

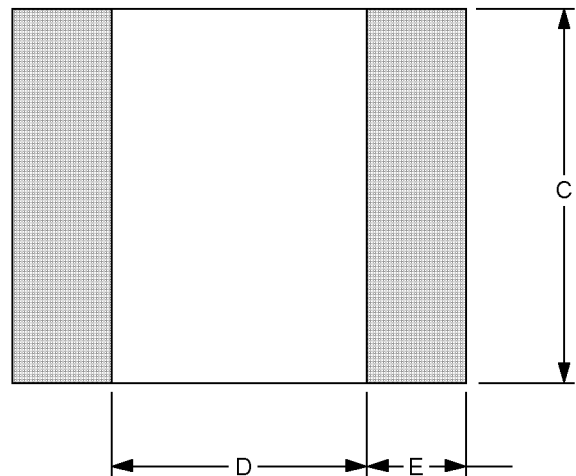
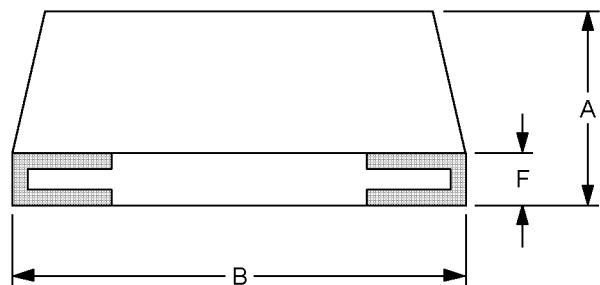
INCH-POUND

MIL-PRF-83446/38
w/AMENDMENT 1
12 June 2020
SUPERSEDING
MIL-PRF-83446/38
24 December 2003

PERFORMANCE SPECIFICATION SHEET
COILS, RADIO FREQUENCY, CHIP, FIXED
SURFACE MOUNT

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

The requirements for acquiring the product described herein shall
consist of this specification sheet and MIL-PRF-83446.



	Inches	mm
A	0.080 Max.	2.03 Max.
B	0.145 to 0.155	3.68 to 3.94
C	0.115 to 0.125	2.92 to 3.18
D	0.070 Min.	1.78 Min.
E	0.020 to 0.030	0.508 to 0.762
F	0.020 Max. (Typ)	0.51 Max.

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

FIGURE 1. Dimensions and configuration.



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TABLE I. Electrical characteristics (initial).

Dash number	Inductance (μH)	Tolerance (percent)	Q (min)	Test frequency MHz	Self- 1/ resonant frequency MHz (min)	DC resistance ohms (max)	Current rating mA (max)
Phenolic Core							
-01	0.010	±20	48	150	900	0.050	1590
-02	0.012	±20	48	150	900	0.055	1515
-03	0.015	±20	48	150	900	0.060	1450
-04	0.018	±20	48	150	900	0.065	1395
-05	0.022	±20	48	100	900	0.070	1345
-06	0.027	±20	48	100	900	0.075	1295
-07	0.033	±20	48	100	900	0.075	1295
-08	0.039	±20	48	100	900	0.080	1255
-09	0.047	±20	48	100	850	0.085	1220
-10	0.056	±20	48	100	800	0.088	1195
-11	0.068	±20	48	100	750	0.093	1165
-12	0.082	±20	48	100	700	0.095	1150
Iron Core							
-13	0.100	±10	50	25.0	600	0.075	1295
-14	0.120	±10	50	25.0	550	0.075	1295
-15	0.150	±10	50	25.0	420	0.085	1220
-16	0.180	±10	50	25.0	390	0.10	1125
-17	0.220	±10	50	25.0	340	0.11	1070
-18	0.270	±10	50	25.0	290	0.12	1025
-19	0.300	±10	50	25.0	250	0.13	985
-20	0.330	±10	50	25.0	230	0.14	950
-21	0.360	±10	50	25.0	220	0.15	915
-22	0.390	±10	50	25.0	210	0.16	890
-23	0.430	±10	50	25.0	200	0.17	860
-24	0.470	±10	50	25.0	190	0.18	835
-25	0.560	±10	50	25.0	180	0.20	795
-26	0.680	±10	50	25.0	170	0.23	740
-27	0.820	±10	50	25.0	150	0.26	695
-28	1.00	±5	50	25.0	140	0.34	610
-29	1.20	±5	36	7.9	130	0.42	545
-30	1.50	±5	36	7.9	120	0.56	475
-31	1.80	±5	36	7.9	100	0.76	410
-32	2.20	±5	36	7.9	98	0.93	370
-33	2.70	±5	40	7.9	91	1.2	325
-34	3.30	±5	40	7.9	76	1.3	310
-35	3.90	±5	47	7.9	48	1.5	290
-36	4.70	±5	47	7.9	46	1.7	275
-37	5.60	±5	44	7.9	42	1.8	270
-38	6.80	±5	40	7.9	39	1.9	255
-39	8.20	±5	40	7.9	30	2.4	230
-40	10.0	±5	46	7.9	26	3.2	200
-41	12.0	±5	41	2.5	24	3.7	185
-42	15.0	±5	46	2.5	23	3.8	180
-43	18.0	±5	46	2.5	22	4.2	175
-44	22.0	±5	47	2.5	18	5.5	150
-45	27.0	±5	47	2.5	17	6.1	145

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TABLE I. Electrical characteristics (initial). - Continued

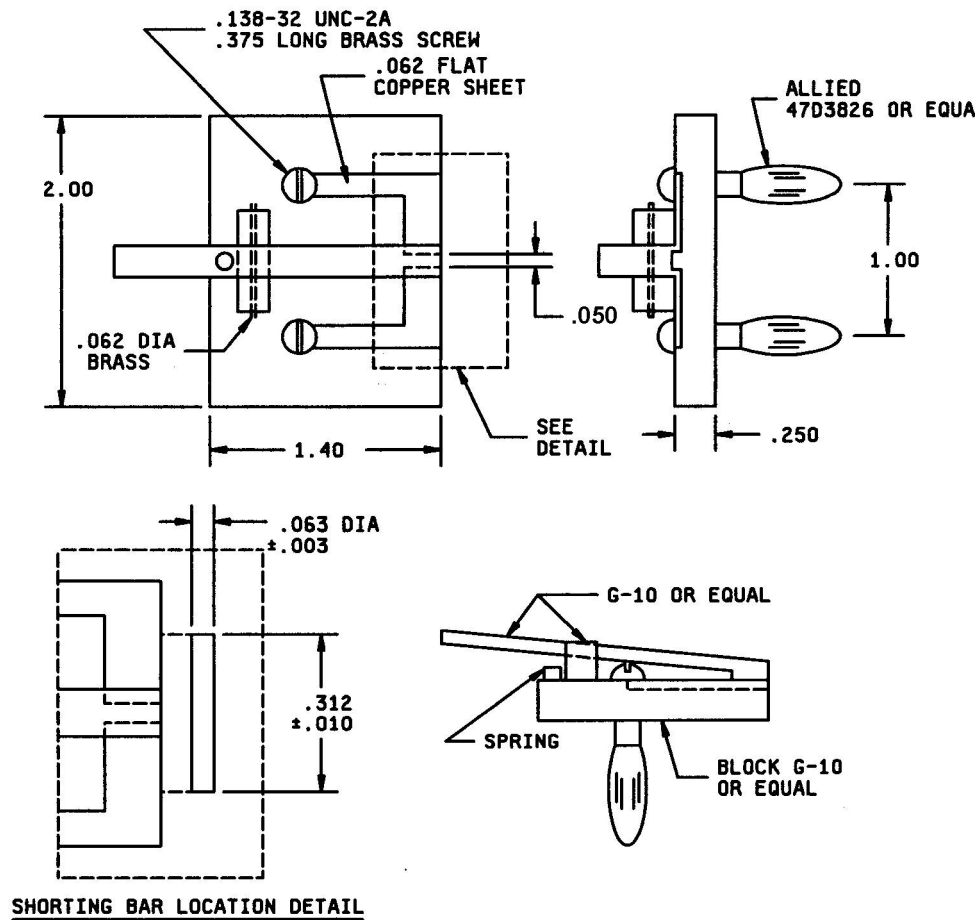
Dash number	Inductance (μH)	Tolerance (percent)	Q (min)	Test frequency MHz	Self- 1/ resonant frequency MHz (min)	DC resistance ohms (max)	Current rating mA (max)
Iron Core							
-46	33.0	±5	47	2.5	13	6.6	140
-47	39.0	±5	50	2.5	12	7.0	135
Ferrite Core							
-48	47.0	±5	50	2.5	11.0	8.3	125
-49	56.0	±5	50	2.5	10.0	8.9	120
-50	68.0	±5	50	2.5	9.1	13.0	100
-51	82.0	±5	50	2.5	8.6	14.0	95
-52	100.0	±5	47	2.5	7.6	16.0	90
-53	120.0	±5	30	0.79	6.8	17.0	85
-54	150.0	±5	32	0.79	5.6	18.0	80
-55	180.0	±5	32	0.79	4.5	22.0	75
-56	220.0	±5	32	0.79	4.0	28.0	70
-57	270.0	±5	32	0.79	3.8	32.0	65
-58	330.0	±5	32	0.79	3.5	44.0	55
-59	390.0	±5	32	0.79	3.4	48.0	50
-60	470.0	±5	28	0.79	3.2	75.0	42
-61	560.0	±5	28	0.79	2.8	81.0	40

1/ The specified minimum values of Self Resonant Frequency (SRF) over 250 MHz are estimates and to be used for design reference only.

TABLE II. Electrical characteristics (final).

Inspection group	Allowable percent variation from the initial measurement			
Qualification inspection:	Inductance	Q	Self-resonant frequency 1/	DC resistance
Group II	±5	-10	-8	±3 (+.001 ohm)
Group IV	±5	-10	-10	±2 (+.001 ohm)
Group V	±2	-10	----	----
Conformance inspection:				
Group C				
Subgroup II	±5	-10	-8	±3 (+.001 ohm)
Subgroup IV	±5	-10	-8	±3 (+.001 ohm)

1/ Not applicable to Self Resonant Frequency (SRF) exceeding 250 MHz.



NOTES:

1. Dimensions are in inches.
2. The total fixture and residual inductance is approximately .049 μ H (for references only).

FIGURE 2. Typical chip coil test fixture.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Bond strength: Force 0.5 pounds.

Weight: 0.19 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.

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Dielectric withstanding voltage: MIL-STD-202-301, test voltage 200 V rms.

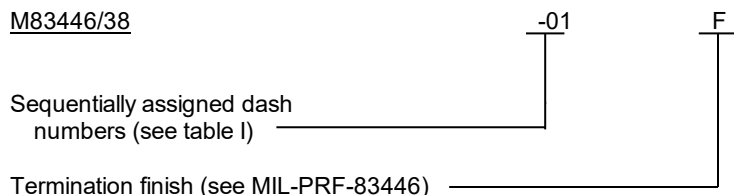
Barometric pressure: MIL-STD-202-105, test condition C, (70,000 feet), test voltage 80 V rms.

Electrical characteristics (initial): See table I.

Electrical characteristics (final): See table II.

Test fixture: Test shall be performed using test fixture shown on figure 2 or equivalent.

Part or Identifying Number (PIN): The PIN shall be in the following form:



Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Referenced documents. In addition to MIL-PRF-83446, this document references the following:

MIL-STD-202-105
MIL-STD-202-301

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5950-2020-002)

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 <https://assist.dla.mil>.