

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	Inactive for new design.	2 October 2002	Kendall Cottongim
B	Addition of pure tin prohibition requirement. Update drawing format throughout. Approved source of supply has been added and removal of a source.	4 July 2014	Michael A. Radecki

INACTIVE FOR NEW DESIGN AFTER 2 October 2002.
FOR REPLACEMENT PURPOSES ONLY.

CURRENT DESIGN ACTIVITY CAGE CODE 037Z3
HAS CHANGED NAMES TO:
DLA LAND AND MARITIME
COLUMBUS, OHIO 43218-3990

Prepared in accordance with ASME Y14.100

REV STATUS OF PAGES	REV	B	B	B	B	B	B	B											
	PAGES	1	2	3	4	5	6	7											
PMIC N/A	PREPARED BY Jack D. Bicknell							DEFENSE ELECTRONIC SUPPLY CENTER, DAYTON, OHIO											
Original date of drawing 14 June 1984	CHECKED BY Randy Larson							TITLE COIL, RADIO FREQUENCY, FIXED, TYPES LT4K AND LT10K											
	APPROVED BY Ivan R. Jones																		
	SIZE A	CODE IDENT. NO. 14933						DWG NO. 84058											
	SCALE N/A			REV B				PAGE 1 OF 7											

1. SCOPE

1.1 Scope. This drawing describes the requirements for radio frequency coils, fixed. Radio frequency coils covered by this drawing are parts capable of meeting grade 1, class B (LT4K) or grade 1, class A (LT10K) requirements of MIL-PRF-15305.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as follows:



2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-15305 - Coils, Fixed, and Variable, Radio Frequency General Specification For.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts.

(Copies of these documents are available online at <http://quicksearch.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Interface and physical dimensions.

3.1.1 Item Requirements. The individual item requirements shall be in accordance with MIL-PRF-15305, and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified for style LT4 or LT10 in MIL-PRF-15305, and as specified herein.

3.2.1 Design documentation. The design documentation shall be in accordance with MIL-PRF-15305. Unless otherwise specified in the contract or purchase order, documentation shall be retained by the manufacturer and available for review by the acquiring activity or contractor upon request.

3.3 Electrical characteristics.

3.3.1 Electrical characteristics (initial). Electrical characteristics (initial) shall be in accordance with table I.

3.3.2 Inductance. See table I.

3.3.3 Inductance tolerance. See table I.

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3.3.4 Q values. See table I.

3.3.5 Self-resonant frequency. See table I.

3.3.6 DC resistance. See table I.

3.4. Design and construction.

3.4.1 Dimensions and configuration: See figure 1.

3.4.2 Weight. The weight shall be 0.19 grams max for style LT4 and 0.22 grams max for style LT10..

3.4.3 Core material. See table I.

3.4.4 Terminals. The terminals shall meet the requirements of MIL-PRF-15305.

3.4.5 Terminal strength. The terminal strength shall be in accordance with MIL-STD-202, method 211, test condition A, 3 pounds applied force.

3.4.6 Operating temperature range. For style LT4, -55°C to +125°C and for style LT10, -55°C to +105°C .

3.4.7 Temperature rise (90°C ambient).For style LT4, 35°C and for style LT10, 15°C.

3.4.8 Dielectric withstanding voltage (sea level). The dielectric withstanding voltage shall be tested in accordance with MIL-STD-202, method 301, test voltage 400 V rms.

3.4.9 Dielectric withstanding voltage (barometric pressure). The dielectric withstanding voltage shall be tested in accordance with MIL-STD-202, method 105, test voltage 200 V rms.

3.4.10 Marking. Marking shall be in accordance with MIL-PRF-15305, except the part number shall be in accordance with 1.2 herein. The similar vendor part number may also be marked in accordance with 6.7 herein.

3.5 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.

3.6 Manufacturer eligibility. To be eligible for listing as an approved source of supply, the manufacturer shall be listed on the MIL-PRF-15305 qualified products list for at least one part or perform the group B and group C inspections specified herein on a sample agreed upon by the manufacturer and DLA Land and Maritime-VA.

3.7 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be an approved source of supply.

3.8 Pure tin. The use of pure tin, as a final finish is prohibited externally. Tin content shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.5).

3.9 Workmanship. The inductor shall be uniform in quality and free from any defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Qualification inspection. Qualification inspection for these parts are not required.

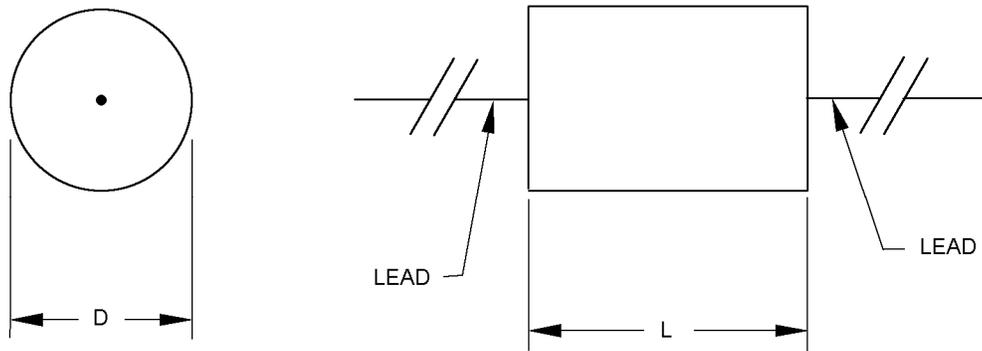
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4.2 Conformance inspection.

4.2.1 Inspection of product for delivery. Inspection of product for delivery shall consist of groups A and B inspections of MIL-PRF-15305.

4.2.2 Group A inspection. Group A inspection shall be in accordance with MIL-PRF-15305.

4.2.3 Group B inspection. Group B inspection shall be in accordance with MIL-PRF-15305.



DIMENSIONS

	Inch	mm
Length	0.200 ±0.010	5.08 ±0.25
Diameter	0.078 ±0.008	1.98 ±0.20
Lead length	1.5 ±0.12	38.10 ±3.05
Lead size: (24 or 26 AWG TCW)	0.185 ±.0035	.470 ±.089

FIGURE 1. Physical dimensions and configuration.

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TABLE I. Electrical characteristics (initial).

Dash No.	Inductance ($\mu\text{H} \pm 10\%$)	Q (min)	Test Frequency (MHz)	Self-resonant Frequency min (MHz)	Maximum DC resistance at 25°C ohms	Rated current mA	Type designation and core material
-01	0.10	35	25	680	0.13	895	Phenolic (LT4K)
-02	0.12	35	25	650	0.15	835	"
-03	0.15	35	25	560	0.18	760	"
-04	0.18	35	25	540	0.21	705	"
-05	0.22	30	25	500	0.25	645	"
-06	0.27	30	25	440	0.38	525	"
-07	0.33	25	25	410	0.49	460	"
-08	0.39	25	25	380	0.59	420	"
-09	0.47	25	25	340	0.62	410	"
-10	0.56	40	25	250	0.18	510	"
-11	0.68	40	25	215	0.20	485	Iron (LT10K)
-12	0.82	40	25	200	0.22	465	"
-13	1.0	40	25	190	0.25	435	"
-14	1.2	35	7.9	170	0.28	410	"
-15	1.5	40	7.9	150	0.49	310	"
-16	1.8	40	7.9	135	0.56	290	"
-17	2.2	45	7.9	130	0.72	257	"
-18	2.7	45	7.9	110	0.85	236	"
-19	3.3	45	7.9	100	1.2	198	"
-20	3.9	50	7.9	95	1.5	178	"
-21	4.7	55	7.9	88	2.1	150	"
-22	5.6	55	7.9	78	2.8	130	"
-23	6.8	55	7.9	69	3.2	122	"
-24	8.2	45	7.9	52	4.4	104	"
-25	10	45	7.9	47	5.2	95	"
-26	12	40	2.5	31	3.0	126	"
-27	15	40	2.5	26	3.4	118	"
-28	18	40	2.5	23	3.8	112	"
-29	22	45	2.5	20	4.3	105	"
-30	27	45	2.5	17	4.7	100	"
-31	33	45	2.5	15	5.2	95	"
-32	39	45	2.5	13.5	6.8	83.5	"
-33	47	45	2.5	12.5	8.2	76	"
-34	56	45	2.5	11.5	10.0	69	"
-35	68	45	2.5	10.5	11.5	64	"
-36	82	45	2.5	10.0	16.0	54.5	"
-37	100	45	2.5	9.5	17.5	52	"
-38	120	35	0.79	8.9	16.0	54.5	Ferrite (LT10K)
-39	150	35	0.79	7.9	18.0	51	"
-40	180	35	0.79	7.5	20.0	49	"
-41	220	35	0.79	7.1	26.5	42.5	"
-42	270	35	0.79	6.6	30.5	39	"
-43	330	35	0.79	6.2	40.5	34	"
-44	390	35	0.79	5.9	43.0	33	"
-45	470	35	0.79	5.4	48.0	31.5	"
-46	560	35	0.79	5.0	60.0	28	"
-47	680	35	0.79	4.5	66.0	27	"
-48	820	35	0.79	3.9	72.0	25.5	"
-49	1000	35	0.79	3.3	79.0	24.5	"

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4.2.4 Certification. The procuring activity, at its discretion, may accept a certificate of compliance with Group A and B requirements in lieu of performing Group A and B tests (see 6.2c).

4.2.5 Inspection of preparation for delivery. Inspection of preparation for delivery shall be in accordance with MIL-PRF-15305.

4.3 Methods of examination and test. Methods of examination and test shall be in accordance with MIL-PRF-15305 and as specified herein.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. 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.

6. NOTES

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

6.1 Intended use. RF coils conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. This drawing is intended exclusively to prevent the proliferation of unnecessary duplicate specifications, drawings, and stock catalog listings. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL 15305, this drawing becomes obsolete and will not be used for new design. The QPL 15305 product shall be the preferred item for all applications.

6.2 Ordering data. The contract or purchase order should specify the following:

- a. Complete PIN (see 1.2).
- b. Requirements for delivery of one copy of the quality conformance inspection data with each shipment of parts by the manufacturer.
- c. Whether the manufacturer performs the group A and group B tests or provides certification of compliance with group A and group B requirements.
- d. Requirements for notification of change of product to the contracting activity, if applicable.
- e. Requirements for packaging and packing.

6.3 Degradation limits. The degradation limits for the parts covered by this drawing shall not exceed the following limits:

- a. Inductance: $\pm 5\% + .001 \mu H$
- b. Q: $\pm 10\%$
- c. Self-resonant frequency: $\pm 8\%$
- d. DC resistance: $\pm 2\%$ or .01 ohms, whichever is greater.

6.4 Replaceability. RF coils covered by this drawing will replace the same commercial device covered by contractor prepared specification or drawing.

6.5 Tin whisker growth. The use of alloys with tin content greater than 97 percent, by mass, may exhibit tin whisker growth problems after manufacture. Tin whiskers may occur anytime from a day to years after manufacture and can develop under typical operating conditions, on products that use such materials. Conformal coatings applied over top of a whisker-prone surface will not prevent the formation of tin whiskers. Alloys of 3 percent lead, by mass, have shown to inhibit the growth of tin whiskers. For additional information on this matter, refer to [ASTM-B545](#) (Standard Specification for Electrodeposited Coatings of Tin).

6.6 Users of record. Coordination of this document for future revisions is coordinated only with the approved source(s) of supply and the users of record of this document. Requests to be added as a recorded user of this drawing may be achieved online at <mailto:transformercoil@dla.mil> or if in writing to: DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0557 or DSN 850-0557.

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6.7 Approved sources of supply. Approved sources of supply are listed herein. Additional sources will be added as they become available. Assistance in the use of this drawing may be obtained online at <mailto:transformercoil@dla.mil>, or by contacting DLA Land and Maritime, Columbus, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0557 or DSN 850-0557.

DLA Land and Maritime drawing PIN <u>1/</u>	Vendor similar designation or type number	Vendor CAGE	Vendor name and address
84058-XX	0819-XX	99800	Delevan Division of America Precision Industries Inc. 270 Quaker Road East Aurora, NY 14052
84058-XX	ML8M series	24226	Gowanda Electronics One Magnetics Parkway Gowanda, NY 14070

1/ Parts must be purchased to this DLA Land and Maritime drawing PIN to assure that all performance requirements and tests are met.

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