

# Chip Inductors for Critical Applications ST220RAA

- ST220RAA – 20% smaller than our 0402 size inductors
- 35 inductance values from 0.67 to 34 nH
- High Q values – up to 131 at 2.4 GHz!

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tol	Q min <sup>3</sup>	900 MHz		1.7 GHz		2.4 GHz		SRF min <sup>5</sup> (GHz)	DCR max <sup>6</sup> (Ohms)	I <sub>rms</sub> <sup>7</sup> (mA)
				L typ	Q typ <sup>4</sup>	L typ	Q typ <sup>4</sup>	L typ	Q typ <sup>4</sup>			
ST220RAAN67XKLZ	0.67	10	10	0.66	42	0.66	56	0.67	70	<5.0	0.030	500
ST220RAA1N7XJLZ	1.7	5	18	1.7	57	1.7	78	1.7	95	<5.0	0.045	500
ST220RAA1N9XJLZ	1.9	5	10	1.9	42	1.9	65	1.9	83	<5.0	0.065	500
ST220RAA2N1XJLZ	2.1	5	11	2.1	38	2.1	57	2.1	72	<5.0	0.095	420
ST220RAA3N0XJLZ	3.0	5	20	3.0	56	3.0	92	3.0	131	<5.0	0.060	500
ST220RAA3N3XJLZ	3.3	5	20	3.3	56	3.3	88	3.3	129	<5.0	0.060	500
ST220RAA3N5XJLZ	3.5	5	20	3.5	60	3.5	84	3.5	110	<5.0	0.070	500
ST220RAA3N8XJLZ	3.8	5	13	3.8	60	3.8	89	3.8	105	<5.0	0.110	500
ST220RAA4N0XJLZ	4.0	5	15	4.0	52	4.0	80	4.1	98	<5.0	0.140	420
ST220RAA4N7XJLZ	4.7	5	20	4.6	55	4.6	88	4.7	120	<5.0	0.074	500
ST220RAA5N1XJLZ	5.1	5	22	5.1	62	5.1	92	5.2	118	<5.0	0.074	500
ST220RAA5N6XJLZ	5.6	5	19	5.5	50	5.5	71	5.6	108	<5.0	0.120	500
ST220RAA6N0XJLZ	6.0	5	19	6.0	58	6.0	82	6.2	105	<5.0	0.140	500
ST220RAA6N3XJLZ	6.3	5	19	6.3	56	6.3	80	6.5	100	<5.0	0.170	420
ST220RAA6N5XJLZ	6.5	5	20	6.5	56	6.5	80	6.8	100	<5.0	0.200	360
ST220RAA7N0XJLZ	7.0	5	25	7.0	62	7.1	84	7.2	112	<5.0	0.103	500
ST220RAA7N2XJLZ	7.2	5	25	7.2	60	7.2	82	7.4	110	<5.0	0.112	500
ST220RAA7N4XJLZ	7.4	5	20	7.3	60	7.4	82	7.6	110	<5.0	0.112	500
ST220RAA8N3XJLZ	8.3	5	21	8.2	58	8.3	80	8.5	104	<5.0	0.150	450
ST220RAA9N2XJLZ	9.2	5	22	8.9	58	9.0	83	9.2	120	<5.0	0.115	500
ST220RAA10NXJLZ	10.0	5	23	10.0	58	10.1	91	10.2	119	<5.0	0.140	500
ST220RAA11NXJLZ	11.0	5	22	11.0	57	11.2	83	11.6	105	<5.0	0.210	430
ST220RAA12NXJLZ	12.0	5	23	12.0	59	12.6	88	12.7	110	<5.0	0.170	500
ST220RAA13NXJLZ	13.0	5	22	13.0	53	13.3	83	13.8	104	4.8	0.230	430
ST220RAA15NXJLZ	15.0	5	21	15.0	55	15.4	84	15.9	106	4.6	0.174	500
ST220RAA16NXJLZ	16.0	5	22	16.0	54	16.4	85	17.0	102	4.6	0.210	440
ST220RAA17NXJLZ	17.0	5	21	16.9	52	17.4	82	18.2	118	4.3	0.280	400
ST220RAA18NXJLZ	18.0	5	21	17.9	55	18.5	80	19.3	111	4.2	0.350	340
ST220RAA19NXJLZ	19.0	5	21	18.9	53	19.6	85	20.5	104	4.0	0.260	440
ST220RAA20NXJLZ	20.0	5	23	19.9	56	20.2	88	20.8	112	3.9	0.300	380
ST220RAA21NXJLZ	21.0	5	21	20.9	53	22.0	82	24.1	95	4.0	0.370	320
ST220RAA22NXJLZ	22.0	5	21	22.0	52	23.1	79	25.2	94	3.8	0.420	270
ST220RAA23NXJLZ	23.5	5	22	23.5	54	24.6	84	27.4	92	3.8	0.400	290
ST220RAA29NXJLZ	29.0	5	20	29.0	51	30.5	75	33.0	90	3.4	0.470	310
ST220RAA34NXJLZ	34.0	5	21	34.0	55	35.5	78	38.1	94	2.9	0.530	280

1. When ordering, please specify **testing** code:

**ST220RAA34NXJLZ**

**Testing:**

**Z** = Unscreened

**H** = Group A screening per Coilcraft CP-SA-10001

Screening performed to the document's latest revision

Custom screening also available

2. Inductance measured at 250 MHz using a Coilcraft SMD-F fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
3. Q measured at 250 MHz using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents
3. Q measured using an Agilent/HP 4287A with an Agilent/HP 16193 test fixture.
4. SRF measured using an Agilent/HP 8722ES network analyzer and a test fixture with a 0.017" air gap.
5. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
6. Current that causes a 30°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Electrical specifications at 25°C.

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



**CRITICAL PRODUCTS & SERVICES**

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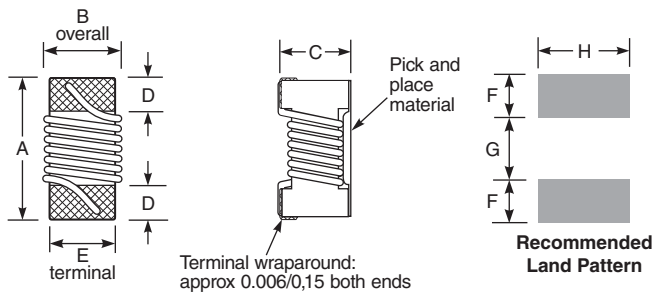
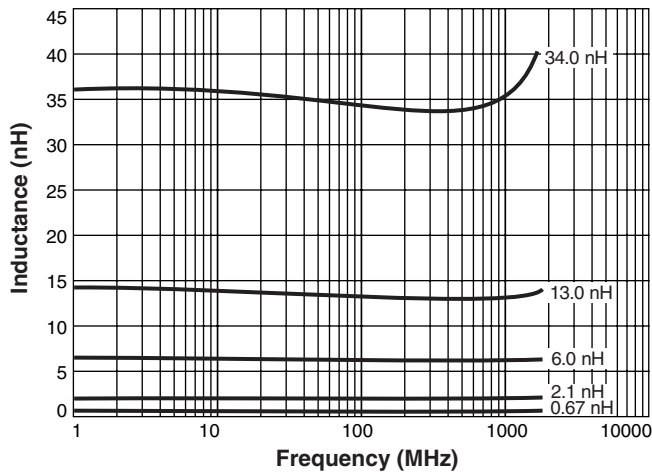
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

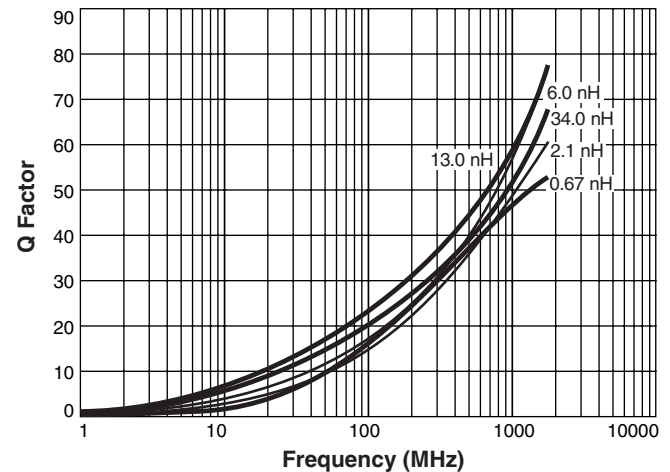
# ST220RAA Series (0302)

## Typical L vs Frequency



Amax	Bmax	Cmax	D	E	F	G	H
0.034	0.022	0.018	0.006	0.015	0.010	0.014	0.021
0,86	0,56	0,45	0,20	0,38	0,25	0,36	0,53

## Typical Q vs Frequency



**Core material** Ceramic

**Terminations** Silver-platinum-glass frit.

**Weight** 0.3 – 0.6 mg

**Ambient temperature**  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  with Irms current

**Maximum part temperature**  $+155^{\circ}\text{C}$  (ambient + temp rise).

**Storage temperature** Component:  $-55^{\circ}\text{C}$  to  $+155^{\circ}\text{C}$ .

Tape and reel packaging:  $-55^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Temperature Coefficient of Inductance (TCL)**  $+25$  to  $+125$  ppm/ $^{\circ}\text{C}$

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 85% relative humidity)

**Packaging** 2000 per 7" reel. Paper tape: 8 mm wide, 0.5 mm thick, 2 mm pocket spacing