be performed in accordance with the test conditions specified in the "GENERAL REQUIREMENTS" of MIL-STD-202.

4.3 Qualification inspection. Qualification inspection shall be performed at a laboratory acceptable to the Government (see 6.3), on sample units produced with equipment and procedures normally used in production.

4.3.1 Sample. The number of sample units comprising a sample of capacitors to be subjected to qualification inspection shall be as specified in table II or the appendix to this specification.

TABLE II. Qualification inspection.

Inspection	Requirement paragraph	Method paragraph	Number of sample units to be tested		Number of failures permitted <sup>1/</sup>	
<u>Group I</u>						
Visual and mechanical inspection: Design, construction, and physical dimensions	3.1 and 3.4	4.6.1	2	26	1	1
Marking and workmanship <sup>2/</sup>	3.18 to 3.20.2 inclusive		18		1	
Dielectric withstanding voltage	3.5	4.6.2				
Barometric pressure (reduced)	3.6	4.6.3				
Insulation resistance	3.7	4.6.4				
Capacitance	3.8	4.6.5				
Dissipation factor	3.9	4.6.6				
Temperature coefficient and capacitance drift	3.10	4.6.7	6		1	
<u>Group II</u>						
Terminal strength	3.11	4.6.8	12		1	
Torque	3.12	4.6.9				
Fatigue	3.13	4.6.10				
Life	3.14	4.6.11				
<u>Group III</u>						
Shock, specified pulse	3.15	4.6.12	12		1	
Vibration, high frequency	3.16	4.6.13				
Moisture resistance	3.17	4.6.14				

<sup>1/</sup> A sample unit having one or more defects will be considered as one defective.

<sup>2/</sup> Marking will be considered as a defect only if it becomes illegible as a result of any of the tests.

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4.3.2 Inspection routine. The sample shall be subjected to the inspections specified in table II, in the order shown. All sample units shall be subjected to the inspections of group I. The sample shall then be divided as specified in table II for group II and group III and subjected to the inspection for their particular group.

4.3.3 Failures. Failures in excess of those allowed in table II shall be cause for refusal to grant qualification.

4.4 Conformance inspection.

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

4.4.1.1 Inspection lot. An inspection lot shall consist of capacitors of the same style and characteristic produced under essentially the same conditions, and offered for inspection at one time.

4.4.2 Group A inspection. Group A inspection shall consist of the examinations and tests specified in table III, in the order shown.

4.4.2.1 Sampling plan. The sampling plan shall be as specified in table III.

TABLE III. Group A inspection.

Inspection	Requirement paragraph	Method paragraph	Sampling procedure
<u>Group I</u>			
Visual and mechanical inspection Design, construction, and physical dimensions	3.1 and 3.4	4.6.1	13 samples 0 failures
Marking Workmanship	3.18 3.20 to 3.20.2 inclusive		
<u>Subgroup 2</u>			
Dielectric withstanding voltage	3.5	4.6.2	13 samples 0 failures
Insulation resistance	3.7	4.6.4	
Capacitance	3.8	4.6.5	
Dissipation factor	3.9	4.6.6	

4.4.3 Group B inspection. Group B inspection shall consist of the tests specified in table IV, in the order shown. Shipment of capacitor lots shall not be accomplished until representative samples of the lot have successfully completed the group B tests.

4.4.3.1 Sampling plan. The sampling plan shall be as specified in table IV.

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TABLE IV. Group B inspection.

Inspection	Requirement paragraph	Method paragraph	Sampling procedure
Terminal strength <u>1/</u>	3.11	4.6.8	5 samples
Torque <u>1/</u>	3.12	4.6.9	0 failures
Temperature coefficient <u>1/</u>	3.10.1	4.6.7.1	

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 on an annual basis. If the design, material, construction, or processing of the part has changed or if there are any quality problems or failures, the qualifying activity may require resumption of the original test frequency.

4.4.3.2 Disposition of sample units. Sample units which have been subjected to group B inspection shall not be delivered on the contract or order.

4.4.3.3 Rejected lots. If an inspection lot is rejected, the supplier may withdraw the lot, rework it to correct the defects, or screen out the defectives, as applicable, and reinspect. Such lots shall be kept separate from new lots and shall be clearly identified as reinspected lots. Failure of a resubmitted lot due entirely to failure to pass the tests which caused a previous rejection shall be cause for final rejection.

4.5 Periodic Group C inspection. Group C inspection shall consist of the tests specified in table V, in the order shown. Sample units shall be taken at random from capacitors currently in production. The number of sample units to be inspected shall be as specified in table V. Separate samples of the size required by table V shall be used for each sampling period and each subgroup listed. Defectives in excess of those allowed in table V shall constitute failure. Delivery of units is not to be delayed pending results of group C testing.

4.5.1 Sampling procedure. At the discretion of the procuring activity, but not in excess of once each month, a sample consisting of 12 sample units of each style and characteristic shall be taken at random from capacitors currently in production. These specimens shall have passed all group A tests.

4.5.2 Test routine. Specimens chosen in accordance with 4.5.1 shall be subjected to the group C tests specified in table V. No more than one defective capacitor will be allowed for a single sample (12 sample units).

TABLE V. Group C inspection.

Inspection	Requirement paragraph	Method paragraph	Number of sample units to be inspected	Number of defectives allowed
<u>Subgroup 1 tests</u>				
Fatigue	3.13	4.6.10	12	1
Life	3.14	4.6.11		
<u>Subgroup 2 tests</u>				
Barometric pressure (reduced)	3.6	4.6.3	18	1
Shock, specified pulse	3.15	4.6.12		
Vibration, high frequency	3.16	4.6.13		
Moisture resistance	3.17	4.6.14		

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4.5.4 Noncompliance. If a sample fails to pass group C inspection, the manufacturer shall notify the qualifying activity and cognizant inspection activity of such failure and take corrective action on the materials or processes, or both as warranted, and on all units of product which can be corrected and which are manufactured with essentially the same materials and under the same processes, and which are considered subject to the same failure. Acceptance and shipment of the product shall be discontinued until corrective action acceptable to the qualifying activity has been taken. After the corrective action has been taken, group C inspection shall be repeated on additional sample units (all inspections, or the inspection which the original sample failed, at the option of the qualifying activity). Group A and group B inspections may be re-instituted; however, final acceptance and shipment shall be withheld until the group C inspection has shown that the corrective action was successful.

4.5.5 Verification of qualification. Every 6 months, the manufacturer shall provide verification of qualification to the qualification activity. Continuation of qualification shall be based on meeting the following requirements:

- a. The capacitor design has not been modified.
- b. Lot rejection for group A inspection does not exceed the group A sampling plan.
- c. The requirements for group B have been met.
- d. Periodic group C inspection.

### 4.6 Methods of inspection.

4.6.1 Visual and mechanical examination. Capacitors shall be examined to verify that the materials, design, construction, physical dimension, marking, and workmanship are in accordance with the applicable requirements (see 3.1, 3.3, 3.4, 3.18, and 3.20).

#### 4.6.2 Dielectric withstanding voltage (see 3.5).

4.6.2.1 Terminal to terminal. Capacitors shall be tested in accordance with method 301 of MIL-STD-202. The following details shall apply.

- a. Magnitude of test voltage: 2.2 times applicable rated dc voltage.
- b. Duration of application of test voltage: 3 seconds  $\pm$ 2 seconds.
- c. Points of application of test voltage: Between terminals.
- d. Limiting value of surge current: 50 milliamps.

4.6.2.2 Terminal to mounting. Capacitors shall be tested in accordance with 4.6.2.1 with the following exceptions.

- a. Capacitors shall be mounted by normal mounting means on a metal plate and the terminals shall be electrically connected. (Resilient spacer referenced in 6.5 shall not be used for this test.)
- b. In lieu of 4.6.2.1c use the points of application of test voltage: Between terminals and metal plate.
- c. Style CV31 does not require this test.



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4.6.8 Terminal strength (see 3.11). A 4-pound force shall be applied between each terminal and the base. The force shall be applied parallel to the terminal extension, and shall be increased gradually to 4 pounds and held at that value for not less than 10 seconds.

4.6.9 Torque (see 3.12). The torque required to start and maintain rotation of the rotor shall be measured by a gradually applied force sufficient to turn the rotor through at least one complete rotation.

4.6.10 Fatigue (see 3.13). Capacitance, at maximum capacitance setting, shall be measured as specified in 4.6.5. The rotors of the capacitors shall be continuously rotated through the complete range (360 degrees) in alternating directions at a rate of approximately 20 cycles per minute for a period of 5 minutes. The driving mechanism used in this test shall include a flexible coupling to prevent development of excessive pressures caused by misalignment of the driving shaft and setting, and the torque shall be measured as specified in 4.6.5 and 4.6.9, respectively.

4.6.11 Life (see 3.14).

4.6.11.1 For qualification inspection. Capacitance shall be set at 80 percent to 90 percent of maximum capacitance and measured as specified in 4.6.5. A dc potential of 50 percent rated voltage upon which a peak alternating potential of 50 percent rated voltage at a frequency of 100 Hz or less is superimposed, shall then be applied to the capacitors for 1,000 hours  $\pm$ 12 hours at a temperature of 85°C  $\pm$ 2°C. Upon completion of the test, capacitors shall be returned to standard test conditions without disturbing the initial capacitance setting. Insulation resistance and capacitance shall be measured as specified in 4.6.4 and 4.6.5, respectively.

4.6.11.2 For quality conformance inspection. The life test shall be conducted as specified in 4.6.11.1.

4.6.12 Shock, specified pulse (see 3.15). Capacitors shall be tested in accordance with method 213 of MIL-STD-202. The following details and exceptions shall apply.

- a. Special mounting means: Capacitors shall be rigidly mounted on a mounting fixture by the normal mounting means.
- b. Number and direction of applied shocks: Thirty shocks, ten blows in each of three mutually perpendicular planes (five in each of two directions). The test planes shall be perpendicular to the normal mounting axis, perpendicular to the mounting axis with the capacitor body rotated 90 degrees, and parallel to the mounting axis.
- c. Test-condition letter: I.
- d. Electrical-load conditions: During the test, a potential of 125 percent of the rated dc voltage (see 3.1) shall be applied between the terminals of the capacitor.
- e. Measurements during shock: During the test, observations shall be made to determine intermittent contacts of 0.5 ms or greater duration or arcing or other indication of any open or short circuiting or evidence of mechanical damage.
- f. Examinations after test: Capacitors shall be visually examined for evidence of breakdown, arcing, and mechanical damage.

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4.6.13 Vibration, high frequency (see 3.16). Capacitors shall be tested in accordance with method 204 of MIL-STD-202. The following details and exception shall apply.

- a. Mounting of specimens: Capacitors shall be mounted as specified in 4.6.12a. The mounting fixture shall be so constructed as to preclude any resonance within the test range. An inspection of the mounting fixture shall be made on a vibrator. If any resonant frequencies are observed, adequate steps must be taken to damp the structure.
- b. Electrical-load conditions: As specified in 4.6.12d.
- c. Test condition letter: B.
- d. Measurements during vibration: During the last cycle in each direction, and electrical measurement shall be made to determine intermittent contacts of 0.5 ms or greater duration or open or short circuiting.
- e. Examination after vibration: Capacitors shall be visually examined for evidence of mechanical damage.
- f. Final measurements: After the final vibration cycle, the initial capacitance setting shall not be disturbed. Dielectric withstanding voltage, capacitance, and dissipation factor shall be measured as specified in 4.6.2, 4.6.5, and 4.6.6, respectively.

4.6.14 Moisture resistance (see 3.17). Capacitors shall be tested in accordance with method 106 of MIL-STD-202. The following details shall apply.

- a. Mounting: Securely fastened by normal mounting means.
- b. Initial measurements: Capacitance shall be set at 80 percent to 90 percent of maximum rated capacitance and measured as specified in 4.6.5. Capacitance measurements shall be made not less than 1 hour nor more than 4 hours before test initiation.
- c. Polarization and load: Not applicable.
- d. Final measurements: After the final cycle, the initial capacitance setting shall not be disturbed. Insulation resistance, dissipation factor, and capacitance shall be measured as specified in 4.6.4, 4.6.5, and 4.6.6, respectively.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). 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.

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### 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Capacitors covered by this specification are not intended for circuits where periodic adjustment is objectionable. Capacitors covered by this specification are unique due to the fact that these devices must be able to operate satisfactorily in high reliability military systems under the following demanding conditions: 15Gs of high frequency vibration, 100Gs of shock (specified pulse), and wide temperature fluctuations. These capacitors also offer very high reliability that is verified under a qualification system. Commercial components are not designed to withstand these military environmental conditions.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification, applicable specification sheet, and the complete type designation (see 1.2.1 and 3.1).
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1).
- c. Packaging requirements (see 5.1).

6.3 Qualification. 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", copies of which may be obtained on application to Defense Automated Printing Service, Bldg. 4D (DPM-DODSSP), 700 Robbins AVE, Philadelphia PA 19111-5094.

6.4 Mounting. It is recommended that a resilient spacer between the unit and mounting surface be used to avoid possible cracking or chipping of the ceramic mounting base.

6.5 Identification of maximum capacitance. For styles CV11, CV14, CV21, and CV34, the approximate maximum capacitance value is obtained by rotating the plated area of the disk (rotor) until it coincides as nearly as possible with the area of the solder button terminal of the stator.

6.6 Subject term (key word) listing.

Capacitance  
Dissipation factor

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

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APPENDIX

PROCEDURE FOR QUALIFICATION APPROVAL

10. SCOPE

10.1 Scope. This appendix details the procedure for submission of samples, with related data, for qualification inspection of capacitors covered by this specification. The procedure for extending qualification of the required sample to other capacitors covered by this specification is also outlined herein. This appendix is a mandatory part of the specification. The information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS. This section is not applicable to this appendix.

30. SUBMISSION

30.1 Sample.

30.1.1 Single-type submission. A sample consisting of 25 sample units of the style and characteristic for which qualification is sought shall be submitted. These sample units shall be of the highest capacitance value in the characteristic for which qualification is sought.

30.1.2 Single-style submission. A sample consisting of the required number of sample units, or as specified in table VII, shall be submitted.

TABLE VII. Samples of single style submission.

Style	Number of sample units	Type designation
CV11	13 13	CV11A070 CV11D450
CV14	13 13	CV14A070 CV14D450
CV21	13 13	CV21A070 CV21D450
CV31	13 13	CV31A080 CV31E600
CV34	13 13	CV34A080 CV34E600
CV42	13 13	CV42X070 CV42Z300

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APPENDIX

TABLE VII. Samples of single style submission - Continued.

Style	Number of sample units	Type designation
CV98	13 13	CV98F2R5 CV98K200
CV99	13 13	CV99L4R5 CV99Q500
CV97	13 13	CV97R250 CV97Q500
CV50	13 13	CV50X060 CV50V300

40. EXTENT OF APPROVAL

40.1 Single-type approval. Approval of voltage will be restricted to that submitted. Approval of capacitance values will be restricted to values equal to and less than the capacitance value in the characteristic submitted. Approval of additional items will be granted provided that the manufacturer submits with his sample a statement to the effect that the mechanical construction of the rotor assembly, the dielectric material, and the impregnant do not differ from those of the characteristic approved.

40.2 Single-style approval. Approval of the submission shown in table VII will be the basis for approval of intermediate capacitance values, voltages, and characteristics in the style, provided the manufacturer submits with his sample a statement to the effect that the mechanical construction of the rotor assembly, and the impregnant do not differ from the style approved.

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

Preparing activity:  
 DLA - CC  
 (Project 5910-1966)

Review activities:  
 Navy - AS, MC, OS, SH  
 Air Force - 19, 99

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.

The submitter of this form must complete blocks 4, 5, 6, and 7, and send to preparing activity.

The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>RECOMMEND A CHANGE:</b>	1. DOCUMENT NUMBER MIL-PRF-81D	2. DOCUMENT DATE (YYYYMMDD) 19990525
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**DOCUMENT TITLE** CAPACITORS, VARIABLE, CERAMIC DIELECTRIC, GENERAL SPECIFICATION FOR

**NATURE OF CHANGE** (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

### REASON FOR RECOMMENDATION

<b>SUBMITTER</b>		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYYYMMDD)

<b>PREPARING ACTIVITY</b>		
a. NAME KEN BERNIER	b. TELEPHONE (Include Area Code) (1) Commercial 614-692-0563 (2) AUTOVON 850-0563	
c. ADDRESS (Include Zip Code) DLSC-VAM BLDG 20 RM C218M 390 East Broad Street Columbus, OH 43213-1199	<b>IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:</b> Defense Standardization Program Office (DLSC-LM) 8725 John J. Kingman road, Suite 2533 Ft. Belvoir, VA 22060-2533 Telephone (703) 767-6888 AUTOVON 427-6888	