

# Chip Inductors for Critical Applications ST312RAP

- Higher inductance values than other 0603 ceramic chip inductors
- 14 inductance values from 330 nH – 3.3 µH

Part number <sup>1</sup>	Inductance <sup>2</sup> ±5% (nH)	Q <sub>typ</sub> <sup>3</sup>	SRF typ <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	Irms <sup>6</sup> (mA)	Color code
ST312RAP331JRZ	330 @ 25 MHz	13 @ 25 MHz	420	0.970	330	Violet
ST312RAP391JRZ	390 @ 25 MHz	13 @ 25 MHz	400	1.05	330	Gray
ST312RAP471JRZ	470 @ 25 MHz	12 @ 25 MHz	200	1.15	300	White
ST312RAP511JRZ	510 @ 25 MHz	12 @ 25 MHz	340	1.20	300	Black
ST312RAP561JRZ	560 @ 25 MHz	12 @ 25 MHz	330	1.35	300	Brown
ST312RAP681JRZ	680 @ 25 MHz	12 @ 25 MHz	310	1.80	260	Red
ST312RAP821JRZ	820 @ 25 MHz	14 @ 25 MHz	290	2.45	190	Orange
ST312RAP102JRZ	1000 @ 25 MHz	14 @ 25 MHz	250	2.80	190	Yellow
ST312RAP122JRZ	1200 @ 25 MHz	14 @ 25 MHz	230	3.20	180	Green
ST312RAP152JRZ	1500 @ 25 MHz	15 @ 25 MHz	190	4.10	150	Blue
ST312RAP182JRZ	1800 @ 25 MHz	16 @ 25 MHz	180	5.30	140	Violet
ST312RAP222JRZ	2200 @ 25 MHz	16 @ 25 MHz	165	5.90	130	Gray
ST312RAP272JRZ	2700 @ 25 MHz	16 @ 25 MHz	150	7.00	120	White
ST312RAP332JRZ	3300 @ 25 MHz	18 @ 25 MHz	135	9.10	110	Black

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

### ST312RAP332JRZ

- Termination:** **R** = Matte tin over nickel over silver-platinum-glass frit  
Special order:  
**Q** = Tin-silver-copper (95.5/4/0.5) over tin over nickel over silver-platinum-glass frit.  
**P** = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.
- Testing:** **Z** = Unscreened  
**H** = Group A screening per Coilcraft CP-SA-10001  
All screening performed to the document's latest revision  
Custom screening also available

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 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. Current that causes a 15°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Electrical specifications at 25°C.

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

**Core material** Ceramic

**Terminations** Matte tin over nickel over silver-platinum-glass frit. Other terminations available at an additional cost.

**Weight** 3.2 – 4.4 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 & 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



CRITICAL PRODUCTS & SERVICES

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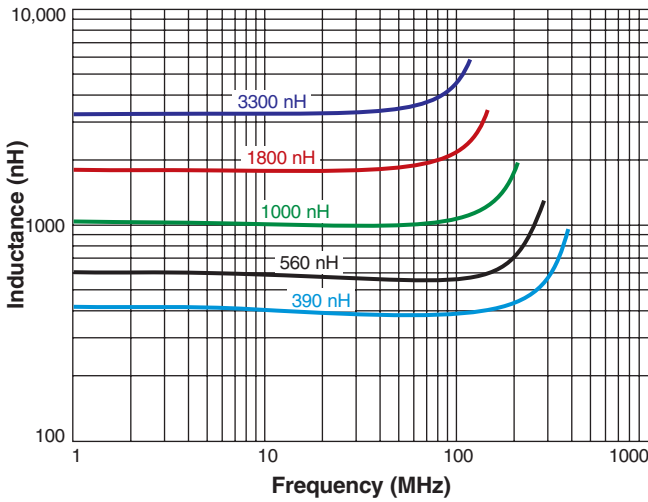
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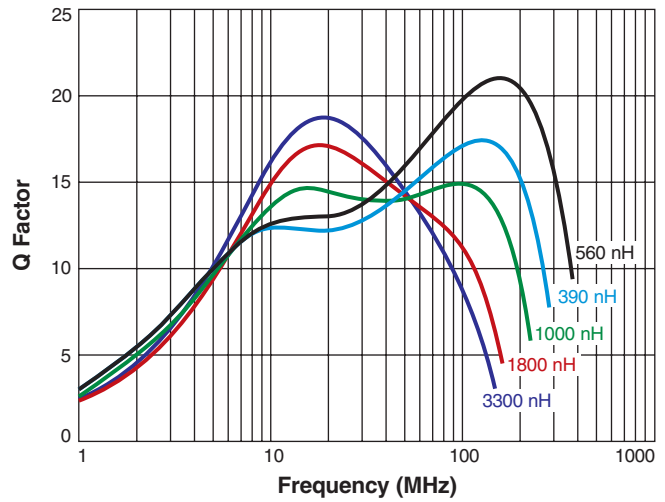
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# Chip Inductors – ST312RAP

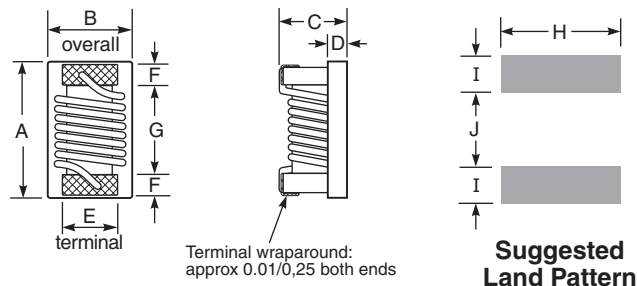
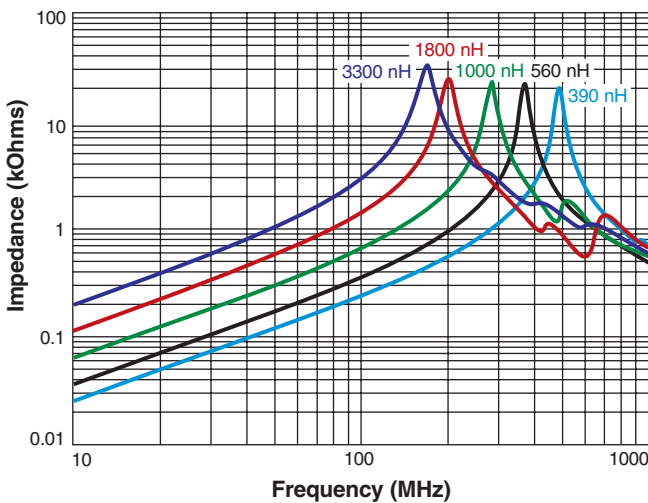
## Typical L vs Frequency



## Typical Q vs Frequency



## Typical Impedance vs Frequency



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**.



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