

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.

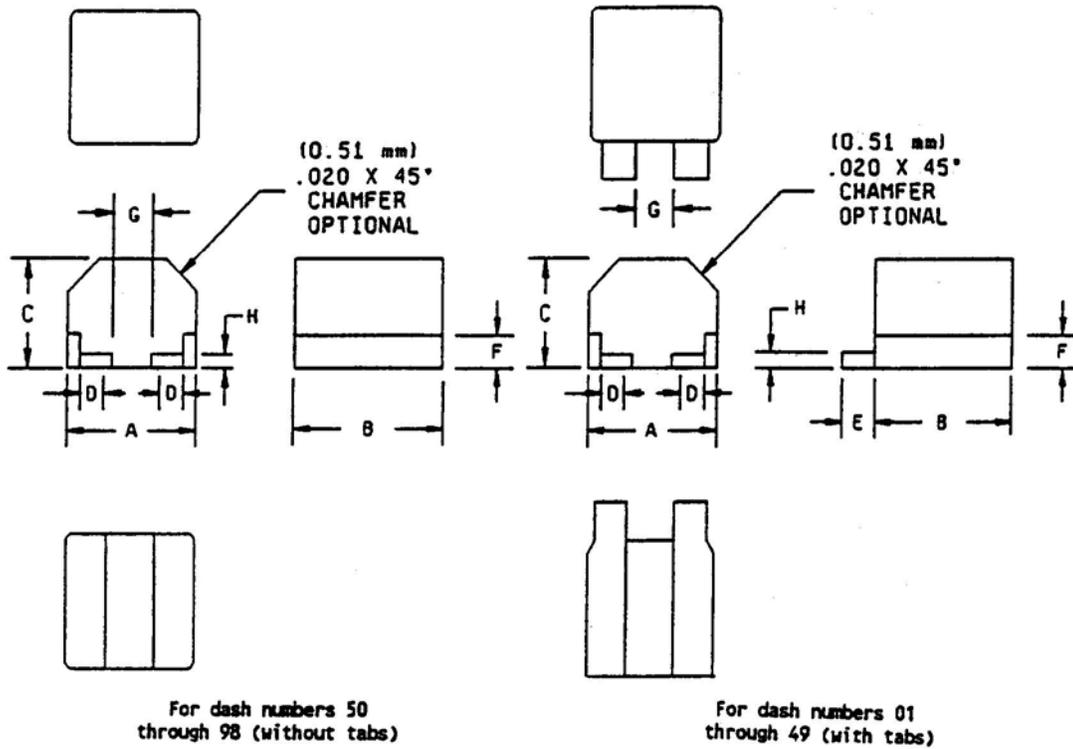


FIGURE 1. Fixed chip coil.

For dash numbers 01 through 49 (with tabs)		
Ltr	Inches	mm
A	.110 max	2.79 max
B	.105 max	2.67 max
C	.070 max	1.78 max
D	.030 ±.005	0.76 ±0.13
E	.040 +.015 -.010	1.02 +0.38 -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 50 through 98 (without tabs)		
Ltr	Inches	mm
A	.110 max	2.79 max
B	.110 max	2.79 max
C	.070 max	1.78 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-83446/8, dated 1 March 1979.

M83446/08-(dash number from table I) supersedes M83446/8-(dash number from table I).

Examples:

M83446/08-21A supersedes M83446/8-21.

M83446/08-03A supersedes M83446/8-3.

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

M83446/08-

04

|
Sequentially assigned dash
Numbers (see table I and II)

B

|
Termination finish
(see MIL-PRF-83446)

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

Dash number	Inductance $\pm 10\%$ (μH)	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, 50	0.010	50	55	150	2000	0.025	750
02, 51	0.012	50	55	150	2000	0.025	750
03, 52	0.015	50	55	150	1800	0.040	750
04, 53	0.018	50	55	150	1500	0.040	750
05, 54	0.022	45	50	100	1400	0.040	750
06, 55	0.027	45	50	100	1200	0.040	750
07, 56	0.033	47	55	100	1100	0.050	640
08, 57	0.039	47	55	100	1000	0.07	600
09, 58	0.047	47	55	100	900	0.08	550
10, 59	0.056	47	55	100	850	0.09	520
11, 60	0.068	47	55	100	840	0.10	480
12, 61	0.082	47	55	100	750	0.11	470
13, 62	0.100	47	55	50	580	0.11	470
14, 63	0.120	47	55	50	240	0.11	470
15, 64	0.150	47	55	50	230	0.12	450
16, 65	0.180	51	60	50	230	0.14	430
17, 66	0.220	51	60	50	230	0.20	350
18, 67	0.270	51	60	50	230	0.25	310
19, 68	0.330	51	60	50	200	0.30	280
20, 69	0.390	47	55	50	190	0.45	240
21, 70	0.470	47	55	25	180	0.50	230
22, 71	0.560	45	53	25	170	0.50	230
23, 72	0.680	45	53	25	160	0.50	230
24, 73	0.820	45	53	25	150	0.50	230
25, 74	1.00	45	53	25	130	0.50	230
26, 75	1.20	36	43	7.90	120	0.60	200
27, 76	1.50	36	43	7.90	100	1.1	160
28, 77	1.8	38	45	7.90	90	1.1	160
29, 78	2.20	38	45	7.9	85	1.5	130

See footnotes at end of table.

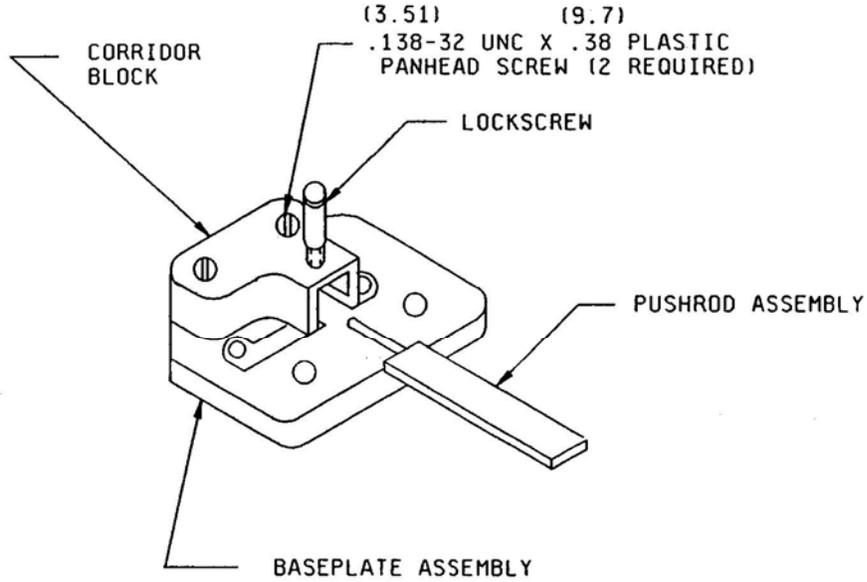
TABLE I. Electrical characteristics (initial) and dash numbers.

Dash number	Inductance $\pm 10\%$ (μH)	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>
30, 79	2.70	41	48	7.90	80	1.7	125
31, 80	3.30	42	50	7.90	75	1.8	120
32, 81	3.90	42	50	7.90	65	2.0	110
33, 82	4.70	41	48	7.90	55	2.3	100
34, 83	5.60	41	48	7.90	45	2.6	98
35, 84	6.80	36	43	7.90	40	2.8	94
36, 85	8.20	36	43	7.90	35	3.0	90
37, 86	10.0	36	43	7.90	33	3.3	87
38, 87	12.0	36	43	7.90	26	4.0	79
39, 88	15.0	32	38	2.50	24	4.2	79
40, 89	18.0	32	38	2.50	21	4.4	75
41, 90	22.0	32	38	2.50	19	7.5	57
42, 91	27.0	32	38	2.50	14	8.0	55
43, 92	33.0	30	35	2.50	12	13.0	45
44, 93	39.0	30	35	2.50	10	17.0	38
45, 94	47.0	30	35	2.50	9.0	19.0	36
46, 95	56.0	30	35	2.50	8.5	23.0	33
47, 96	68.0	30	35	2.50	8.2	25.0	32
48, 97	82.0	30	35	2.50	8.0	28.0	30
49, 98	100.0	30	35	2.50	7.0	31.0	28

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 μH) and residual Q-meter inductance (approximately 0.01 μH) 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 μH) should be subtracted from indicated inductance.

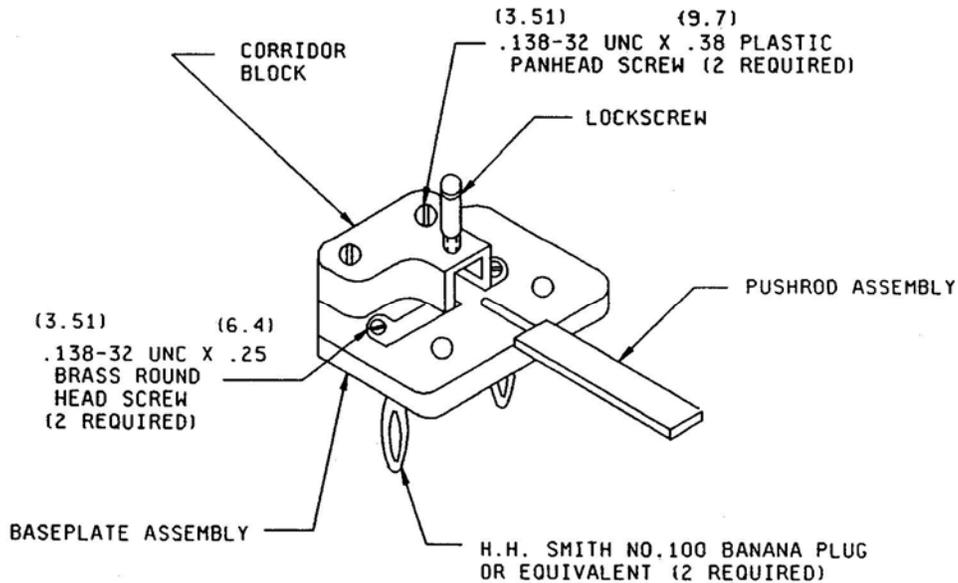
2/ Maximum current allowed is not to exceed the specified temperature rise.



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 5950-2006-010)

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>.