

INCH-POUND

MIL-C-15305E
AMENDMENT 4
4 December 1991
SUPERSEDING
AMENDMENT 3
21 May 1987

MILITARY SPECIFICATION
COILS, ELECTRICAL, FIXED AND VARIABLE, RADIOFREQUENCY
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-C-15305E, dated 17 July 1979, and is approved for use by all Departments and Agencies of the Department of Defense.

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2.1, add under STANDARDS, MILITARY:

"MIL-STD-454 - Standard General Requirements for Electronic Equipment."

2.2, add the following paragraph:

"2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence."

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* 3.4.7, delete and substitute:

"3.4.7 Solder and soldering flux. Solder shall be in accordance with QQ-S-571 and have a liquidus melting point greater than +270°C and a plastic stage not to exceed +10°C. The plastic stage is the duration between solid and liquid. Flux shall be in accordance with MIL-F-14256, type R or RMA.

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* 3.15, delete and substitute:

"3.15 Resistance to soldering heat. When coils are tested as specified in 4.8.11, there shall be no evidence of mechanical damage, loosening of terminals or solder reflow as evidenced by solder flowing from the body. Pre- and post- test X-ray inspection at 10X shall be required. "

3.23, delete and substitute:

"3.23 Fungus. Materials used in the construction of coils shall be fungus inert in accordance with requirement 4 of MIL-STD-454 (see 4.8.19).

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3.28, delete and substitute:

"3.28 Workmanship. Coils shall be processed in such a manner as to be uniform in quality and free of defects that will affect function, life, or serviceability."

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TABLE IV, group II, Electrical characteristics (final): Delete "3.8 and 4.8.4" and substitute "3.12 and 4.8.8".

TABLE IV, group II, Inductance: Delete "3.8.1 and 4.8.4.1" and substitute "3.12.1 and 4.8.8.1".

TABLE IV, group II, Q: Delete "3.8.2 and 4.8.4.2" and substitute "3.12.2 and 4.8.8.2".

TABLE IV, group IV, Electrical characteristics (final): Delete "3.8 and 4.8.4" and substitute "3.12 and 4.8.8".

TABLE IV, group IV, line 5, delete, "Moisutre" and substitute "Moisture".

TABLE IV, group VI, Resistance to solvents, number of sample units: Delete "3" and substitute "4".

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TABLE V, Visual and mechanical examination (external): Delete "3.5.3" and substitute "3.5.2".

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TABLE VII, subgroup IV, Resistance to solvents: Delete "3" and substitute "4".

TABLE VII, note 3/, first word of sentence: Delete "Nine" and substitute "Ten". Second line: Delete "3 units for resistance to solvents" and substitute "4 units for resistance to solvents".

PAGE 13

4.8.2a, delete and substitute:

"a. Test condition A-1 for qualification and for group C inspection; A for group A inspection. Step 3 shall be at the maximum operating temperature for the class."

PAGE 15

4.8.8.1.1, delete and substitute:

"4.8.8.1.1 Effective inductance for cylindrical coils (inductance 0.10 to 10.0 microhenries, inclusive). The tests shall be performed using a Q meter such as Hewlett Packard model 260A, HP4342A, HP250RX, or equivalent at appropriate test frequencies as listed in the instructions for the test equipment. Suitable means shall be used to calibrate the frequency dial of the Q meter within 0.1 percent for the applicable test frequency. Frequencies to be used for testing the various ranges of inductance shall be as follows:

<u>Inductance range (μH)</u>	<u>Reference test frequency (MHz) for 260A</u>
0.10 to 1.0 incl - - - - -	25.0
Above 1.0 to 10.0 incl - -	7.9

Allowance shall be made for the internal inductance of the Q meter and the test fixture as determined in 4.8.8.1.1.1."

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4.8.8.1.2, under paragraph: Delete "Test Frequency, MHz" and substitute "Reference test frequency (MHz) for 260A."

FIGURE 3, after title, add: "or equivalent."

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FIGURE 4, after title, add: "or equivalentent."

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4.8.8.2, first sentence, delete and substitute: "The test shall be performed using a Q meter such as Hewlett Packard model 260A, HP4342A, HP250RX meter, or equivalentent."

4.8.8.3, first sentence, delete and substitute: "Unshielded coils shall be placed in a field of a variable-frequency oscillator, such as Measurements Corporation megacycle meter, model 59, or equivalentent."

4.8.8.3.1, first sentence, delete and substitute: "When unshielded coils under test cannot be resonated by the method specified in 4.8.8.3, the test shall be performed using the instruments specified in 4.8.8.2 or equivalentent."

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FIGURE 7, after title, add: "or equivalentent."

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FIGURE 8, after title, add: "or equivalentent."

PAGE 22

FIGURE 9, after title, add: "or equivalentent."

PAGE 24

4.8.8.6, delete equation and substitute:

$$R_p = \frac{.159 Q_1 Q_2}{FC_1 (Q_1 - Q_2)}$$

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FIGURE 11, after title, add: "or equivalentent."

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FIGURE 11, after title, add: "or equivalent."

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* 4.8.11b, delete and substitute following:

"b. Test condition letter - A. "

* Paragraph 4.8.11, add the new subparagraph as follows:

"c. After the test and as soon as the solder terminals have returned to room ambient temperature, the following tests shall be made in the order shown:

- (1) Visual: There shall be no evidence of solder reflow of internal connections as evidenced by solder flowing from the body of the device.
- (2) Thermal shock: As specified in 4.8.2a.
- (3) Terminal strength: As specified in 4.8.12. There shall be no evidence of mechanical damage or loosening of terminals.
- (4) Electrical verification: Winding continuity shall be verified."

PAGE 29

4.8.15.1a, line 4: Delete "1.25" and substitute ".250".

PAGE 30

4.8.18a, last sentence: Delete "steps 7a and 7b" and substitute "step 7a". Add at the end of sentence, "Step 7b shall not be applicable."

PAGE 32

5.4.2.4, line 3: Delete "Governemnt" and substitute "Government".

6.1, line 2: Delete "involing" and substitute "involving".

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6.9: Delete in its entirety.

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20.1.2, line 3: Delete "Nine" and substitute "Ten".

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.

CONCLUDING MATERIAL

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Air Force - 19

Preparing activity:

Army - ER

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DLA - ES

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