

INCH-POUND

MS90538C  
 7 September 2007  
 SUPERSEDING  
 MS90538B  
 16 February 1995

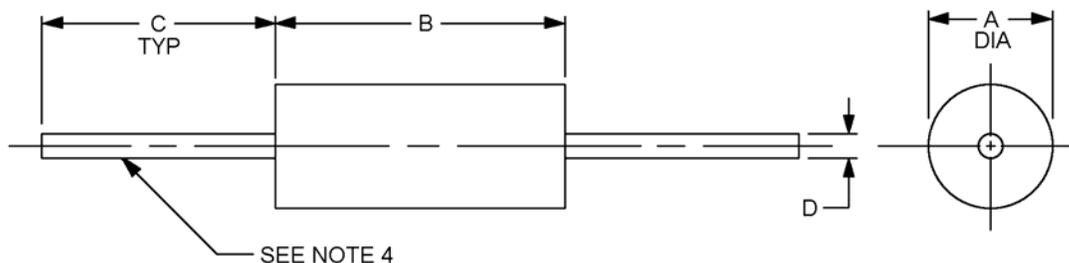
## MILITARY SPECIFICATION SHEET

COILS, RADIO FREQUENCY, MOLDED, FIXED,  
 SUBMINIATURE (IRON CORE),  
 TYPES LT10K001 TO LT10K021, INCLUSIVE

Inactive for new design.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the products described herein shall consist of this specification and MIL-PRF-15305.



LTR	Dimensions in inches with metric equivalents (mm) in parentheses	
	Minimum	Maximum
A	.145 (3.68)	.165 (4.19)
B	.365 (9.27)	.385 (9.78)
C	1.250 (31.75)	1.626 (41.30)
D	.023 (0.58)	.027 (0.69)

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. These coils are intended to be supported by their bodies.
4. Solderable/weldable lead wire, Tinned, solid copper, AWG #22.

FIGURE 1. Dimensions and configuration.

MS90538C

REQUIREMENTS:

Design, construction, and physical dimensions: See figure 1.

Style: LT10

Grade: 1  
Class: A

Weight: 0.031747 ounce, maximum.

Operating temperature range: -55° to +105°C.

Ambient temperature: +90°C  $\pm$ 5°C.

Temperature rise: 15°C, maximum.

Terminal pull: 5 pounds, minimum.

Altitude: 70,000 feet.

Shock, specified pulse: Method 213 of MIL-STD-202, test condition I, is applicable.

Dielectric withstanding voltage:

At sea level: Method 301 of MIL-STD-202, test voltage of 700 V rms for a minimum of 60 seconds.

Barometric pressure (reduced): Method 105 of MIL-STD-202, test condition C, test voltage of 180 V rms for a minimum of 60 seconds.

Electrical characteristics: See tables I and II.

Inductance: See table I.

Q values: See table I.

Self-resonant frequency (SRF): See table I.

DC resistance (DCR): See table I.

Part or Identifying Number (PIN): MS90538 - (dash number from table I).

## MS90538C

TABLE I. Electrical characteristics (initial).

Dash Number MS90538	Type designation	Inductance ( $\mu$ H) $\pm 5\%$	Q Min.	Test frequency (MHz)	SRF Minimum (MHz)	DC resistance max (Ohms)	Rated DC current, (mA)
-01	LT10K001	36	60	2.5	15.5	2.50	180
-02	LT10K002	39	60	2.5	14.5	2.60	176
-03	LT10K003	43	60	2.5	13.7	2.70	172
-04	LT10K004	47	55	2.5	13.0	2.75	170
-05	LT10K005	51	55	2.5	12.7	2.85	167
-06	LT10K006	56	55	2.5	12.0	3.00	164
-07	LT10K007	62	55	2.5	11.5	3.15	160
-08	LT10K008	68	55	2.5	11.0	3.30	156
-09	LT10K009	75	55	2.5	10.5	3.70	147
-10	LT10K010	82	50	2.5	10.3	3.90	143
-11	LT10K011	91	50	2.5	10.0	4.30	136
-12	LT10K012	100	50	2.5	9.5	4.50	133
-13	LT10K013	110	60	.79	8.9	4.90	128
-14	LT10K014	120	65	.79	8.7	5.20	124
-15	LT10K015	130	65	.79	8.5	5.45	121
-16	LT10K016	150	65	.79	8.0	6.05	114
-17	LT10K017	160	65	.79	7.5	6.40	111
-18	LT10K018	180	65	.79	7.0	6.75	108
-19	LT10K019	200	65	.79	6.5	7.10	106
-20	LT10K020	220	65	.79	6.2	7.45	103
-21	LT10K021	240	65	.79	5.9	7.80	101

TABLE II. Electrical characteristics (final). 1/

Inspection group	Allowable variation from Initial measurement		Allowable percent from specified minimum value in electrical characteristics (initial) table	
	Inductance (percent)	DC resistance	Self-resonant frequency	Q
Qualification inspection				
Group II	$\pm 2$	---	---	-10
Group III	$\pm 5$	$\pm(3\% +.001 \text{ ohm})$	-8	-10
Group IV	$\pm 5$	$\pm(2\% +.001 \text{ ohm})$	-10	-15
Conformance inspection group C				
Subgroup I	$\pm 2$	---	---	-10
Subgroup II	$\pm 5$	$\pm(2\% +.001 \text{ ohm})$	-10	-15
Subgroup III	$\pm 5$	$\pm(3\% +.001 \text{ ohm})$	-8	-10

1/ Test fixture allowance of  $+0.01\mu\text{H}$  shall be added to all change in inductance limits  $\pm(\_ \text{ percent} +.01 \mu\text{H})$ .

MS90538C

Application Notes:

1. The polarizing voltage during moisture resistance tests is applied with the positive lead connected to the coil terminals tied together, and the negative lead connected to the metal strap.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue 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 issue.

Referenced documents.

MIL-PRF-15305  
MIL-STD-202

Custodians:

Army – CR  
Navy - EC  
Air Force - 11  
DLA – CC

Preparing activity:  
DLA – CC

Project 5950-2007-045

Review activities:

Army – AR, MI  
Navy – AS, MC, OS, SH  
Air Force – 19

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