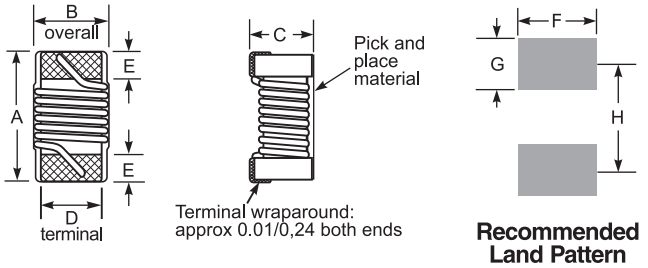
Chip Inductors for Critical Applications CP312RAQ

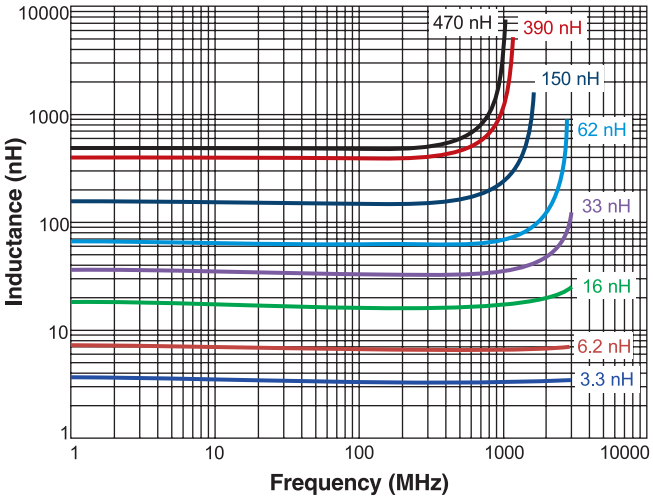
- 0603 ceramic wirewound chip inductor
- 45 inductance values available from 2.7 nH to 470 nH
- High SRF – as high as 11.4 GHz



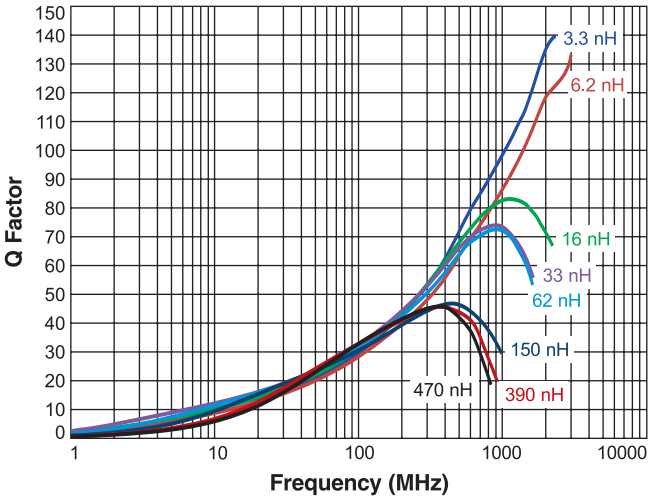
A max	B max	C max	D	E	F	G	H	
0.067	0.039	0.035	0.028	0.013	0.033	0.016	0.051	inches
1,70	0,99	0,89	0,71	0,33	0,85	0,40	1,29	mm

Notes: 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**.

Typical L vs Frequency



Typical Q vs Frequency



Core material Ceramic

Terminations Matte tin over nickel over silver-glass frit.

Weight 3 – 4 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, 0.95 mm thick, 4 mm pocket spacing

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

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CP312RAQ Series (1608)

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	Q min	900 MHz Q typ[4]	1.7 GHz Q typ[4]	2.4 GHz Q typ[4]	SRF min[5] (GHz)	DCR max[6] (Ohms)	Imax[7] (mA)
CP312RAQ2N7_RZ	2.7 @ 250 MHz	5, 3	34 @ 250 MHz	80	117	148	5.0	0.029	700
CP312RAQ3N3_RZ	3.3 @ 250 MHz	5, 3, 2	38 @ 250 MHz	94	125	140	5.0	0.042	700
CP312RAQ3N9_RZ	3.9 @ 250 MHz	5, 3, 2	43 @ 250 MHz	105	144	177	5.0	0.040	700
CP312RAQ4N3_RZ	4.3 @ 250 MHz	5, 3, 2	44 @ 250 MHz	100	138	167	5.0	0.040	700
CP312RAQ5N1_RZ	5.1 @ 250 MHz	5, 3, 2	36 @ 250 MHz	88	126	152	5.0	0.046	700
CP312RAQ5N6_RZ	5.6 @ 250 MHz	5, 3, 2	36 @ 250 MHz	90	129	187	5.0	0.046	700
CP312RAQ6N2_RZ	6.2 @ 250 MHz	5, 3, 2	36 @ 250 MHz	84	110	125	5.0	0.048	700
CP312RAQ6N8_RZ	6.8 @ 250 MHz	5, 3, 2	36 @ 250 MHz	100	131	143	4.3	0.048	700
CP312RAQ7N5_RZ	7.5 @ 250 MHz	5, 3, 2	36 @ 250 MHz	88	126	160	4.4	0.053	700
CP312RAQ8N2_RZ	8.2 @ 250 MHz	5, 3, 2	40 @ 250 MHz	93	130	162	5.0	0.053	700
CP312RAQ9N1_RZ	9.1 @ 250 MHz	5, 3, 2	43 @ 250 MHz	97	117	112	3.8	0.060	700
CP312RAQ10N_RZ	10 @ 250 MHz	5, 3, 2	40 @ 250 MHz	92	107	98	3.4	0.060	700
CP312RAQ11N_RZ	11 @ 250 MHz	5, 3, 2	39 @ 250 MHz	94	132	157	3.6	0.065	700
CP312RAQ12N_RZ	12 @ 250 MHz	5, 3, 2	39 @ 250 MHz	94	122	145	3.3	0.065	700
CP312RAQ15N_RZ	15 @ 250 MHz	5, 3, 2	39 @ 250 MHz	87	92	91	2.9	0.074	700
CP312RAQ16N_RZ	16 @ 250 MHz	5, 3, 2	39 @ 250 MHz	82	77	64	2.8	0.074	700
CP312RAQ18N_RZ	18 @ 250 MHz	5, 3, 2	38 @ 250 MHz	80	72	50	2.5	0.078	700
CP312RAQ20N_RZ	20 @ 250 MHz	5, 3, 2	40 @ 250 MHz	80	70	55	3.1	0.084	700
CP312RAQ22N_RZ	22 @ 250 MHz	5, 3, 2	40 @ 250 MHz	88	84	56	2.2	0.095	700
CP312RAQ27N_RZ	27 @ 250 MHz	5, 3, 2	40 @ 250 MHz	82	67	40	2.1	0.116	700
CP312RAQ30N_RZ	30 @ 250 MHz	5, 3, 2	37 @ 250 MHz	77	69	41	2.5	0.103	700
CP312RAQ33N_RZ	33 @ 250 MHz	5, 3, 2	40 @ 250 MHz	74	53	—	1.90	0.124	700
CP312RAQ36N_RZ	36 @ 250 MHz	5, 3, 2	39 @ 250 MHz	79	67	—	1.95	0.134	700
CP312RAQ39N_RZ	39 @ 250 MHz	5, 3, 2	37 @ 250 MHz	73	56	—	1.80	0.163	680
CP312RAQ43N_RZ	43 @ 250 MHz	5, 3, 2	40 @ 250 MHz	82	74	—	1.75	0.176	620
CP312RAQ47N_RZ	47 @ 200 MHz	5, 3, 2	37 @ 200 MHz	73	50	—	1.70	0.200	590
CP312RAQ51N_RZ	51 @ 200 MHz	5, 3, 2	38 @ 200 MHz	77	57	—	1.65	0.216	570
CP312RAQ56N_RZ	56 @ 200 MHz	5, 3, 2	37 @ 200 MHz	72	48	—	1.55	0.260	490
CP312RAQ62N_RZ	62 @ 200 MHz	5, 3, 2	37 @ 200 MHz	73	50	—	1.70	0.312	460
CP312RAQ68N_RZ	68 @ 200 MHz	5, 3, 2	35 @ 200 MHz	63	—	—	1.40	0.372	420
CP312RAQ75N_RZ	75 @ 150 MHz	5, 3, 2	28 @ 150 MHz	62	—	—	1.35	0.396	400
CP312RAQ82N_RZ	82 @ 150 MHz	5, 3, 2	30 @ 150 MHz	66	—	—	1.30	0.424	390
CP312RAQ91N_RZ	91 @ 150 MHz	5, 3, 2	29 @ 150 MHz	64	—	—	1.20	0.576	330
CP312RAQR10_RZ	100 @ 150 MHz	5, 3, 2	28 @ 150 MHz	62	—	—	1.10	0.707	290
CP312RAQR11_RZ	110 @ 150 MHz	5, 3, 2	28 @ 150 MHz	55	—	—	1.05	0.725	270
CP312RAQR12_RZ	120 @ 150 MHz	5, 3, 2	28 @ 150 MHz	52	—	—	1.00	0.765	260
CP312RAQR13_RZ	130 @ 150 MHz	5, 3, 2	28 @ 150 MHz	50	—	—	0.97	0.804	250
CP312RAQR15_RZ	150 @ 150 MHz	5, 3, 2	28 @ 150 MHz	47	—	—	0.93	1.05	220
CP312RAQR18_RZ	180 @ 100 MHz	5, 3, 2	24 @ 100 MHz	44	—	—	0.85	1.39	190
CP312RAQR22_RZ	220 @ 100 MHz	5, 3, 2	24 @ 100 MHz	—	—	—	0.76	1.69	160
CP312RAQR27_RZ	270 @ 100 MHz	5, 3, 2	25 @ 100 MHz	—	—	—	0.72	2.06	140
CP312RAQR30_RZ	300 @ 100 MHz	5, 3, 2	25 @ 100 MHz	—	—	—	0.63	2.66	120
CP312RAQR33_RZ	330 @ 100 MHz	5, 3, 2	25 @ 100 MHz	—	—	—	0.59	2.93	110
CP312RAQR39_RZ	390 @ 100 MHz	5, 3, 2	25 @ 100 MHz	—	—	—	0.55	3.92	90
CP312RAQR47_RZ	470 @ 100 MHz	5, 3, 2	26 @ 100 MHz	—	—	—	0.50	5.40	70

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

CP312RAQR47JRZ

Tolerance: **G** = 2% **H** = 3% **J** = 5%
(Table shows stock values and tolerances in bold.)

Termination: **R** = Matte 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

Screening: **Z** = Unscreened
H = Coilcraft CP-SA-10001 Group A

- Screening performed to the document's latest revision.
- Custom testing also available.
- Country of origin restrictions available; prefix option G.

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP E4982A impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured using an Agilent/HP 4991A with an Agilent/HP 16197 test fixture.
5. SRF measured using an Agilent/HP 5071C/8722ES network analyzer and a Coilcraft CCF1052 test fixture.
6. DCR measured on a micro-ohmmeter and a Coilcraft CCF1010/A test fixture.
7. Maximum current that can be applied at 125°C.
8. Electrical specifications at 25°C.

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

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