

# Chip Inductors for Critical Applications AR312RAP

- Higher inductance values than other 0603 ceramic chip inductors
- 19 inductance values from 240 nH – 2.7  $\mu$ H

Part number <sup>1,7</sup>	Inductance at 25 MHz <sup>2</sup> $\pm 5\%$ (nH)	Q at 25 MHz <sup>3</sup>		SRF (MHz) <sup>4</sup>		DCR max <sup>5</sup> (Ohms)	I <sub>max</sub> (mA)
		min	typ	min	typ		
AR312RAP241JPZ	240	20	16	450	360	1.00	250
AR312RAP251JPZ	250	19	15	420	340	1.05	240
AR312RAP301JPZ	300	19	15	410	330	1.15	230
AR312RAP311JPZ	310	20	16	420	330	1.15	230
AR312RAP331JPZ	330	10	13	330	420	0.97	330
AR312RAP341JPZ	340	15	12	435	350	1.45	200
AR312RAP361JPZ	360	16	12	355	285	1.50	190
AR312RAP391JPZ	390	10	13	320	400	1.05	330
AR312RAP471JPZ	470	9	12	160	200	1.15	300
AR312RAP511JPZ	510	9	12	270	340	1.20	300
AR312RAP561JPZ	560	9	12	260	330	1.35	300
AR312RAP681JPZ	680	9	12	240	310	1.80	260
AR312RAP821JPZ	820	11	14	230	290	2.45	190
AR312RAP102JPZ	1000	11	14	200	250	2.80	190
AR312RAP122JPZ	1200	11	14	180	230	3.20	180
AR312RAP152JPZ	1500	12	15	150	190	4.10	150
AR312RAP182JPZ	1800	12	16	140	180	5.30	140
AR312RAP222JPZ	2200	12	16	130	165	5.90	130
AR312RAP272JPZ	2700	12	16	120	150	7.00	120

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

### AR312RAP272JPZ

**Termination: P** = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.

**C** = Tin-lead (63/37) over gold over nickel over moly-mag.

**S** = Tin-lead (63/37) over leach-resistant silver-platinum-glass frit.

**A** = Gold over nickel over moly-mag

**L** = Silver-palladium-platinum-glass frit

**Screening: Z** = Unscreened

**H** = Coilcraft CP-SA-10001 Group A

**1** = EEE-INST-002 (Family 3) Level 1

**2** = EEE-INST-002 (Family 3) Level 2

**3** = EEE-INST-002 (Family 3) Level 3

**4** = MIL-STD-981 (Family 50) Class B

**5** = MIL-STD-981 (Family 50) Class S

**F** = ESCC3201 (F4 operational life performed at 90°C)

• Screening performed to the document's latest revision.

• Lot qualification (Group B) available.

• Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.

• Country of origin restrictions available; prefix option G or F.

2. Inductance measured at 0.1 Vrms, using a Coilcraft SMD-A fixture in Agilent/HP 4287A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.

3. Q measured at using an Agilent/HP 16197A fixture in Agilent/HP 4291 impedance analyzer or equivalents.

4. SRF measured using Agilent/HP 8753D network analyzer or equivalent with a Coilcraft CCF1232 test fixture.

5. DCR measured on a Keithley 580 micro-ohmmeter or equivalent 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

© Coilcraft, Inc. 2023

1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

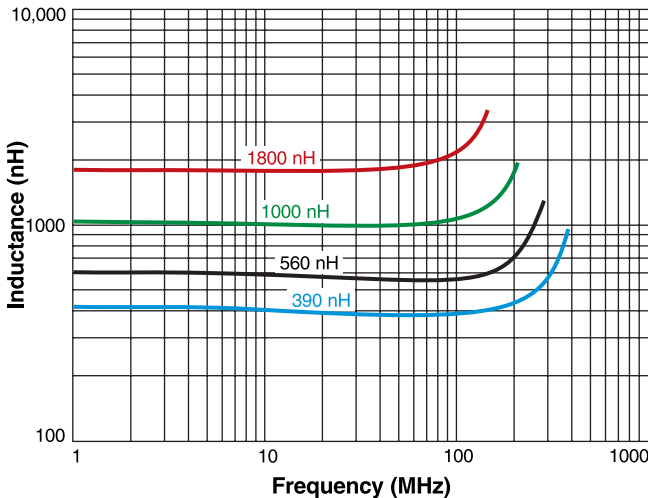
Fax 847-639-1508  
Email cps@coilcraft.com  
www.coilcraft-cps.com

Document AR894-1 Revised 02/03/23

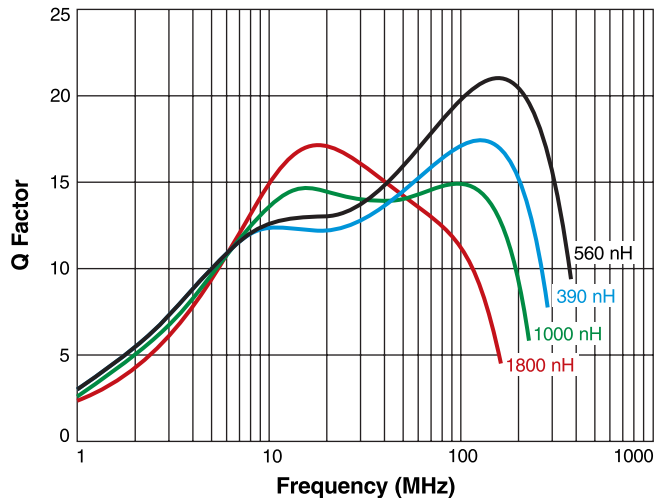
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# Chip Inductors – AR312RAP

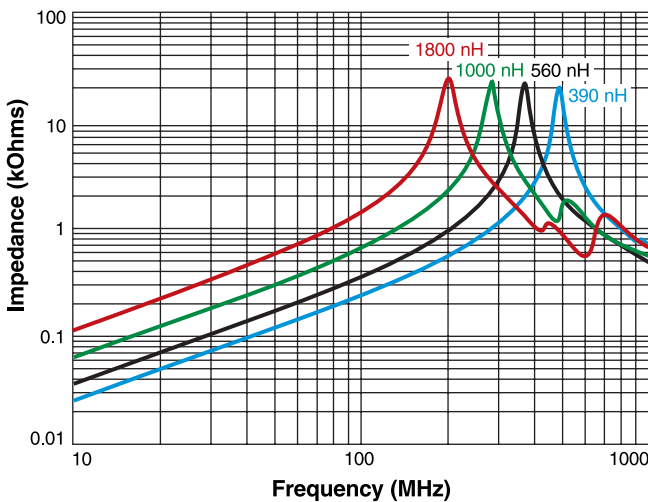
## Typical L vs Frequency



## Typical Q vs Frequency



## Typical Impedance vs Frequency



**Core material** Ceramic

**Terminations** Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit. Other terminations available at an additional cost.

**Weight** 3.2 – 4.4 mg

**Ambient temperature** -55°C to +125°C with  $I_{max}$  current

**Maximum part temperature** +155°C (ambient + temp rise)

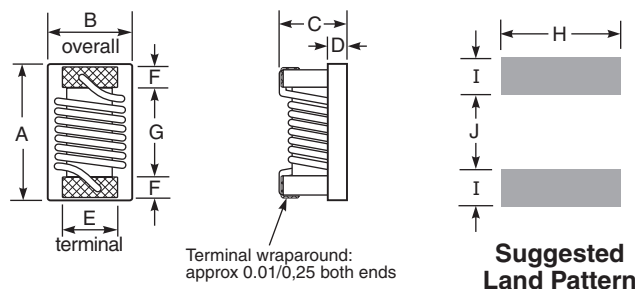
**Storage temperature** Component: -55°C to +155°C.  
Tape & reel packaging: -55°C to +80°C

**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, 1.0 mm pocket depth



A	B	C	D	E	F	G	H	I	J
max	max	max							
0.071	0.047	0.037	0.010	0.030	0.011	0.038	0.040	0.025	0.025
1,80	1,19	0,94	0,25	0,76	0,28	0,97	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.



1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

© Coilcraft, Inc. 2023

Fax 847-639-1508  
Email cps@coilcraft.com  
www.coilcraft-cps.com

Document AR894-2 Revised 02/03/23

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.