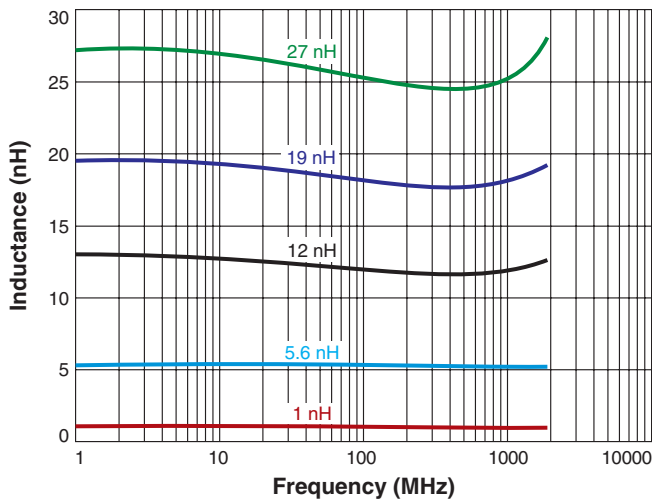


High-Reliability Chip Inductors MS235RAA

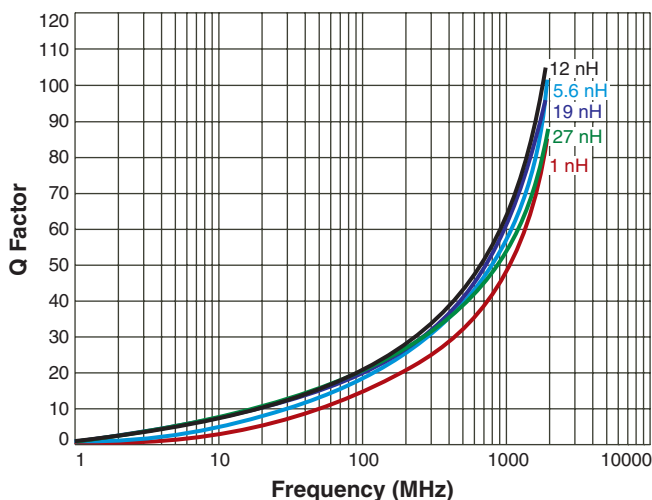
This 0402 size chip inductor series shares all of the characteristics of Coilcraft's other ceramic inductors: exceptionally high Q factors, especially at use frequencies; outstanding self-resonant frequency; tight inductance tolerance; and excellent batch-to-batch consistency.

This robust version of Coilcraft's standard 0402CS series features high temperature materials that allow operation in ambient temperatures up to 155°C and a leach-resistant base metalization with tin-lead (Sn-Pb) terminations that ensures the best possible board adhesion.

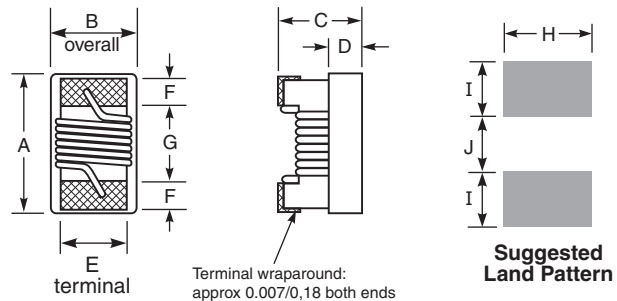
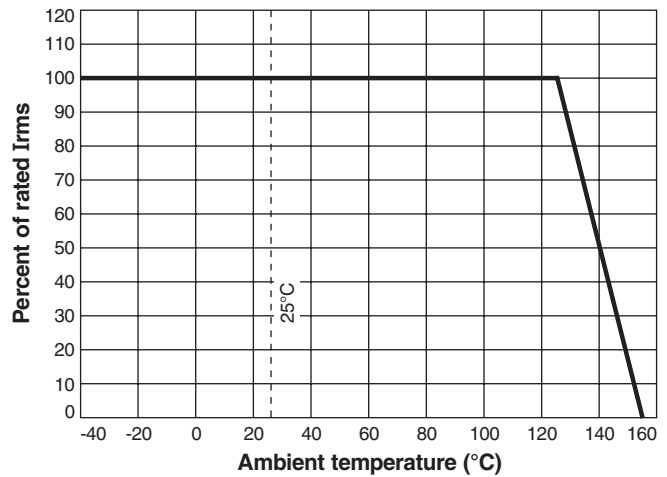
Typical L vs Frequency



Typical Q vs Frequency



Current Derating



A max	B max	C max	D ref	E	F	G	H	I	J
0.047	0.025	0.026	0.010	0.020	0.009	0.022	0.026	0.014	0.018
1,19	0,64	0,66	0,25	0,51	0,23	0,56	0,66	0,36	0,46

Note: Dimensions are before solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to B and 0.006 in / 0,15 mm to A and C.

Core material Ceramic

Terminations Tin-lead (63/37) over silver-palladium-platinum-glass frit

Ambient temperature -55°C to +125°C with I_{max} current, +125°C to +155°C with derated current

Storage temperature Component: -55°C to +155°C. Packaging: -55°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +25 to +155 ppm/°C

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Enhanced crush-resistant packaging 2000 per 7" reel
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing



CRITICAL PRODUCTS & SERVICES
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

MS235RAA Series (0402)

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	900 MHz		1.7 GHz		SRF min ⁵ (GHz)	DCR max ⁶ (Ohms)	Imax (mA)
				L typ	Q typ ⁴	L typ	Q typ ⁴			
MS235RAA1N0JSZ	1.0	5	20	1.02	77	1.02	69	>5.00	0.045	600
MS235RAA1N8JSZ	1.8	5	20	1.78	54	1.78	75	>5.00	0.070	600
MS235RAA1N9JSZ	1.9	5	20	1.72	68	1.74	82	>5.00	0.070	600
MS235RAA2N0_SZ	2.0	5,2	20	1.93	54	1.93	75	>5.00	0.070	600
MS235RAA2N2_SZ	2.2	5,2	20	2.19	59	2.23	100	>5.00	0.070	600
MS235RAA2N4_SZ	2.4	5,2	20	2.24	51	2.27	68	>5.00	0.068	600
MS235RAA3N3_SZ	3.3	5,2,1	20	3.10	65	3.12	87	>5.00	0.066	600
MS235RAA3N6_SZ	3.6	5,2,1	20	3.56	45	3.62	71	>5.00	0.066	600
MS235RAA3N9_SZ	3.9	5,2,1	20	3.89	50	4.00	75	>5.00	0.066	600
MS235RAA4N3_SZ	4.3	5,2,1	20	4.19	47	4.30	71	>5.00	0.091	600
MS235RAA4N7_SZ	4.7	5,2,1	20	4.55	48	4.68	68	4.77	0.130	600
MS235RAA5N1_SZ	5.1	5,2,1	20	5.15	56	5.25	82	4.80	0.083	600
MS235RAA5N6_SZ	5.6	5,2,1	20	5.16	54	5.28	81	4.80	0.083	600
MS235RAA6N2_SZ	6.2	5,2,1	20	6.16	52	6.37	76	4.80	0.083	600
MS235RAA6N8_SZ	6.8	5,2,1	20	6.56	63	6.93	78	4.80	0.083	600
MS235RAA7N5_SZ	7.5	5,2,1	22	7.91	60	8.22	88	4.80	0.104	600
MS235RAA8N2_SZ	8.2	5,2,1	22	8.50	57	8.85	84	4.40	0.104	600
MS235RAA8N7_SZ	8.7	5,2,1	20	8.78	54	9.21	73	3.80	0.195	480
MS235RAA9N0_SZ	9.0	5,2,1	22	9.07	62	9.53	78	4.66	0.100	680
MS235RAA9N5_SZ	9.5	5,2,1	20	9.42	54	9.98	69	3.48	0.195	480
MS235RAA10N_SZ	10.0	5,2,1	21	9.8	50	10.10	67	3.68	0.195	480
MS235RAA11N_SZ	11.0	5,2,1	24	10.7	52	11.20	78	3.48	0.120	580
MS235RAA12N_SZ	12.0	5,2,1	24	11.9	53	12.70	71	3.60	0.120	580
MS235RAA13N_SZ	13.0	5,2,1	20	13.4	51	14.63	57	3.28	0.210	440
MS235RAA15N_SZ	15.0	5,2,1	22	14.6	55	15.50	77	3.10	0.172	500
MS235RAA16N_SZ	16.0	5,2,1	23	16.6	46	18.86	47	3.05	0.220	480
MS235RAA18N_SZ	18.0	5,2,1	24	18.3	57	20.28	62	2.68	0.230	420
MS235RAA19N_SZ	19.0	5,2,1	24	19.1	50	21.10	67	3.00	0.202	460
MS235RAA20N_SZ	20.0	5,2,1	24	20.7	52	23.66	53	2.90	0.250	400
MS235RAA22N_SZ	22.0	5,2,1	24	23.2	53	26.75	53	2.80	0.300	380
MS235RAA23N_SZ	23.0	5,2,1	24	23.8	49	26.90	64	2.72	0.300	400
MS235RAA24N_SZ	24.0	5,2,1	24	25.1	51	29.50	50	2.60	0.300	390
MS235RAA27N_SZ	27.0	5,2,1	24	28.7	49	33.50	63	2.48	0.298	380
MS235RAA30N_SZ	30.0	5,2,1	24	31.1	46	38.50	39	2.35	0.410	340
MS235RAA33N_SZ	33.0	5,2,1	20	34.9	31	41.74	32	2.30	0.300	340
MS235RAA36N_SZ	36.0	5,2,1	24	39.5	44	48.40	53	2.20	0.440	310
MS235RAA40N_SZ	40.0	5,2,1	24	39.0	44	47.40	33	2.24	0.440	290

1. When ordering, specify **tolerance, termination and testing** codes:

MS235RAAR10GSZ

Tolerance: F = 1% G = 2% J = 5%

Termination: S = Tin-lead (63/37) over silver-platinum-glass frit.

Special order:

T = Tin-silver-copper (95.5/4/0.5) over silver-platinum-glass frit.

P = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.

Q = Tin-silver-copper (95.5/4/0.5) over tin over nickel over silver-platinum-glass frit.

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

N = Screening per Coilcraft CP-SA-10003

2. Inductance measured at 250 MHz using a Coilcraft SMD-F test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.

3. Q measured at 250 MHz using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.

4. Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.

5. SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft CCF1192 test fixture.

6. DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1192 test fixture.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



CRITICAL PRODUCTS & SERVICES

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Document MS198-2 Revised 07/13/12