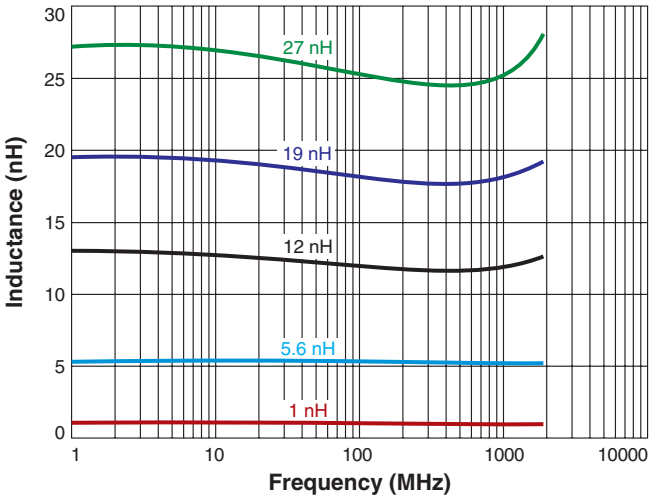
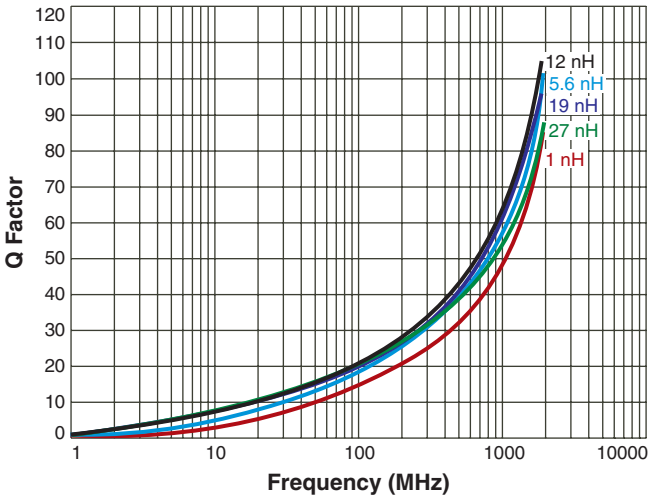
Chip Inductors for Critical Applications ST235RAA

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.

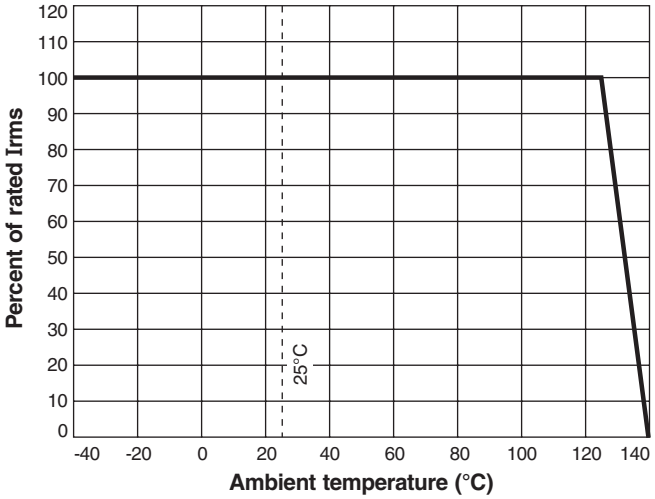
Typical L vs Frequency

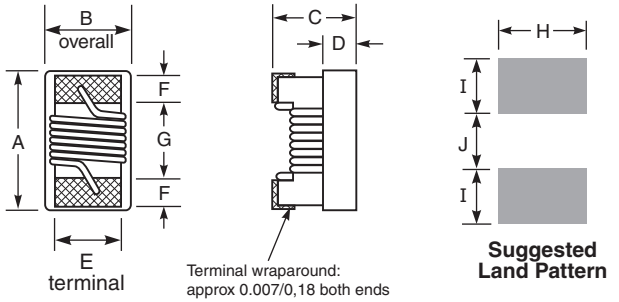


Typical Q vs Frequency



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 optional 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

Ambient temperature –40°C to +125°C with Imax current, +125°C to +140°C with derated current

Storage temperature Component: –55°C to +140°C. Tape and reel 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)

Packaging 2000 per 7″ reel Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing

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ST235RAA Series (0402)

Part number[1]	Inductance[2] (nH)	Percent tolerance	Q min[3]	900 MHz L typ	900 MHz Q typ[4]	1.7 GHz L typ	1.7 GHz Q typ[4]	SRF min[5] (GHz)	DCR max[6] (Ohms)	Imax (mA)
ST235RAA1N0JLZ	1.0	5	20	1.02	77	1.02	69	>5.00	0.045	600
ST235RAA1N8JLZ	1.8	5	20	1.78	54	1.78	75	>5.00	0.070	600
ST235RAA1N9JLZ	1.9	5	20	1.72	68	1.74	82	>5.00	0.070	600
ST235RAA2N0_LZ	2.0	5,2	20	1.93	54	1.93	75	>5.00	0.070	600
ST235RAA2N2_LZ	2.2	5,2	20	2.19	59	2.23	100	>5.00	0.070	600
ST235RAA2N4_LZ	2.4	5,2	20	2.24	51	2.27	68	>5.00	0.068	600
ST235RAA3N3_LZ	3.3	5,2,1	20	3.10	65	3.12	87	>5.00	0.066	600
ST235RAA3N6_LZ	3.6	5,2,1	20	3.56	45	3.62	71	>5.00	0.066	600
ST235RAA3N9_LZ	3.9	5,2,1	20	3.89	50	4.00	75	>5.00	0.066	600
ST235RAA4N3_LZ	4.3	5,2,1	20	4.19	47	4.30	71	>5.00	0.091	600
ST235RAA4N7_LZ	4.7	5,2,1	20	4.55	48	4.68	68	4.77	0.130	600
ST235RAA5N1_LZ	5.1	5,2,1	20	5.15	56	5.25	82	4.80	0.083	600
ST235RAA5N6_LZ	5.6	5,2,1	20	5.16	54	5.28	81	4.80	0.083	600
ST235RAA6N2_LZ	6.2	5,2,1	20	6.16	52	6.37	76	4.80	0.083	600
ST235RAA6N8_LZ	6.8	5,2,1	20	6.56	63	6.93	78	4.80	0.083	600
ST235RAA7N5_LZ	7.5	5,2,1	22	7.91	60	8.22	88	4.80	0.104	600
ST235RAA8N2_LZ	8.2	5,2,1	22	8.50	57	8.85	84	4.40	0.104	600
ST235RAA8N7_LZ	8.7	5,2,1	20	8.78	54	9.21	73	3.80	0.195	480
ST235RAA9N0_LZ	9.0	5,2,1	22	9.07	62	9.53	78	4.66	0.100	680
ST235RAA9N5_LZ	9.5	5,2,1	20	9.42	54	9.98	69	3.48	0.195	480
ST235RAA10N_LZ	10.0	5,2,1	21	9.8	50	10.10	67	3.68	0.195	480
ST235RAA11N_LZ	11.0	5,2,1	24	10.7	52	11.20	78	3.48	0.120	580
ST235RAA12N_LZ	12.0	5,2,1	24	11.9	53	12.70	71	3.60	0.120	580
ST235RAA13N_LZ	13.0	5,2,1	20	13.4	51	14.63	57	3.28	0.210	440
ST235RAA15N_LZ	15.0	5,2,1	22	14.6	55	15.50	77	3.10	0.172	500
ST235RAA16N_LZ	16.0	5,2,1	23	16.6	46	18.86	47	3.05	0.220	480
ST235RAA18N_LZ	18.0	5,2,1	24	18.3	57	20.28	62	2.68	0.230	420
ST235RAA19N_LZ	19.0	5,2,1	24	19.1	50	21.10	67	3.00	0.202	460
ST235RAA20N_LZ	20.0	5,2,1	24	20.7	52	23.66	53	2.90	0.250	400
ST235RAA22N_LZ	22.0	5,2,1	24	23.2	53	26.75	53	2.80	0.300	380
ST235RAA23N_LZ	23.0	5,2,1	24	23.8	49	26.90	64	2.72	0.300	400
ST235RAA24N_LZ	24.0	5,2,1	24	25.1	51	29.50	50	2.60	0.300	390
ST235RAA27N_LZ	27.0	5,2,1	24	28.7	49	33.50	63	2.48	0.298	380
ST235RAA30N_LZ	30.0	5,2,1	24	31.1	46	38.50	39	2.35	0.410	340
ST235RAA33N_LZ	33.0	5,2,1	20	34.9	31	41.74	32	2.30	0.300	340
ST235RAA36N_LZ	36.0	5,2,1	24	39.5	44	48.40	53	2.20	0.440	310
ST235RAA40N_LZ	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:

ST235RAAR10GLZ

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

Termination: **L** = RoHS compliant silver-palladium-platinum-glass frit.

Special order:

T = RoHS tin-silver-copper (95.5/4/0.5) over silver-palladium-platinum-glass frit

S = non-RoHS tin-lead (63/37) over silver-palladium-platinum-glass frit.

R = Tin over nickel over silver-platinum-glass frit.

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

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

Testing: **Z** = COTS

H = Screening per Coilcraft CP-SA-10001

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.

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