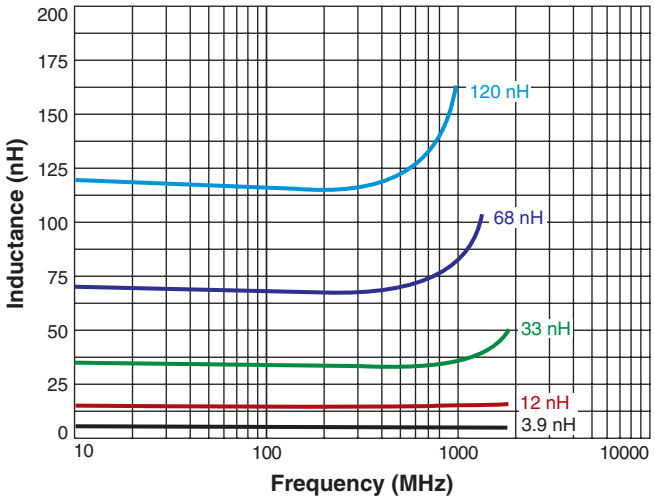
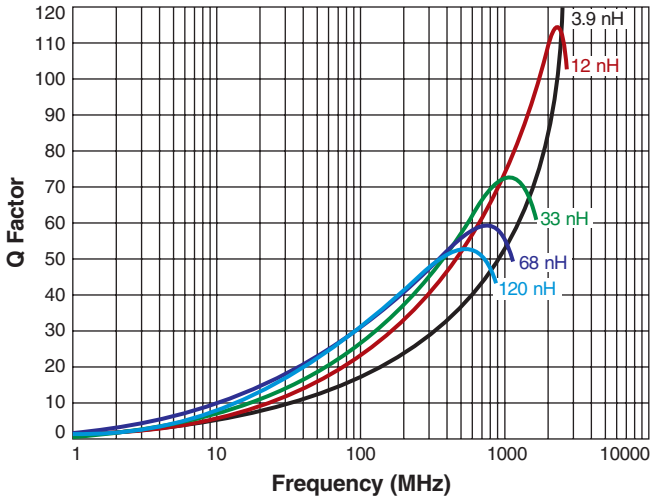
Chip Inductors for Critical Applications ST312RAA

Small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

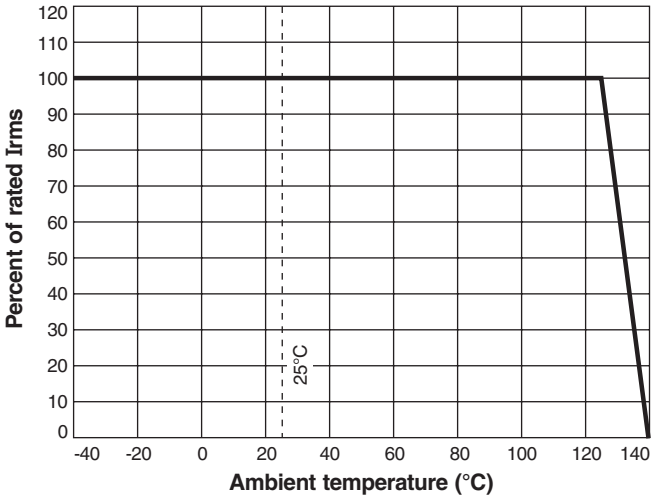
Typical L vs Frequency

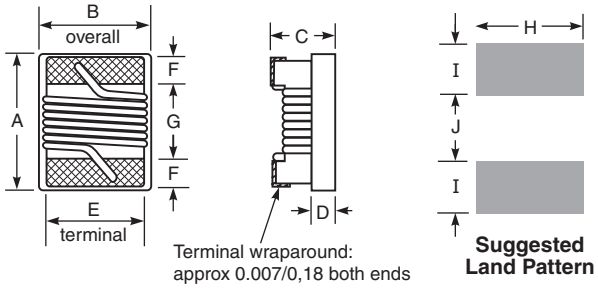


Typical Q vs Frequency



Current Derating





A max	B max	C max	D ref	E	F	G	H	I	J
0.071	0.044	0.040	0.015	0.030	0.013	0.034	0.040	0.025	0.025
1,80	1,12	1,02	0,38	0,76	0,33	0,86	1,02	0,64	0,64

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

Terminations Silver-palladium-platinum-glass frit. Other terminations available at additional cost.

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, 1.0 mm thick, 4 mm pocket spacing

Document ST195-1 Revised 11/06/12

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ST312RAA Series (0603)

Part number[1]	Inductance[2] (nH)	Percent tolerance	Q min[3]	900 MHz L typ	900 MHz Q typ	1.7 GHz L typ	1.7 GHz Q typ	SRF min[4] (MHz)	DCR max[5] (Ohms)	Imax (mA)	Color code
ST312RAA1N6JLZ	1.6 @ 250 MHz	5	26	1.67	49	1.65	63	>5000	0.022	700	Red
ST312RAA1N8JLZ	1.8 @ 250 MHz	5	21	1.83	35	1.86	50	>5000	0.045	700	Black
ST312RAA3N3_LZ	3.3 @ 250 MHz	5,2	35	3.31	75	3.38	88	>5000	0.045	700	Blue
ST312RAA3N6_LZ	3.6 @ 250 MHz	5,2	18	3.72	53	3.71	65	>5000	0.063	700	Red
ST312RAA3N9_LZ	3.9 @ 250 MHz	5,2	20	3.95	49	3.96	67	>5000	0.080	700	Brown
ST312RAA4N3_LZ	4.3 @ 250 MHz	5,2	29	4.32	50	4.33	70	>5000	0.063	700	Orange
ST312RAA4N7_LZ	4.7 @ 250 MHz	5,2	18	4.72	47	4.75	57	>5000	0.116	605	Violet
ST312RAA5N1_LZ	5.1 @ 250 MHz	5,2	20	4.93	47	4.95	56	>5000	0.140	510	Green
ST312RAA5N6_LZ	5.6 @ 250 MHz	5,2,1	25	5.77	63	6.05	80	4760	0.075	700	Black
ST312RAA6N8_LZ	6.8 @ 250 MHz	5,2,1	28	6.75	60	7.10	81	4660	0.110	700	Red
ST312RAA7N5_LZ	7.5 @ 250 MHz	5,2,1	23	7.70	60	7.82	65	4320	0.106	700	Brown
ST312RAA8N2_LZ	8.2 @ 250 MHz	5,2,1	26	8.25	82	8.37	87	3880	0.115	700	Orange
ST312RAA8N7_LZ	8.7 @ 250 MHz	5,2,1	27	8.86	62	9.32	58	3680	0.109	700	Yellow
ST312RAA9N5_LZ	9.5 @ 250 MHz	5,2,1	22	9.70	59	9.92	61	4100	0.135	700	Blue
ST312RAA10N_LZ	10 @ 250 MHz	5,2,1	28	10.0	66	10.6	83	3860	0.130	700	Orange
ST312RAA11N_LZ	11 @ 250 MHz	5,2,1	26	11.0	53	11.5	56	3640	0.130	700	Gray
ST312RAA12N_LZ	12 @ 250 MHz	5,2,1	29	12.3	72	13.5	83	3220	0.130	620	Yellow
ST312RAA15N_LZ	15 @ 250 MHz	5,2,1	28	15.4	64	16.8	89	3020	0.170	600	Green
ST312RAA16N_LZ	16 @ 250 MHz	5,2,1	29	16.2	55	17.3	52	3040	0.170	600	White
ST312RAA18N_LZ	18 @ 250 MHz	5,2,1	29	18.7	70	21.4	69	2680	0.170	600	Blue
ST312RAA22N_LZ	22 @ 250 MHz	5,2,1	31	22.8	73	26.1	71	2380	0.190	560	Violet
ST312RAA23N_LZ	23 @ 250 MHz	5,2,1	39	24.1	71	28.0	67	2380	0.190	560	Orange
ST312RAA24N_LZ	24 @ 250 MHz	5,2,1	36	24.5	45	28.7	39	2380	0.190	560	Black
ST312RAA27N_LZ	27 @ 250 MHz	5,2,1	32	29.2	74	34.6	65	2380	0.220	530	Gray
ST312RAA30N_LZ	30 @ 250 MHz	5,2,1	32	31.4	47	39.9	28	2240	0.220	500	Brown
ST312RAA33N_LZ	33 @ 250 MHz	5,2,1	33	36.0	67	49.5	42	1900	0.220	500	White
ST312RAA36N_LZ	36 @ 250 MHz	5,2,1	32	39.4	47	52.7	24	1960	0.250	460	Red
ST312RAA39N_LZ	39 @ 250 MHz	5,2,1	36	42.7	60	60.2	40	1740	0.250	460	Black
ST312RAA43N_LZ	43 @ 250 MHz	5,2,1	28	47.0	44	64.9	21	1580	0.280	440	Orange
ST312RAA47N_LZ	47 @ 200 MHz	5,2,1	35	52.2	62	77.2	35	1560	0.280	440	Brown
ST312RAA51N_LZ	51 @ 200 MHz	5,2,1	38	55.5	69	82.2	34	1560	0.270	420	Blue
ST312RAA56N_LZ	56 @ 200 MHz	5,2,1	37	62.5	56	97.0	26	1480	0.310	420	Red
ST312RAA68N_LZ	68 @ 200 MHz	5,2,1	35	80.5	54	168	21	1380	0.340	410	Orange
ST312RAA72N_LZ	72 @ 150 MHz	5,2,1	35	82.0	53	135	20	1360	0.490	340	Yellow
ST312RAA82N_LZ	82 @ 150 MHz	5,2,1	29	96.2	54	177	21	1300	0.540	340	Green
ST312RAAR10_LZ	100 @ 150 MHz	5,2,1	28	124	49	—	—	1140	0.580	310	Blue
ST312RAAR11_LZ	110 @ 150 MHz	5,2,1	30	138	43	—	—	1080	0.610	310	Violet
ST312RAAR12_LZ	120 @ 150 MHz	5,2,1	28	166	39	—	—	1020	0.650	270	Gray
ST312RAAR15_LZ	150 @ 150 MHz	5,2,1	28	250	25	—	—	900	0.915	250	White
ST312RAAR18_LZ	180 @ 100 MHz	5,2,1	25	305	22	—	—	820	1.25	210	Black

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

ST312RAAR39JLZ

Tolerance: **F** = 1% **G** = 2% **J** = 5%
Termination: **L** = RoHS compliant silver-palladium-platinum glass frit.
Special order:
S = Tin-lead (63/37) over silver-platinum-glass frit.
T = Tin-silver-copper (95.5/4/0.5) over silver-platinum-glass frit.
R = Tin over nickel 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

2. Inductance measured at 250 MHz using a Coilcraft SMD-A test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.
3. Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
4. SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft CCF1232 test fixture.
5. DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1010 test fixture.
6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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Document ST195-2 Revised 11/06/12

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.

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