

PERFORMANCE SPECIFICATION SHEET

COILS, RADIO FREQUENCY, CHIP, FIXED

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-83446.

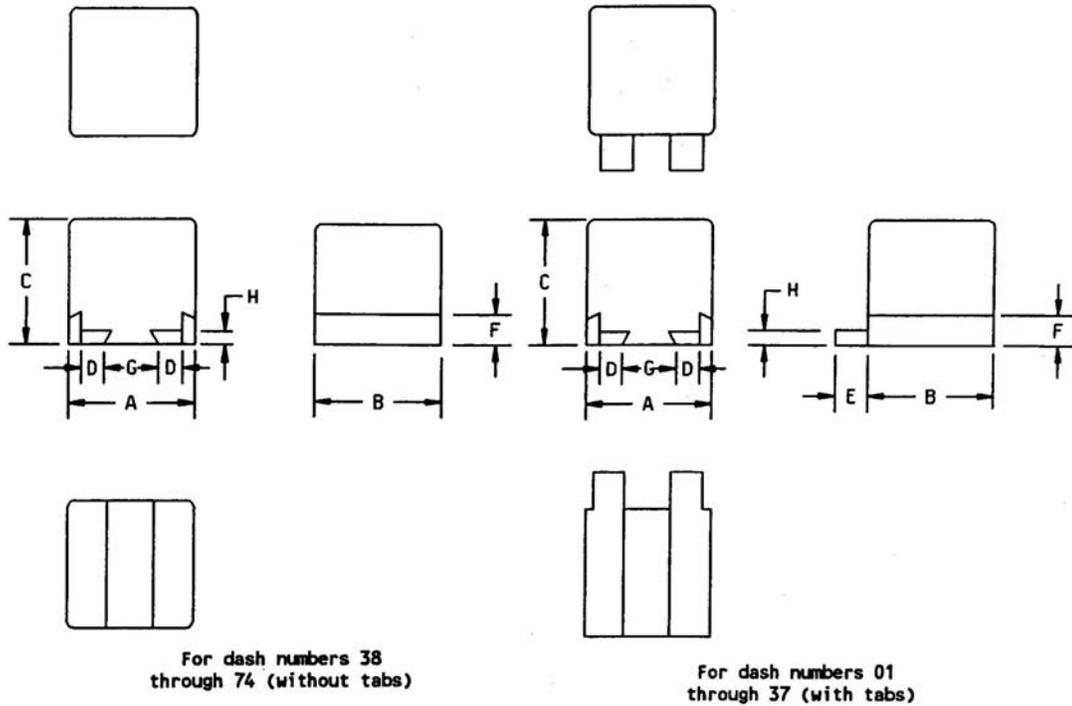


FIGURE 1. Fixed, chip coil.

For dash numbers 01 through 37 (with tabs)		
Ltr	Inches	mm
A	.110 max	2.79 max
B	.105 max	2.67 max
C	.085 max	2.16 max
D	.030 ±.005	0.76 ±0.13
E	.040 ±.010	1.02 ±0.25
F	.018 ±.005	0.46 ±0.13
G	.038 ±.010	0.97 ±0.25
H	.005 ±.002	0.13 ±0.05

For dash numbers 38 through 74 (without tabs)		
Ltr	Inches	mm
A	.110 max	2.79 max
B	.110 max	2.79 max
C	.085 max	2.16 max
D	.030 ±.005	0.76 ±0.13
F	.018 ±.005	0.46 ±0.13
G	.028 min .060 max	0.7112 min 1.524 max
H <u>1</u>	.005 ±.002	0.13 ±0.05

1 Applies to lead frame designs only.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 1. Fixed chip coil – Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Weight: 0.5 gram maximum.

Operating temperature range: -55°C to +125°C.

Temperature rise (at 90°C): 35°C.

Maximum operating temperature: 125°C.

Altitude: 70,000 feet.

Dielectric withstanding voltage: Method 301 of MIL-STD-202, test voltage 300 volts rms.

Barometric pressure: Method 105, test condition C, MIL-STD-202, (70,000 feet), test voltage 200 volts rms.

Electrical characteristics (initial): See table I.

Electrical characteristics (final): See table II.

Supersession data: A new part numbering system with codes for termination materials was incorporated with Revision A, superseding MIL-I-83446/5, dated 1 March 1979.

M83446/05-(dash number from table I) supersedes M83446/5-(dash number from table I).

Examples:

M83446/05-21A supersedes M83446/5-21.

M83446/05-03A supersedes M83446/5-3.

Part of Identifying Number (PIN): The part number shall be in the following form.

M83446/05-

04

Sequentially assigned dash  
Numbers (see table I)

B

Termination finish  
(see MIL-PRF-83446)

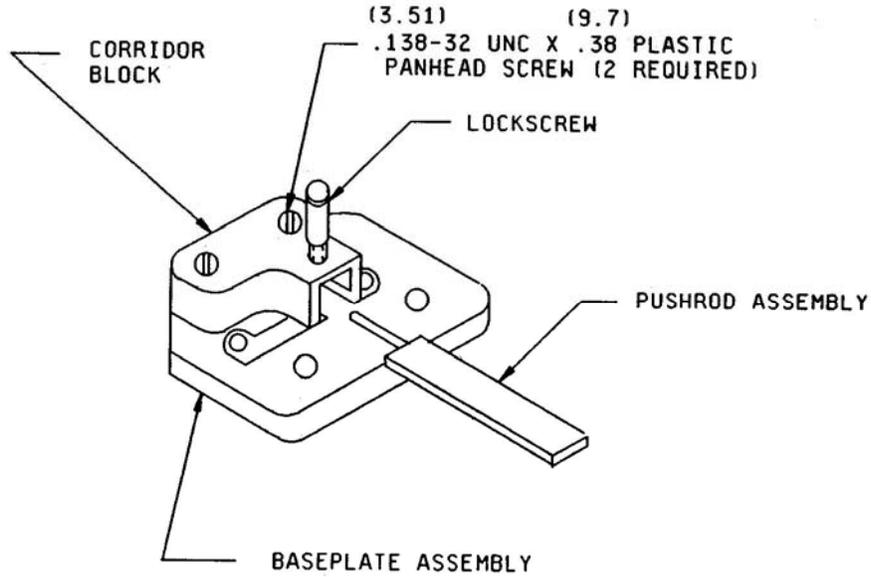
TABLE I. Electrical characteristics (initial) and dash numbers.

Dash number	Inductance ( $\pm 10\%$ ) $\mu\text{H}$	Q (min)	Q (typ)	Test frequency (MHz) <u>1/</u>	Self resonant frequency (min) MHz	DC resistance (max) ohms	Current (max) mA <u>2/</u>
01, 38	0.010	50	55	150	2000	0.025	750
02, 39	0.012	50	55	150	2000	0.025	750
03, 40	0.015	50	55	150	1800	0.040	750
04, 41	0.018	50	55	150	1500	0.040	750
05, 42	0.022	45	50	100	1400	0.040	750
06, 43	0.027	45	50	100	1200	0.040	750
07, 44	0.033	47	55	100	1200	0.050	640
08, 45	0.039	47	55	100	1200	0.070	600
09, 46	0.047	47	55	100	1000	0.080	550
10, 47	0.056	47	55	100	900	0.090	520
11, 48	0.068	47	55	100	900	0.10	480
12, 49	0.082	47	55	100	750	0.11	470
13, 50	0.100	47	55	50	700	0.11	470
14, 51	0.120	47	55	50	600	0.11	470
15, 52	0.150	47	55	50	500	0.12	450
16, 53	0.180	51	60	50	450	0.14	430
17, 54	0.220	51	60	50	420	0.20	350
18, 55	0.270	51	60	50	400	0.25	310
19, 56	0.330	51	60	50	320	0.30	280
20, 57	0.390	47	55	50	270	0.45	240
21, 58	0.470	47	55	25	250	0.50	230
22, 59	0.560	52	60	25	200	0.55	220
23, 60	0.680	52	60	25	180	0.58	210
24, 61	0.820	52	60	25	150	0.60	200
25, 62	1.00	52	60	25	120	0.65	190
26, 63	1.20	42	50	7.90	110	0.75	180
27, 64	1.50	42	50	7.90	100	1.1	160
28, 65	1.80	48	55	7.90	95	1.2	150
29, 66	2.20	48	55	7.90	90	1.3	140
30, 67	2.70	48	55	7.90	65	1.5	130
31, 68	3.30	48	55	7.90	55	1.8	120
32, 69	3.90	48	55	7.90	45	2.0	110
33, 70	4.70	48	55	7.90	43	2.3	100
34, 71	5.60	48	55	7.90	40	2.5	100
35, 72	6.80	46	53	7.90	38	2.6	98
36, 73	8.20	46	53	7.90	35	2.8	95
37, 74	10.0	46	53	7.90	33	3.3	87

1/ Test frequency range 0.25 through 25 MHz: For electrical characteristics measurements, use the TF-260Q-1 test fixture, or equivalent (see figure 3). Fixture inductance (approximately 0.028  $\mu\text{H}$ ) and residual Q-meter inductance (approximately 0.01  $\mu\text{H}$ ) should be subtracted from indicated inductance.

Test frequency range 25 through 150 MHz: For electrical characteristics measurements, use the TF-250RX-1 test fixture, or equivalent (see figure 2). Fixture inductance (approximately 0.009  $\mu\text{H}$ ) should be subtracted from indicated inductance.

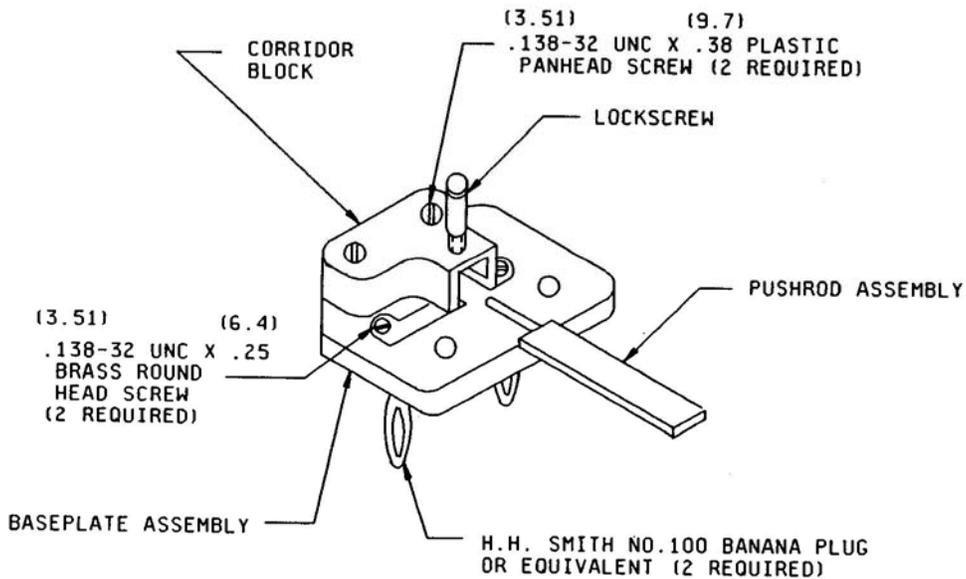
2/ Maximum current allowed is not to exceed the specified temperature rise.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Metric equivalents are in parentheses.

FIGURE 2. Typical chip coil test fixture (TF-250RX-1, or equivalent).



NOTES:

1. Dimensions are in inches.
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FIGURE 3. Typical chip coil test fixture (TF-260Q-1, or equivalent).

TABLE II. Electrical characteristics (final).

Inspection group	Allowable variation from initial measurements			
	Inductance (Percent)	DC resistance	Self-resonant frequency (Percent)	Q (Percent)
Qualification inspection				
Group II	±5	±(3% +.001 ohm)	-8	-10
Group IV	±5	±(2% +.001 ohm)	-10	-10
Group V	±2	---	---	-10
Conformance inspection group C				
Subgroup II	±5	±(3% +.001 ohm)	-8	-10
Subgroup IV	±5	±(3% +.001 ohm)	-8	-10

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-83446  
MIL-STD-202

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

Preparing activity:  
DLA – CC  
  
(Project 5950-2006-008)

Review activities:  
Army – MI  
Navy – AS, OS  
Air Force – 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.