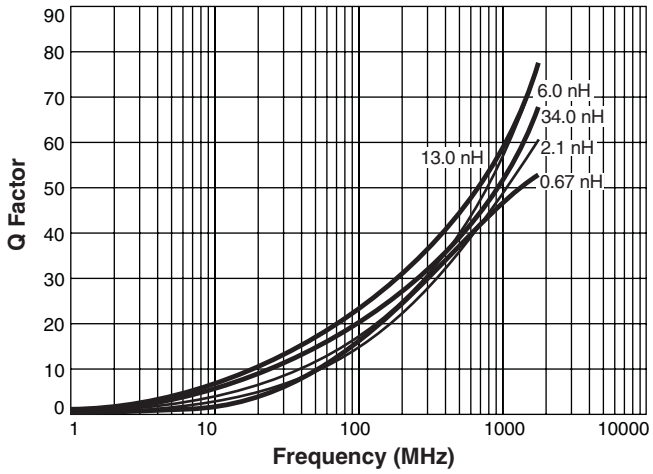
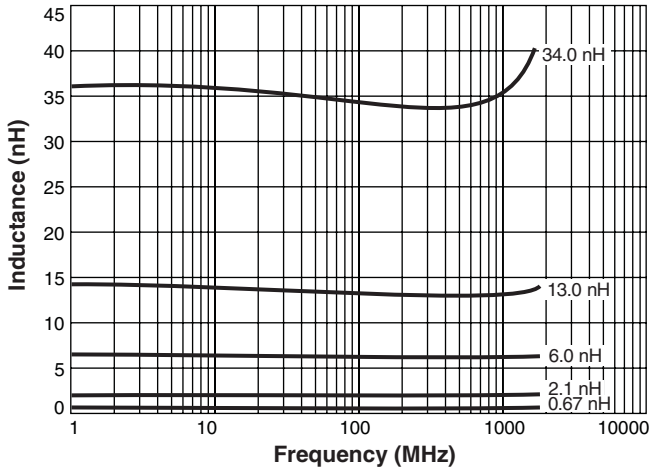
Chip Inductors for Critical Applications ST220RAA

- 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!

Typical Q vs Frequency



Typical L vs Frequency



Core material Ceramic

Terminations Silver-platinum-glass frit.

Weight 0.3 – 0.6 mg

Ambient temperature –40°C to +125°C with Irms current

Maximum part temperature +140°C (ambient + temp rise).

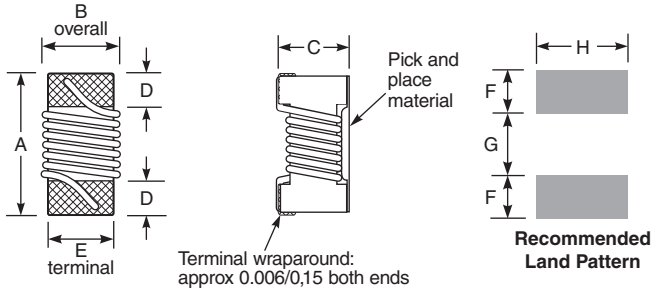
Storage temperature Component: –55°C to +140°C.
Tape and reel packaging: –55°C to +80°C

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 +125 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, 0.5 mm thick, 2 mm pocket spacing



Amax	Bmax	Cmax	D	E	F	G	H	
0.034	0.022	0.018	0.006	0.015	0.010	0.014	0.021	inches
0,86	0,56	0,45	0,16	0,38	0,25	0,36	0,53	mm

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ST220RAA Series (0302)

Part number[1]	Inductance[2] (nH)	Percent tol	Q min[3]	900 MHz L typ	900 MHz Q typ[4]	1.7 GHz L typ	1.7 GHz Q typ[4]	2.4 GHz L typ	2.4 GHz Q typ[4]	SRF min[5] (GHz)	DCR max[6] (Ohms)	Imax[7] (mA)
ST220RAAN67KLZ	0.67	10	10	0.66	42	0.66	56	0.67	70	>5.0	0.030	500
ST220RAA1N7JLZ	1.7	5	18	1.7	57	1.7	78	1.7	95	>5.0	0.045	500
ST220RAA1N9JLZ	1.9	5	10	1.9	42	1.9	65	1.9	83	>5.0	0.065	500
ST220RAA2N1JLZ	2.1	5	11	2.1	38	2.1	57	2.1	72	>5.0	0.095	420
ST220RAA3N0JLZ	3.0	5	20	3.0	56	3.0	92	3.0	131	>5.0	0.060	500
ST220RAA3N3JLZ	3.3	5	20	3.3	56	3.3	88	3.3	129	>5.0	0.060	500
ST220RAA3N5JLZ	3.5	5	20	3.5	60	3.5	84	3.5	110	>5.0	0.070	500
ST220RAA3N8JLZ	3.8	5	13	3.8	60	3.8	89	3.8	105	>5.0	0.110	500
ST220RAA4N0JLZ	4.0	5	15	4.0	52	4.0	80	4.1	98	>5.0	0.140	420
ST220RAA4N7JLZ	4.7	5	20	4.6	55	4.6	88	4.7	120	>5.0	0.074	500
ST220RAA5N1JLZ	5.1	5	22	5.1	62	5.1	92	5.2	118	>5.0	0.074	500
ST220RAA5N6JLZ	5.6	5	19	5.5	50	5.5	71	5.6	108	>5.0	0.120	500
ST220RAA6N0JLZ	6.0	5	19	6.0	58	6.0	82	6.2	105	>5.0	0.140	500
ST220RAA6N3JLZ	6.3	5	19	6.3	56	6.3	80	6.5	100	>5.0	0.170	420
ST220RAA6N5JLZ	6.5	5	20	6.5	56	6.5	80	6.8	100	>5.0	0.200	360
ST220RAA7N0JLZ	7.0	5	25	7.0	62	7.1	84	7.2	112	>5.0	0.103	500
ST220RAA7N2JLZ	7.2	5	25	7.2	60	7.2	82	7.4	110	>5.0	0.112	500
ST220RAA7N4JLZ	7.4	5	20	7.3	60	7.4	82	7.6	110	>5.0	0.112	500
ST220RAA8N3JLZ	8.3	5	21	8.2	58	8.3	80	8.5	104	>5.0	0.150	450
ST220RAA9N2JLZ	9.2	5	22	8.9	58	9.0	83	9.2	120	>5.0	0.115	500
ST220RAA10NJLZ	10.0	5	23	10.0	58	10.1	91	10.2	119	>5.0	0.140	500
ST220RAA11NJLZ	11.0	5	22	11.0	57	11.2	83	11.6	105	>5.0	0.210	430
ST220RAA12NJLZ	12.0	5	23	12.0	59	12.6	88	12.7	110	>5.0	0.170	500
ST220RAA13NJLZ	13.0	5	22	13.0	53	13.3	83	13.8	104	4.8	0.230	430
ST220RAA15NJLZ	15.0	5	21	15.0	55	15.4	84	15.9	106	4.6	0.174	500
ST220RAA16NJLZ	16.0	5	22	16.0	54	16.4	85	17.0	102	4.6	0.210	440
ST220RAA17NJLZ	17.0	5	21	16.9	52	17.4	82	18.2	118	4.3	0.280	400
ST220RAA18NJLZ	18.0	5	21	17.9	55	18.5	80	19.3	111	4.2	0.350	340
ST220RAA19NJLZ	19.0	5	21	18.9	53	19.6	85	20.5	104	4.0	0.260	440
ST220RAA20NJLZ	20.0	5	23	19.9	56	20.2	88	20.8	112	3.9	0.300	380
ST220RAA21NJLZ	21.0	5	21	20.9	53	22.0	82	24.1	95	4.0	0.370	320
ST220RAA22NJLZ	22.0	5	21	22.0	52	23.1	79	25.2	94	3.8	0.420	270
ST220RAA23NJLZ	23.5	5	22	23.5	54	24.6	84	27.4	92	3.8	0.400	290
ST220RAA29NJLZ	29.0	5	20	29.0	51	30.5	75	33.0	90	3.4	0.470	310
ST220RAA34NJLZ	34.0	5	21	34.0	55	35.5	78	38.1	94	2.9	0.530	280

1. When ordering, please specify **termination** and **screening** codes:

ST220RAA34NJLZ

Termination: **R** = Matte tin over nickel over silver-platinum glass frit
A = Gold over nickel over moly-mag
L = Silver-palladium-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.
C = Tin-lead (63/37) over gold over nickel over moly-mag
F = Tin-silver-copper (95.5/4/0.5) over gold over nickel over moly-mag
S = Tin-lead (63/37) over silver-platinum-glass frit.
T = Tin-silver-copper (95.5/4/0.5) over silver-platinum glass frit.

Screening: **Z** = Unscreened
H = Coilcraft CP-SA-10001 Group A
- Screening performed to the document's latest revision.
- Lot qualification (Group B) available.
- Custom testing also available.
- Country of origin restrictions available; prefix options G or F.

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
4. Q measured using an Agilent/HP 4287A with an Agilent/HP 16193 test fixture.
5. SRF measured using an Agilent/HP 8722ES network analyzer and a test fixture with a 0.017″ air gap.
6. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
7. 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.

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

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