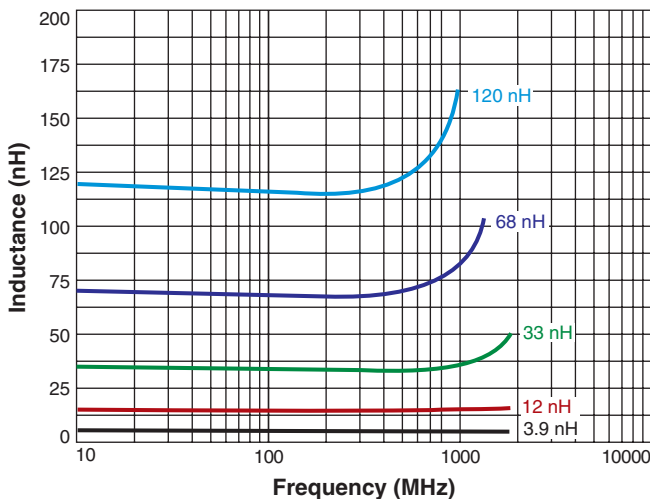


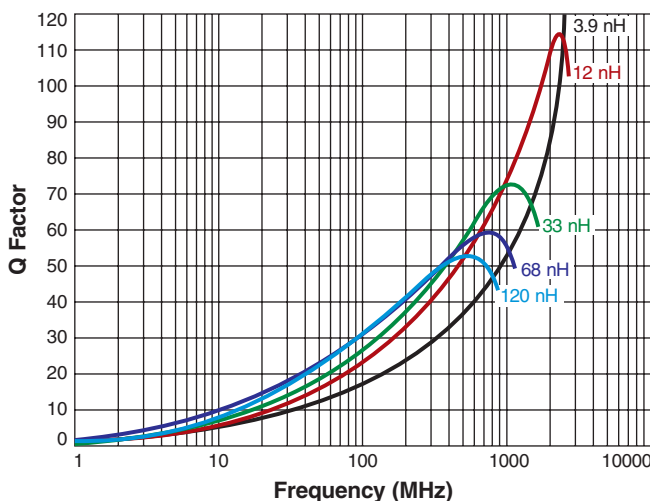
Chip Inductors for Critical Applications ST312RAA

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



Core material Ceramic

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

Ambient temperature -40°C to $+125^{\circ}\text{C}$ with I_{max} current

Maximum part temperature $+140^{\circ}\text{C}$ (ambient + temp rise)

Storage temperature Component: -55°C to $+140^{\circ}\text{C}$.

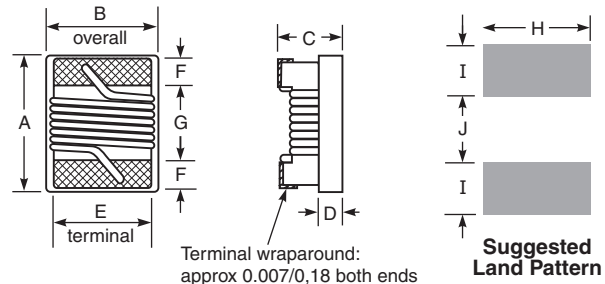
Tape and reel packaging: -55°C to $+80^{\circ}\text{C}$

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 $+155$ 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, 1.0 mm thick, 4 mm pocket spacing



A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
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.

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Document ST195-1 Revised 05/16/17

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.

ST312RAA Series (0603)

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	900 MHz		1.7 GHz		SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	Imax (mA)	Color code
				L typ	Q typ	L typ	Q typ				
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
ST312RAA2N2JLZ	2.2 @ 250 MHz	5	13	2.22	31	2.24	44	>5000	0.240	100	Yellow
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	0.300	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
ST312RAAR20_LZ	200 @ 100 MHz	5,2	25	—	—	—	—	800	1.98	170	Green
ST312RAAR21_LZ	210 @ 100 MHz	5,2	26	—	—	—	—	780	2.06	160	Gray
ST312RAAR22_LZ	220 @ 100 MHz	5,2	25	—	—	—	—	760	2.10	160	Brown
ST312RAAR25_LZ	250 @ 100 MHz	5,2	25	—	—	—	—	740	3.55	120	Violet
ST312RAAR27_LZ	270 @ 100 MHz	5,2	26	—	—	—	—	700	2.30	150	Red
ST312RAAR33_LZ	330 @ 100 MHz	5,2	26	—	—	—	—	620	3.89	100	Blue
ST312RAAR39_LZ	390 @ 100 MHz	5,2	27	—	—	—	—	580	4.35	100	Yellow

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

ST312RAAR39JLZ

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

Termination: L = 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 = 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 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.



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.