

Chip Inductors for Critical Applications ST312RAJ

- High current ratings and small size are ideal for high frequency and low voltage applications
- Continuous current ratings up to 2.4 Amps DC and handles transient currents up to 50% higher
- Higher Q factor than the 0603CS at lower inductance values

Part number ¹	Inductance ² (nH)	Percent tolerance ³	Q min ⁴	900 MHz		1.7 GHz		SRF min ⁵ (GHz)	DCR max ⁶ (Ohms)	I _{max} (A)
				L typ	Q typ	L typ	Q typ			
ST312RAJ1N6JRZ	1.6	5	24	1.67	49	1.65	63	>5.0	0.030	2.4
ST312RAJ3N6JRZ	3.6	5	24	3.65	70	3.75	90	>5.0	0.048	1.8
ST312RAJ3N9JRZ	3.9	5	25	3.74	70	3.90	90	>5.0	0.054	1.8
ST312RAJ6N8JRZ	6.8	5	35	6.72	70	7.10	75	>5.0	0.054	1.5
ST312RAJ7N5JRZ	7.5	5	38	7.33	70	7.90	68	3.7	0.059	1.5
ST312RAJ10N_RZ	10	5,2	38	9.70	73	10.5	57	3.7	0.071	1.3
ST312RAJ12N_RZ	12	5,2	38	12.3	68	14.5	41	3.0	0.075	1.3
ST312RAJ15N_RZ	15	5,2	38	15.5	65	17.6	40	2.8	0.080	1.2
ST312RAJ18N_RZ	18	5,2	40	19.5	62	25.0	40	2.8	0.099	1.1
ST312RAJ22N_RZ	22	5,2	42	24.0	61	31.5	26	2.4	0.099	1.1
ST312RAJ24N_RZ	24	5,2	42	25.8	55	35.0	21	2.4	0.105	1.1
ST312RAJ33NJRZ	33	5	47	34.3	50	—	—	1.9	0.175	0.85
ST312RAJ47NJRZ	47	5	40	49.5	45	—	—	1.5	0.195	0.75

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

ST312RAJ47NJRZ

Tolerance: G = 2% J = 5% (Table shows stock tolerances in bold.)

Termination: R = Matte tin over nickel over silver-platinum glass frit

L = Silver-palladium-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.

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

T = Tin-silver-copper (95.5/4/0.5) over silver-platinum glass frit.

Screening: Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

- Screening performed to the document's latest revision.
- Lot qualification (Group B) available.
- Custom testing also available.
- Country of origin restrictions available; prefix options G or F.

2. Inductance measured at 250 MHz using Coilcraft SMD-A fixture in Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at 250 MHz using Agilent/HP 4291A with Agilent/HP 16193 test fixture.

5. SRF measured using Agilent/HP 8720D network analyzer and Coilcraft SMD-D test fixture.

6. DCR measured on micro-ohmmeter and Coilcraft CCF858 test fixture.

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.

Weight 3.3 – 5.7 mg

Ambient temperature -40°C to +125°C with Irms current

Maximum part temperature +145°C (ambient + temp rise).

Storage temperature Component: -55°C to +145°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, 1.0 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](#).



CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2023

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

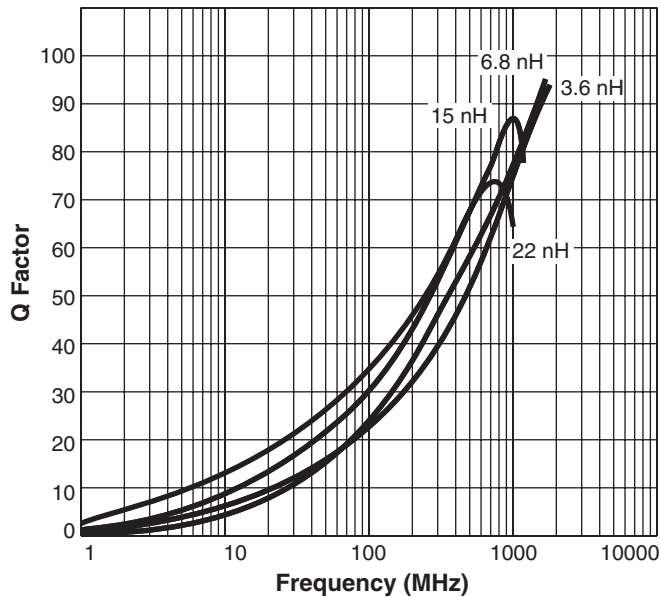
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document ST218-1 Revised 02/22/23

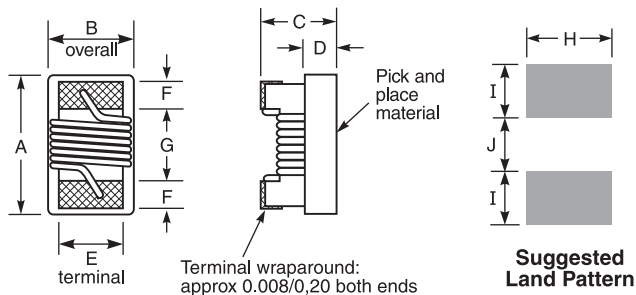
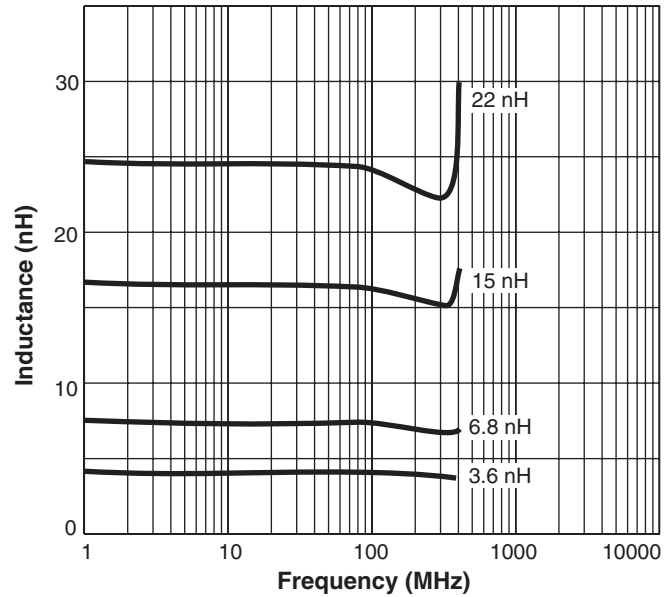
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

ST312RAJ Chip Inductors

Typical Q vs Frequency



Typical L vs Frequency



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 for 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**.

