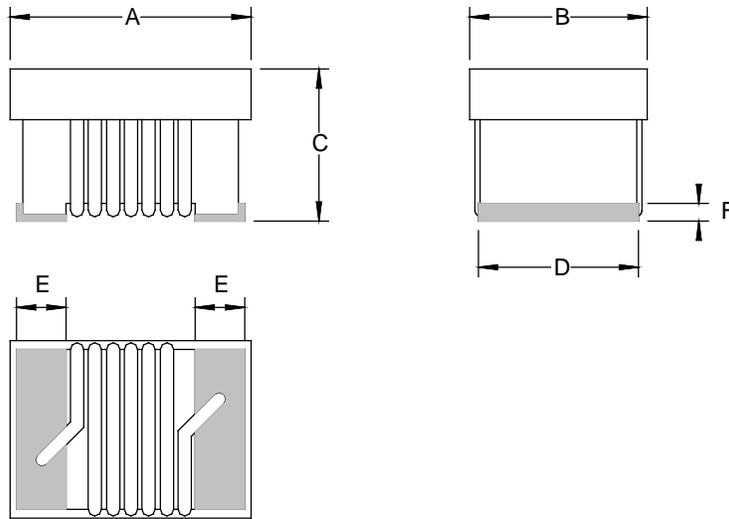


PERFORMANCE SPECIFICATION SHEET

COILS, RADIO FREQUENCY, OPEN CONSTRUCTION,  
CERAMIC CORE, FIXED, SURFACE MOUNT  
ESTABLISHED RELIABILITY & NON-ESTABLISHED RELIABILITY

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

The requirements for acquiring the product herein shall  
consist of this specification sheet and MIL-PRF-39010



Notes:

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

	Inches	mm
A	0.115 Max	2.92 Max
B	0.110 Max	2.80 Max
C	0.090 Max	2.28 Max
D	0.080 (Ref Only)	2.03 (Ref Only)
E	0.020 (Ref Only)	0.50 (Ref Only)
F	0.008 (Ref. Only)	0.20 (Ref Only)

## REQUIREMENTS

Interface and physical dimensions: See Figure 1

Material: Ceramic core

Weight: 0.08 grams maximum

Termination material: Gold plating over nickel.

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

Dielectric withstanding voltage: Test voltage 200Vrms

Barometric pressure: Test condition C, (70,000ft) and a test voltage of 80Vrms

Electrical characteristics: See table I and table II

Inductance and tolerance: See table I

Q values: See table I

Self-resonant frequency: See table I

DC resistance: See table I

Temperature rise: 35°C. Test performed with coil mounted on SMD test substrate

Terminal (Bond) strength: 1 pound when tested in accordance with MIL-STD-883, method 2011, test condition F, coil mounted on SMD test substrate.

Points of test voltage application for dielectric withstanding voltage, barometric pressure and insulation resistance: Between the terminals of the coil connected together and a piece of conductive rubber which is sufficient in size to cover at least the entire surface opposite the terminals. The conductive rubber is to be held firmly in place against the coil surface during test.

Solderability: Test method S of J-STD-002, except solder preforms may be used, or method 208 of MIL-STD-202; test condition B. Both end terminations are to be immersed simultaneously. Rates of immersion, dwell time and withdrawal are human controlled. Magnet wire and bond are excluded from solder coverage.

Resistance to solvents: When tested in accordance with MIL-STD-202, method 215, full immersion of part in solvents.

Resistance to soldering heat: MIL-STD-202, method 210, test condition C. Mounting board to be SMD test substrate per this document. Test to be performed after final electrical in qualification subgroup II; or after final electrical in group B subgroup 3 inspection.

Flammability: Test is not required

Overload: Test coil shall be mounted on SMD test substrate.

Low temperature storage: Test coil shall be mounted on SMD test substrate.

Vibration: Test coil shall be mounted on SMD test substrate.

Mechanical shock: Test coil shall be mounted on SMD test substrate.

Life: Test coil shall be mounted on SMD test substrate.

Moisture resistance: Method 106 of MIL-STD-202; polarization voltage not required. Step 7a shall be performed during any five of the first eight cycles only. Step 7b is not applicable. Test coil shall be mounted on SMD test substrate.

SMD test substrate: Material shall be a minimum of 95 percent alumina with metallized areas for part mounting. The substrate shall not cause, or contribute to, any failure in any test which it is used.

Coil mounting: Test coils are to be soldered to the SMD test substrate metallized areas using Sn63 solder, or equivalent, by any suitable method that does not exceed a temperature of 265°C and a solder time period greater than five seconds.

Table II electrical characteristics (final): For any subgroup test requiring coils to be mounted to an SMD test substrate, the electrical characteristics (final) measurements are to be referenced to the electrical characteristic (initial) measurements determined after the test coil is mounted to the test substrate.

Part or identifying number (PIN): M39010/15-\*\*\*\*\* (dash number from table 1)

Part marking: Coil marking is not applicable due to body surface area size constraints. A noncorrosive label containing the military PIN, Cage code, date code, and lot symbol shall be inserted in each package, as shown in the following example:

Example:  
M39010/01A1R0JM - - PIN  
12345 ----- CAGE code  
0219B ----- Date code and lot symbol

The manufacturer's source code, date code, and lot symbol shall be in accordance with MIL-STD-1285.

Table I Electrical characteristics (initial) and dash numbers

Dash Number 1/	Inductance $\mu$ H 2/	Inductance Test Frequency (MHz)	Inductance Tolerance $\pm$ percent	Q minimum 2/	Q Test frequency (MHz)	Self Resonant Frequency min (MHz) 3/	DC resistance (25°C) max (ohms)	Rated DC current (mA) 4/
BR0082**	0.0082	100	20	70	1500	6000	0.080	1,000
BR010**	0.010	50	10, 20	50	500	4100	0.080	1,000
BR012**	0.012	50	10, 20	50	500	3300	0.090	1,000
BR015**	0.015	50	10, 20	50	500	2500	0.100	1,000
BR018**	0.018	50	10, 20	50	500	2500	0.110	1,000
BR022**	0.022	50	10, 20	55	350	2400	0.120	1,000
BR027**	0.027	50	10, 20	55	350	1600	0.130	1,000
BR033**	0.033	50	10, 20	60	350	1600	0.140	1,000
BR039**	0.039	50	10, 20	60	350	1500	0.150	1,000
BR047**	0.047	50	10, 20	65	350	1500	0.160	1,000
BR056**	0.056	50	5, 10	65	350	1300	0.180	1,000
BR068**	0.068	50	5, 10	65	350	1300	0.200	1,000
BR082**	0.082	50	5, 10	60	350	1000	0.220	1,000
BR10**	0.10	25	2, 5, 10	60	350	1000	0.560	655
BR12**	0.12	25	2, 5, 10	60	350	950	0.630	617
BR15**	0.15	25	2, 5, 10	45	100	850	0.700	585
BR18**	0.18	25	2, 5, 10	45	100	750	0.770	560
BR22**	0.22	25	2, 5, 10	45	100	700	0.840	535
BR27**	0.27	25	2, 5, 10	45	100	600	0.910	515
BR33**	0.33	25	2, 5, 10	45	100	570	1.05	475
BR39**	0.39	25	2, 5, 10	45	100	500	1.12	460
BR43**	0.43	25	2, 5, 10	45	100	500	1.15	455
BR47**	0.47	25	2, 5, 10	45	100	450	1.19	450
BR56**	0.56	25	2, 5, 10	45	100	415	1.33	425
BR62**	0.62	25	2, 5, 10	45	100	375	1.40	415
BR68**	0.68	25	2, 5, 10	45	100	375	1.47	405
BR75**	0.75	25	2, 5, 10	45	100	360	1.54	395
BR82**	0.82	25	2, 5, 10	45	100	350	1.61	385

See footnotes at end of table.

Table I Electrical characteristics (initial) and dash numbers

Dash Number <u>1/</u>	Inductance $\mu$ H <u>2/</u>	Inductance Test Frequency (MHz)	Inductance Tolerance $\pm$ percent	Q minimum <u>2/</u>	Test frequency (MHz)	Self Resonant Frequency min (MHz) <u>3/</u>	DC resistance (25°C) max (ohms)	Rated DC current (mA) <u>4/</u>
BR91**	0.91	25	2, 5, 10	35	50	320	1.68	380
B1R0**	1.00	25	2, 5, 10	35	50	290	1.75	370
B1R2**	1.20	7.9	2, 5, 10	35	50	250	2.00	345
B1R5**	1.50	7.9	2, 5, 10	28	50	200	2.30	325
B1R8**	1.80	7.9	2, 5, 10	28	50	160	2.60	305
B2R2**	2.20	7.9	2, 5, 10	28	50	160	2.80	295
B2R7**	2.70	7.9	2, 5, 10	22	25	160	3.80	250
B3R3**	3.30	7.9	2, 5, 10	22	25	150	4.20	240
B3R9**	3.90	7.9	2, 5, 10	20	25	120	4.40	235
B4R7**	4.70	7.9	2, 5, 10	20	25	90	4.90	220

1/ The complete dash number will include two additional letters (indicated by \*\*). The first additional letter will indicate the inductance tolerance (e.g. G =  $\pm 2\%$ , J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$ ) and the second additional letter will indicate the product level (e.g. C, M, P, R, S) and will be added to the end of the dash number.

2/ Inductance and Q are tested using HP4291A or equivalent.

3/ Self resonant frequency tested using HP8753C, HP4291A or equivalent

4/ The rated dc current is based on 90°C ambient temperature with a 35°C rise.

Table II Electrical characteristics (final)

Inspection Group	Allowable variation from initial measurement		Allowable percent from specified minimum value in electrical characteristics (initial) table	
	Inductance (percent)	DC resistance	Self-resonant frequency	Q
Qualification inspection				
Group II	±5			-10
Group IV	±5	±(3% + 0.001 ohm)	<u>1/</u>	-10
Group VI	±5	±(3% + 0.001 ohm)	<u>1/</u>	-10
Group B inspection				
Subgroup 1	±5	±(3% + 0.001 ohm)	<u>1/</u>	-10
Subgroup 3	±5			-10
Subgroup 4	±5	±(3% + 0.001 ohm)	<u>1/</u>	-10

1/ The self-resonant frequency shall not be less than the value specified in table I

Referenced documents: In addition to MIL-PRF-39010, this document references:

J-STD-002  
MIL-STD-202  
MIL-STD-883  
MIL-STD-1285

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

Preparing activity:  
Army - CR

Agent:  
DLA - CC

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

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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>.