

INCH-POUND

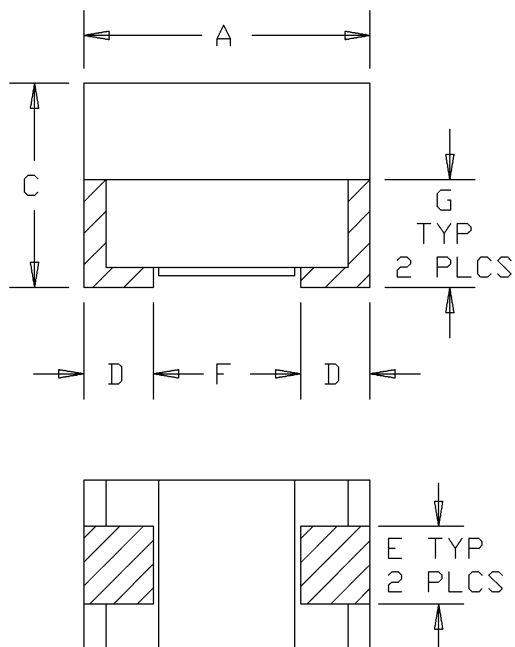
MIL-PRF-83446/39
w/AMENDMENT 1
12 June 2020
SUPERSEDING
MIL-PRF-83446/39
11 August 2004

PERFORMANCE SPECIFICATION SHEET

COILS, RADIO FREQUENCY, CHIP, FIXED, UNSHIELDED,
MOLDED, 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	0.166 to 0.190	4.22 to 4.83
B	0.118 to 0.134	3.00 to 3.40
C	0.118 to 0.134	3.00 to 3.40
D	0.015 Min.	0.38 Min.
E	0.054 to 0.078	1.37 to 1.98
F	0.118 (Ref. Only)	3.00 (Ref. Only)
G	0.066 (Ref. Only)	1.68 (Ref only)

NOTES:

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

FIGURE 1. Dimensions and configuration.



TABLE I. Electrical characteristics (initial).

Dash number	Inductance (μH)	Inductance Tolerance (%)	Q (min)	Test frequency MHz	Self- 1/ resonant frequency MHz (min)	DC resistance ohms (max)	Current rating mA (max)
-01	0.010	±20	40	50	1,000	0.10	1,230
-02	0.012	±20	40	50	1,000	0.10	1,230
-03	0.015	±20	40	50	1,000	0.10	1,230
-04	0.018	±20	40	50	1,000	0.10	1,230
-05	0.022	±20	40	50	1,000	0.10	1,230
-06	0.027	±20	40	50	1,000	0.15	1,000
-07	0.033	±20	40	50	1,000	0.15	1,000
-08	0.039	±20	30	50	1,000	0.20	870
-09	0.047	±20	30	50	1,000	0.20	870
-10	0.056	±20	30	50	850	0.25	770
-11	0.068	±20	25	50	750	0.25	770
-12	0.082	±20	25	50	750	0.25	700
-13	0.10	±10	30	25	650	0.30	818
-14	0.12	±10	30	25	600	0.30	818
-15	0.15	±10	30	25	500	0.30	818
-16	0.18	±10	30	25	400	0.35	757
-17	0.22	±10	30	25	350	0.40	708
-18	0.27	±10	30	25	300	0.45	668
-19	0.33	±10	30	25	250	0.55	604
-20	0.39	±10	30	25	220	0.70	535
-21	0.47	±10	30	25	190	0.80	501
-22	0.56	±10	30	25	170	1.20	409
-23	0.68	±10	30	25	150	1.40	379
-24	0.82	±10	30	25	140	1.60	354
-25	1.0	±5	50	7.9	100	0.50	634
-26	1.2	±5	50	7.9	80	0.55	604
-27	1.5	±5	50	7.9	70	0.60	578
-28	1.8	±5	50	7.9	60	0.65	556
-29	2.2	±5	50	7.9	55	0.70	535
-30	2.7	±5	50	7.9	50	0.75	517
-31	3.3	±5	50	7.9	45	0.80	501
-32	3.9	±5	50	7.9	40	0.90	472
-33	4.7	±5	50	7.9	35	1.00	448
-34	5.6	±5	50	7.9	33	1.10	427
-35	6.8	±5	50	7.9	27	1.20	409
-36	8.2	±5	50	7.9	25	1.40	375
-37	10	±5	50	7.9	20	1.60	354
-38	12	±5	50	2.5	18	2.00	317
-39	15	±5	50	2.5	17	2.50	283
-40	18	±5	50	2.5	15	2.80	268
-41	22	±5	50	2.5	13	3.20	250
-42	27	±5	50	2.5	12	3.60	236
-43	33	±5	50	2.5	11	4.00	224
-44	39	±5	50	2.5	10	4.50	211

See footnote at end of table.

TABLE I. Electrical characteristics (initial) - Continued.

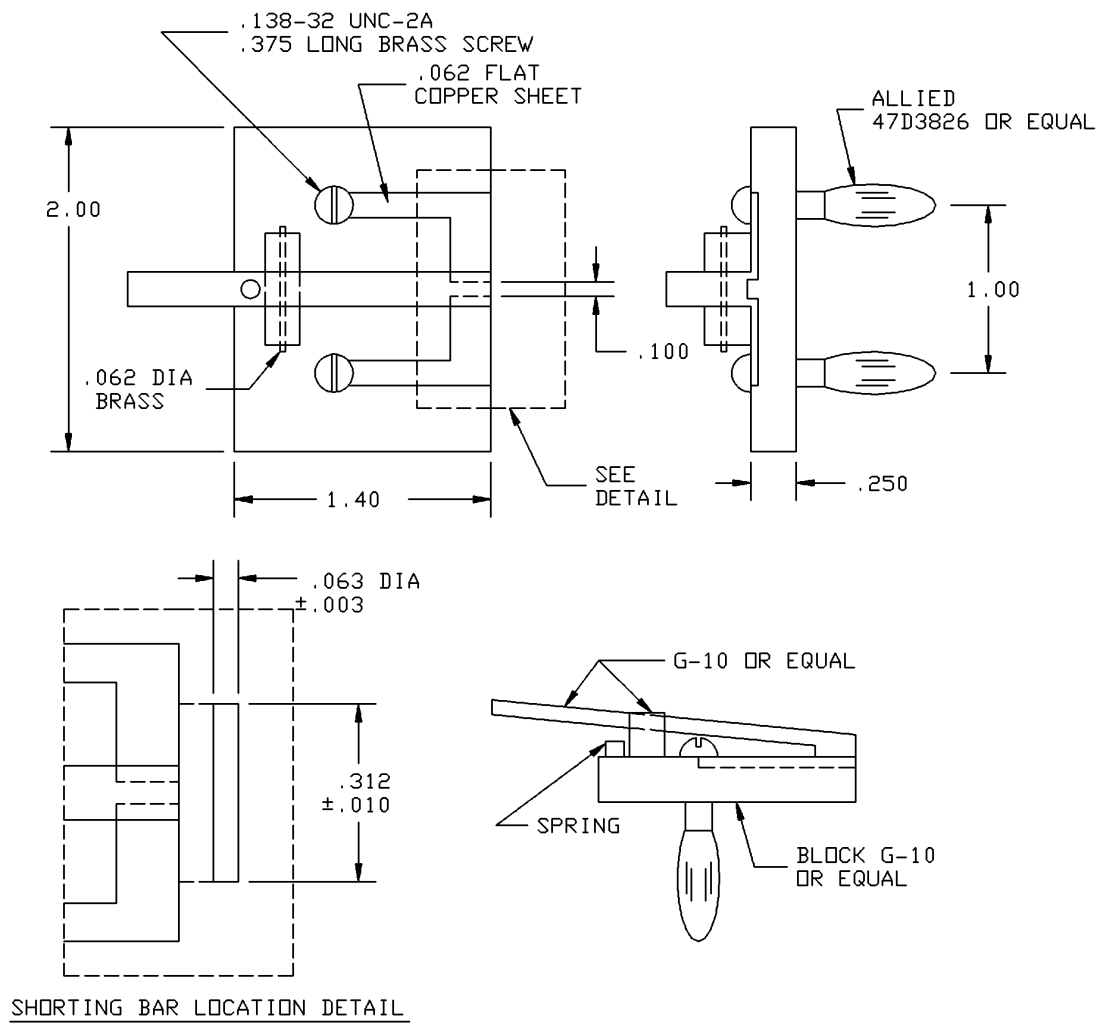
Dash number	Inductance (μH)	Inductance Tolerance (%)	Q (min)	Test frequency MHz	Self- <u>1</u> / resonant frequency MHz (min)	DC resistance ohms (max)	Current rating mA (max)
-45	47	±5	50	2.5	10	5.00	200
-46	56	±5	50	2.5	9	5.50	191
-47	68	±5	50	2.5	9	6.00	183
-48	82	±5	50	2.5	8	7.00	169
-49	100	±5	50	2.5	8	8.00	158
-50	120	±5	40	0.79	6	8.0	158
-51	150	±5	40	0.79	6	9.0	149
-52	180	±5	40	0.79	5	9.5	145
-53	220	±5	40	0.79	4	10.0	142
-54	270	±5	40	0.79	4	12.0	129
-55	330	±5	40	0.79	3.5	14.0	120
-56	390	±5	40	0.79	3.0	20.0	100
-57	470	±5	40	0.79	3.0	26.0	88
-58	560	±5	30	0.79	3.0	30.0	82
-59	680	±5	30	0.79	3.0	30.0	82
-60	820	±5	30	0.79	2.5	45.0	67
-61	1,000	±5	30	0.79	2.5	60.0	55

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 <u>1</u> /	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)

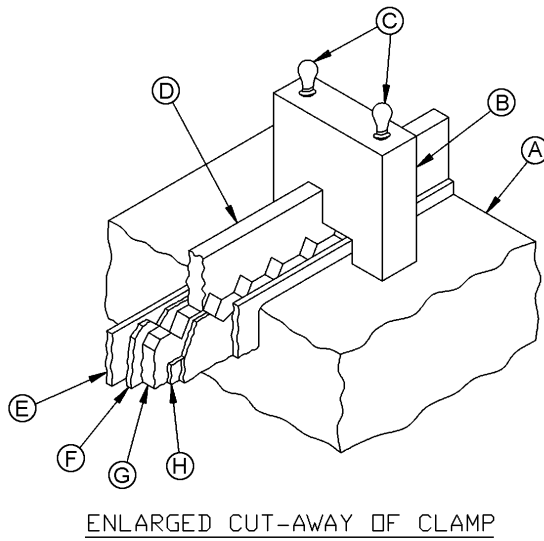
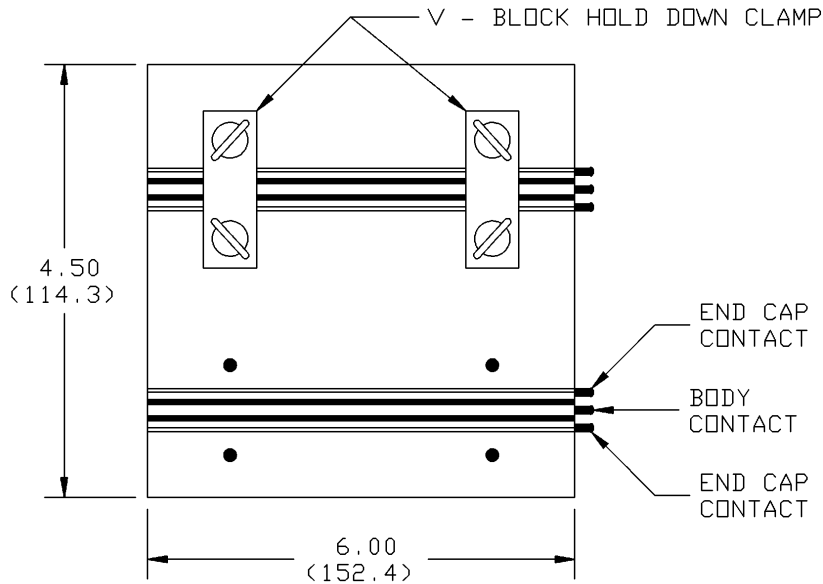
1/ Not applicable to Self Resonant Frequency (SRF) exceeding 250 MHz.



NOTES:

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

FIGURE 2. Typical chip coil test fixture.



Legend	
Ltr	Description
A	G-10 base
B	Upper V-block hold-down clamp
C	Clamp screws
D	Upper V-block (body contact)
E	End cap contact retaining wall
F	End cap contact V-block (in contact with E)
G	Lower V-block (body contact)
H	G-10 insulators (separating G from F/E)

NOTES:

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

FIGURE 3. Test fixture for insulation resistance, dielectric withstanding voltage and barometric pressure.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Bond strength: Force 2.0 pounds.

Weight: 0.30 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: MIL-STD-202-301, test voltage 200 V rms.

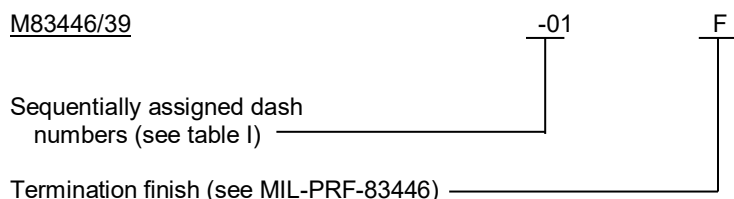
| Barometric pressure: MIL-STD-202-105, test condition C, (70,000 feet), test voltage 80 V rms.

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 and 3, or equivalent.

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



Note: "Suffix "P" denotes lead (Pb) free solderable termination finish"

| 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 5950-2020-003)

Review activities:
Navy - AS, OS
Air Force - 19

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