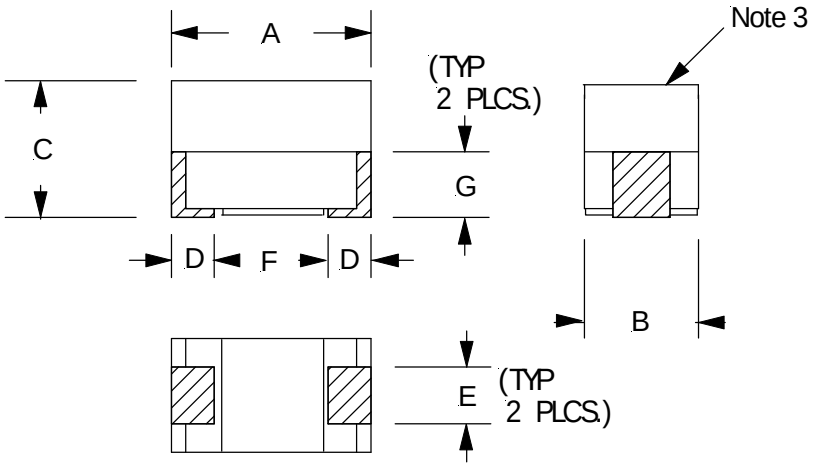
PERFORMANCE SPECIFICATION SHEET

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.



Dim.	Inches	Millimeters
A	0.118 to 0.142	3.00 to 3.60
B	0.085 to 0.105	2.16 to 2.67
C	0.081 to 0.106	2.06 to 2.69
D	0.016 min.	0.41 min.
E	0.035 to 0.061	0.89 to 1.55
F	0.070 (Ref. Only)	1.78 (Ref. Only)
G	0.054 (Ref. Only)	1.37 (Ref. Only)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Marking shall be on the top surface of the coil.

FIGURE 1. Dimensions and configuration.

REQUIREMENTS:

Dimensions and configuration: See Figure 1.

Bond Strength: Force 2.0 pounds, MIL-STD-883, Method 2011, Test Condition F.

Material: Phenolic core (inductance values 0.0018 to 0.082 uH, inclusive); Iron core (inductance values 0.10 to 0.82 uH, inclusive); Ferrite core (inductance values 1.0 to 100 uH, inclusive).

Case: Epoxy molding compound.

Weight: 0.10 gram maximum.

Operating temperature range: -55ºC to +125ºC.

Temperature rise (at 90ºC): 35ºC maximum.

Altitude: 70,000 feet maximum.

Dielectric Withstanding Voltage: MIL-STD-202, Method 301, test voltage of 200 volts rms.

Barometric Pressure: MIL-STD-202, Method 105, Test Condition C (70,000 feet), test voltage of 80 volts rms.

Insulation Resistance: MIL-STD-202, Method 302, Test Condition A, 1,000 megohms minimum.

Electrical characteristics (initial): See Table I.

Solderability: MIL-STD-202, Method 208, Test Method B. Both terminations are to be immersed simultaneously.

Vibration: MIL-STD-202, Method 204, Test condition D. During testing, each part to be monitored for electrical continuity. Any discontinuity exceeding 100 microseconds shall be cause for rejection.

Mechanical Shock: MIL-STD-202, Method 213, Test condition I. After test, parts are to be inspected for mechanical damage and verified for electrical continuity.

Vibration and Mechanical Shock testing shall be performed as part of Group V tests for qualification (before Moisture Resistance) and as part of subgroup IV (semiannually) for Group C testing (after Electrical Characteristics (initial)). Parts shall be mounted on test substrates.

Moisture Resistance: MIL-STD-202, Method 106. Polarization voltage is not applicable. Step 7a shall be performed during any five (5) of the first eight (8) cycles only.

Electrical characteristics (final): See Table II.

Test fixtures: Tests shall be performed using test fixture shown in Figure 2, or equivalent.

Part or Identifying Number (PIN): The PIN shall be in accordance with MIL-PRF-83446:

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

M83446/41 -01 F H

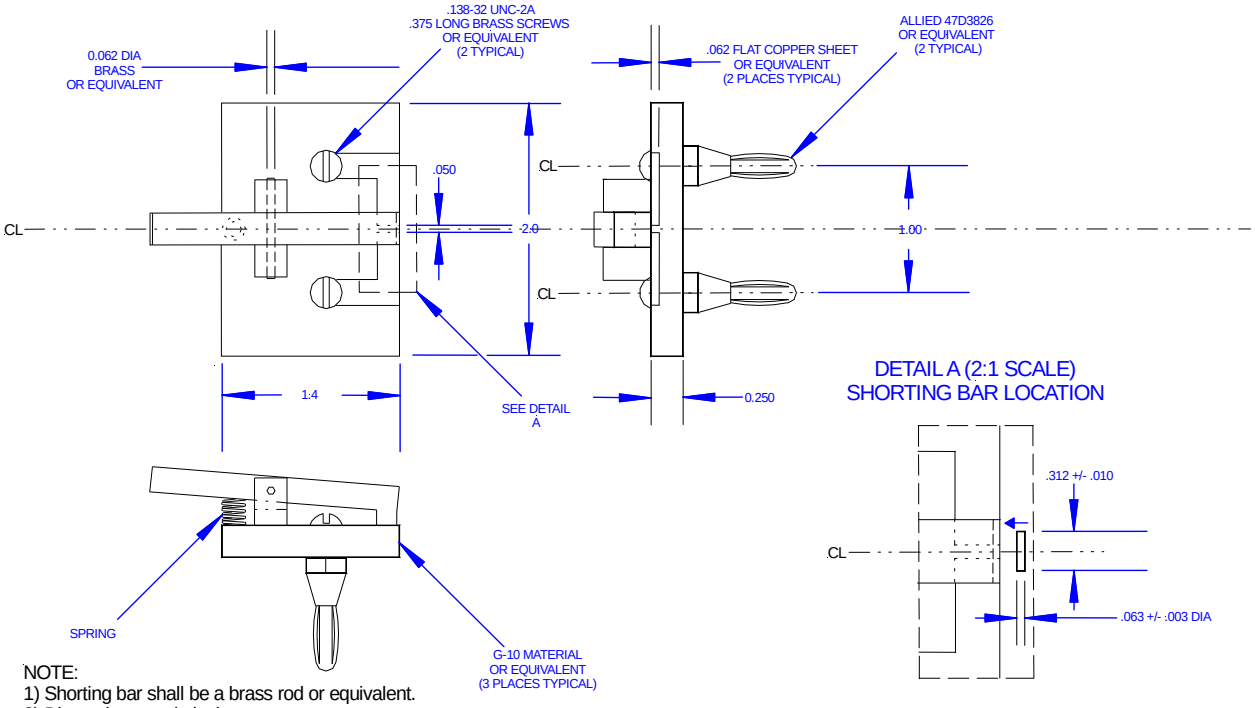
Base Number

Sequentially assigned dash numbers (see Table I)

Termination finish (see MIL-PRF-83446)

Inductance tolerance (see MIL-PRF-83446)

Referenced documents. In addition to MIL-PRF-83446, this document references MIL-STD-202 and MIL-STD-883.



NOTE:
1) Shorting bar shall be a brass rod or equivalent.
2) Dimensions are in inches.
3) Metric equivalents are given for general information only.

INCHES	MM
.003	.08
.010	.25
.050	1.27
.062	1.57
.063	1.60
.138	3.51
.250	6.35
.312	7.92
.375	9.52
1.000	25.40
1.400	35.56
2.000	50.80

FIGURE 2. Typical coil test fixture. (TF-283, or equivalent).

Table I Electrical characteristics (initial) and dash numbers.

Dash Number	Inductance (µH)	Inductance Tolerance (%)	Q (min)	Test Frequency (MHz)	Self-resonant frequency (MHz) (min)	DC resistance (ohms) (max)	Current rating (mA) (max) 1/
-01	0.0018	±5, ±10, ±20	40	50	2700	0.050	1,562
-02	0.0022	±5, ±10, ±20	40	50	2700	0.050	1,562
-03	0.0027	±5, ±10, ±20	40	50	2700	0.050	1,562
-04	0.0033	±5, ±10, ±20	40	50	2700	0.050	1,562
-05	0.0039	±5, ±10, ±20	40	50	2700	0.050	1,562
-06	0.0047	±5, ±10, ±20	40	50	2700	0.050	1,562
-07	0.0056	±5, ±10, ±20	40	50	2700	0.050	1,562
-08	0.0068	±5, ±10, ±20	40	50	2700	0.050	1,562
-09	0.0082	±5, ±10, ±20	40	50	2700	0.050	1,562
-10	0.010	±5, ±10	30	50	2000	0.13	966
-11	0.012	±5, ±10	30	50	1850	0.14	931
-12	0.015	±5, ±10	30	50	1700	0.16	871
-13	0.018	±5, ±10	30	50	1550	0.18	821
-14	0.022	±5, ±10	30	50	1300	0.20	779
-15	0.027	±5, ±10	30	50	1150	0.22	743
-16	0.033	±5, ±10	30	50	1000	0.24	711
-17	0.039	±5, ±10	30	50	900	0.27	670
-18	0.047	±5, ±10	30	50	800	0.30	636
-19	0.056	±5, ±10	30	50	750	0.33	606
-20	0.068	±5, ±10	30	50	700	0.36	580
-21	0.082	±5, ±10	30	50	625	0.40	551
-22	0.10	±5, ±10	30	25	550	0.20	1,018
-23	0.12	±5, ±10	30	25	500	0.22	971
-24	0.15	±5, ±10	30	25	450	0.25	910
-25	0.18	±5, ±10	30	25	400	0.28	860
-26	0.22	±5, ±10	30	25	350	0.32	805
-27	0.27	±5, ±10	30	25	320	0.36	759
-28	0.33	±5, ±10	30	25	300	0.40	720
-29	0.39	±5, ±10	30	25	250	0.45	679
-30	0.47	±5, ±10	30	25	220	0.50	644
-31	0.56	±5, ±10	30	25	180	0.55	614
-32	0.68	±5, ±10	30	25	160	0.60	588
-33	0.82	±5, ±10	30	25	140	0.67	556
-34	1.0	±5	30	7.9	120	0.70	515
-35	1.2	±5	30	7.9	100	0.75	497
-36	1.5	±5	30	7.9	85	0.85	467
-37	1.8	±5	30	7.9	75	0.90	454
-38	2.2	±5	30	7.9	70	1.0	431
-39	2.7	±5	30	7.9	65	1.1	411
-40	3.3	±5	30	7.9	58	1.2	393
-41	3.9	±5	30	7.9	50	1.3	378
-42	4.7	±5	30	7.9	45	1.5	352
-43	5.6	±5	30	7.9	42	1.6	341
-44	6.8	±5	30	7.9	40	1.8	321
-45	8.2	±5	30	7.9	35	2.0	305
-46	10	±5	30	7.9	30	2.1	297

See footnote at bottom of table.

Table I Electrical characteristics (initial) and dash numbers – continued.

Dash Number	Inductance (µH)	Inductance Tolerance (%)	Q (min)	Test Frequency (MHz)	Self-resonant frequency (MHz) (min)	DC resistance (ohms) (max)	Current rating (mA) (max) 1/
-47	12	±5	30	2.5	28	2.5	272
-48	15	±5	30	2.5	25	2.8	257
-49	18	±5	30	2.5	23	3.3	237
-50	22	±5	30	2.5	20	3.7	224
-51	27	±5	30	2.5	18	5.0	193
-52	33	±5	30	2.5	15	5.6	182
-53	39	±5	30	2.5	14	6.4	170
-54	47	±5	30	2.5	13	7.0	163
-55	56	±5	30	2.5	11	8.0	152
-56	68	±5	30	2.5	10	9.0	144
-57	82	±5	30	2.5	9	10.0	136
-58	100	±5	30	2.5	8	13.0	120

1/ Maximum current allowed not to exceed the specified maximum temperature rise.

Table II Electrical characteristics (final).

Inspection group	Allowable percent variation from initial measurement			
	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

Custodians:
Army – CR
Navy – EC
Air Force – 85
DLA – CC

Review Activities:
Army – AR, CR4, MI
Navy – AS, CG, MC, OS, SH
Air Force – 19, 99

Preparing activity:
DLA – CC

(Project 5950-2015-021)

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.