

# Chip Inductors for Critical Applications CP312RAB

- Higher inductance values than other 0603 inductors
- Ferrite construction for high current handling
- Inductance values: 47 nH–22  $\mu$ H; 5% and 2% tolerance

**Core material** Ceramic/Ferrite

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

**Weight** 4.8 – 6.2 mg

**Ambient temperature** –40°C to +85°C with Irms current

**Maximum part temperature** +100°C (ambient + temp rise).

**Storage temperature** Component: –65°C to +100°C.

Tape and reel packaging: –55°C to +80°C

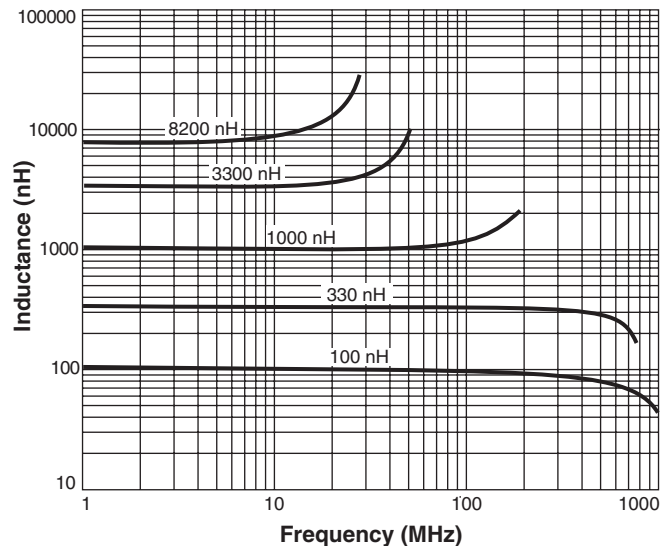
**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Temperature Coefficient of Inductance (TCL)** +50 to +150 ppm/°C

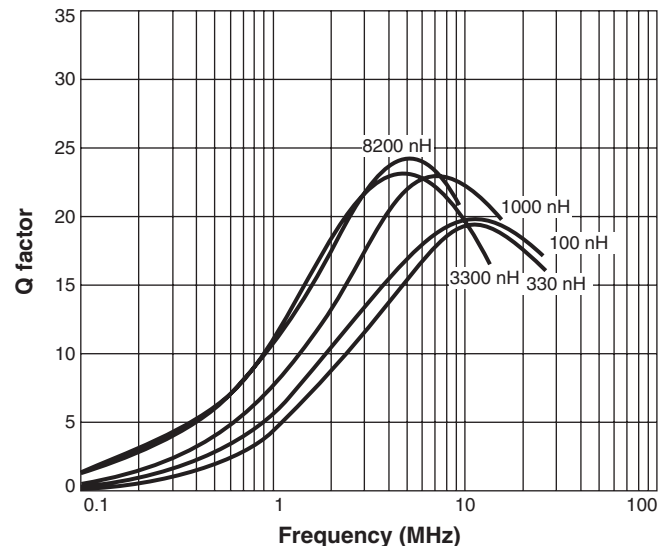
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Packaging** 2000 per 7" reel. Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.1 mm pocket depth

## Typical L vs Frequency



## Typical Q vs Frequency



**S-Parameter files**

ON OUR WEB SITE

**SPICE models**

ON OUR WEB SITE

# CP312RAB Series (0603)

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	I <sub>max</sub> (A)	Color code	Overall width
CP312RAB47N_LZ	47 @ 7.9MHz	5,2	12 @ 7.9MHz	1500	0.075	1.40	Black	B1
CP312RAB51N_LZ	51 @ 7.9MHz	5,2	12 @ 7.9MHz	1400	0.075	1.00	Violet	B1
CP312RAB72N_LZ	72 @ 7.9MHz	5,2	12 @ 7.9MHz	1400	0.12	1.40	Brown	B1
CP312RAB101_LZ	100 @ 7.9MHz	5,2	12 @ 7.9MHz	1150	0.13	1.40	Red	B1
CP312RAB121_LZ	120 @ 7.9MHz	5,2	12 @ 7.9MHz	1100	0.15	1.40	Orange	B1
CP312RAB151_LZ	150 @ 7.9MHz	5,2	15 @ 7.9MHz	1050	0.15	1.30	Yellow	B1
CP312RAB181_LZ	180 @ 7.9MHz	5,2	15 @ 7.9MHz	950	0.15	1.30	Green	B1
CP312RAB241_LZ	240 @ 7.9MHz	5,2	15 @ 7.9MHz	800	0.16	0.95	Violet	B1
CP312RAB271_LZ	270 @ 7.9MHz	5,2	15 @ 7.9MHz	775	0.30	0.71	Gray	B1
CP312RAB331_LZ	330 @ 7.9MHz	5,2	15 @ 7.9MHz	725	0.46	0.56	White	B1
CP312RAB391_LZ	390 @ 7.9MHz	5,2	15 @ 7.9MHz	620	0.51	0.50	Black	B1
CP312RAB471_LZ	470 @ 7.9MHz	5,2	15 @ 7.9MHz	540	0.62	0.42	Brown	B1
CP312RAB561_LZ	560 @ 7.9MHz	5,2	15 @ 7.9MHz	525	0.44	0.55	Red	B1
CP312RAB681_LZ	680 @ 7.9MHz	5,2	15 @ 7.9MHz	260	0.52	0.47	Orange	B2
CP312RAB781_LZ	780 @ 7.9MHz	5,2	15 @ 7.9MHz	460	0.83	0.39	Yellow	B1
CP312RAB821_LZ	820 @ 7.9MHz	5,2	15 @ 7.9MHz	410	0.69	0.40	Green	B2
CP312RAB102_LZ	1000 @ 7.9MHz	5,2	15 @ 7.9MHz	190	0.81	0.40	Blue	B2
CP312RAB122_LZ	1200 @ 7.9MHz	5,2	15 @ 7.9MHz	160	0.87	0.37	Violet	B2
CP312RAB152_LZ	1500 @ 7.9MHz	5,2	15 @ 7.9MHz	100	0.96	0.35	Gray	B2
CP312RAB182_LZ	1800 @ 7.9MHz	5,2	15 @ 7.9MHz	80	1.1	0.35	White	B2
CP312RAB222_LZ	2200 @ 7.9MHz	5,2	15 @ 7.9MHz	68	1.2	0.32	Black	B2
CP312RAB272_LZ	2700 @ 7.9MHz	5,2	15 @ 7.9MHz	60	1.5	0.28	Brown	B2
CP312RAB332_LZ	3300 @ 7.9MHz	5,2	15 @ 7.9MHz	42	1.5	0.28	Red	B2
CP312RAB392_LZ	3900 @ 7.9MHz	5,2	15 @ 7.9MHz	40	1.6	0.28	Orange	B2
CP312RAB472_LZ	4700 @ 7.9MHz	5,2	15 @ 7.9MHz	34	2.1	0.26	Yellow	B2
CP312RAB562_LZ	5600 @ 7.9MHz	5,2	15 @ 7.9MHz	32	2.6	0.24	Green	B2
CP312RAB682_LZ	6800 @ 7.9MHz	5,2	15 @ 7.9MHz	31	3.1	0.20	Black	B2
CP312RAB782_LZ	7800 @ 7.9MHz	5,2	15 @ 7.9MHz	28	3.5	0.20	Blue	B2
CP312RAB822_LZ	8200 @ 7.9MHz	5,2	15 @ 7.9MHz	26	3.6	0.19	Violet	B2
CP312RAB103_LZ	10,000 @ 2.5MHz	5,2	12 @ 2.5MHz	25	4.8	0.18	Gray	B2
CP312RAB153_LZ	15,000 @ 2.5MHz	5,2	20 @ 2.5MHz	23	7.1	0.17	White	B2
CP312RAB183_LZ	18,000 @ 2.5MHz	5,2	20 @ 2.5MHz	22	7.6	0.16	Brown	B2
CP312RAB223_LZ	22,000 @ 2.5MHz	5,2	22 @ 2.5MHz	19	8.81	0.13	Black	B2

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

**CP312RAB822JLZ**

**Tolerance:** G = 2% J = 5%

**Termination:** L = Silver-palladium-platinum-glass frit.

**Special order:**

T = Tin-silver-copper (95.5/4/0.5) or

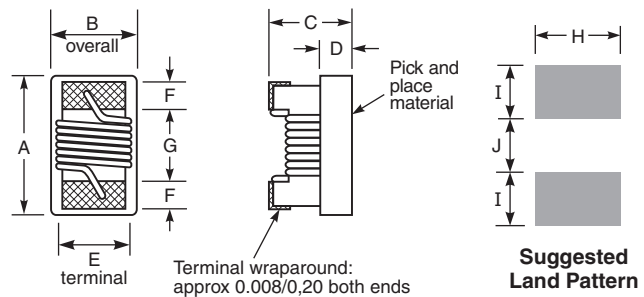
S = Tin-lead (63/37).

**Testing:** Z = Unscreened

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

All screening performed to the document's latest revision

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
  - Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
  - SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.
  - DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF1010 test fixture.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



A	B	C	D	E	F	G	H	I	J
max	See note 2	max	ref						
0.071		0.044	0.015	0.030	0.013	0.034	0.040	0.025	0.025
1,80		1,12	0,38	0,76	0,33	0,86	1,02	0,64	0,64

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.
- B1 = 0.040 ± 0.004 in / 1,016 ± 0,102 mm  
B2 = 0.046 ± 0.004 in / 1,169 ± 0,102 mm



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