

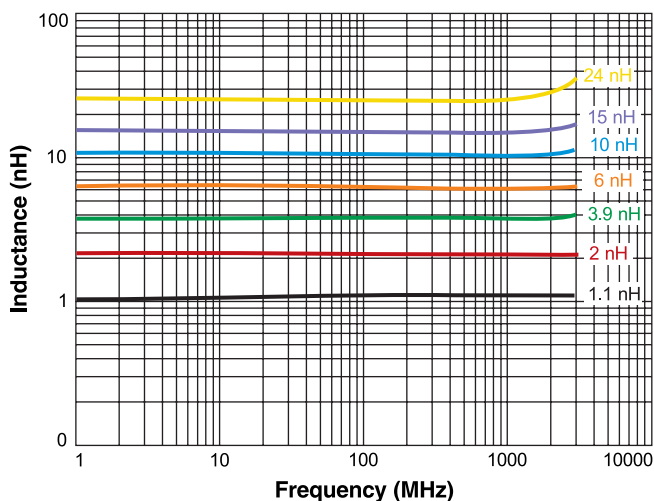
**NEW!**

# Ceramic Chip Inductors ST146RAA

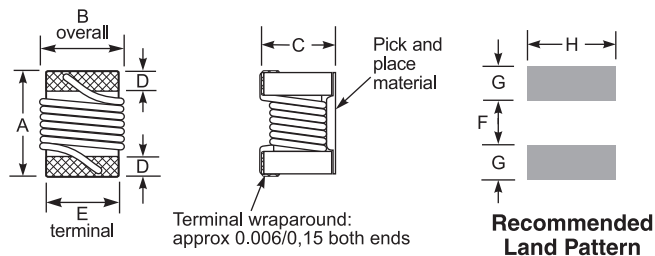
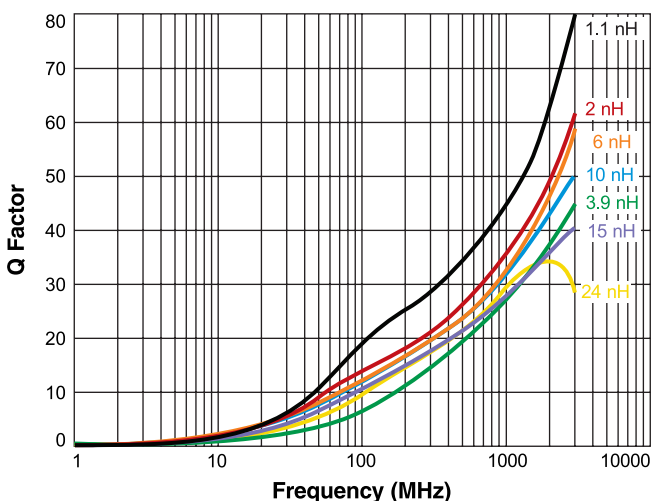
- World's smallest high-frequency-wirewound chip inductor
- First performance-optimized 01005 size (metric 0402, 0.4 x 0.2 mm)
- Extremely high Q, the highest in the market – higher than all thin film type

- Exceptionally low DCR – lower than all thin film type
- 36 inductance values from 0.45 nH to 24 nH

## Typical L vs Frequency



## Typical Q vs Frequency



Amax	Bmax	Cmax	Dref	Eref	Fref	Gref	Href	
0.019	0.011	0.0138	0.0035	0.008	0.006	0.009	0.012	inches
0,47	0,28	0,35	0,09	0,20	0,15	0,23	0,30	mm

**Note:** Dimensions are before solder application. For maximum overall dimensions including solder, add 0.0025 in / 0.064 mm to E and 0.006 in / 0.15 mm to A and C.

**Core material** Ceramic

**Terminations** Matte tin over nickel over silver-platinum glass frit

**Weight** 0.10 – 0.16 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 +150 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, 0.42 mm thick, 2 mm pocket spacing

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

**Coilcraft CPS**  
CRITICAL PRODUCTS & SERVICES

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

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Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

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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 – ST146RAA Series

Part number <sup>1</sup>	L <sup>2</sup> (nH)	Percent tolerance	250 MHz Q min	Q typ <sup>3</sup>			SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhms)	I <sub>max</sub> (mA) 125°C <sup>6</sup>
				900 MHz	1.7 GHz	2.4 GHz			
ST146RAAN45KRZ	0.45	<b>10</b>	18	38	48	59	>5	60	140
ST146RAAN50KRZ	0.50	<b>10</b>	15	31	40	48	>5	75	90
ST146RAA1N1KRZ	1.1	<b>10</b>	14	32	50	62	>5	95	140
ST146RAA1N2KRZ	1.2	<b>10</b>	16	36	45	56	>5	130	90
ST146RAA1N3KRZ	1.3	<b>10</b>	12	27	37	46	>5	200	50
ST146RAA2N0JRZ	2.0	<b>5</b>	16	34	45	55	>5	125	140
ST146RAA2N2JRZ	2.2	<b>5</b>	15	33	45	54	>5	180	90
ST146RAA2N3JRZ	2.3	<b>5</b>	11	25	36	46	>5	160	100
ST146RAA2N4JRZ	2.4	<b>5</b>	11	27	36	43	>5	260	50
ST146RAA2N5JRZ	2.5	<b>5</b>	10	25	35	44	>5	205	90
ST146RAA3N3JRZ	3.3	<b>5</b>	15	34	45	52	>5	150	140
ST146RAA3N6JRZ	3.6	<b>5</b>	13	31	42	48	>5	230	90
ST146RAA3N8JRZ	3.8	<b>5</b>	12	27	36	42	>5	345	50
ST146RAA3N9JRZ	3.9	<b>5</b>	10	27	37	42	>5	230	100
ST146RAA4N3JRZ	4.3	<b>5</b>	14	32	42	48	>5	190	140
ST146RAA4N7JRZ	4.7	<b>5</b>	16	34	47	57	>5	275	90
ST146RAA5N1JRZ	5.1	<b>5</b>	14	31	42	50	>5	325	70
ST146RAA5N3JRZ	5.3	<b>5</b>	12	29	40	47	>5	430	50
ST146RAA5N6JRZ	5.6	<b>5</b>	12	28	39	47	>5	275	100
ST146RAA5N8JRZ	5.8	<b>5</b>	16	35	48	58	>5	315	100
ST146RAA6N0JRZ	6.0	<b>5</b>	14	31	42	51	>5	340	90
ST146RAA6N2JRZ	6.2	<b>5</b>	14	33	44	53	>5	385	70
ST146RAA6N8JRZ	6.8	<b>5</b>	13	31	42	48	>5	310	100
ST146RAA6N9JRZ	6.9	<b>5</b>	12	30	40	46	>5	510	50
ST146RAA7N5JRZ	7.5	<b>5</b>	12	28	37	43	>5	320	100
ST146RAA7N8JRZ	7.8	<b>5</b>	14	31	42	49	>5	380	90
ST146RAA8N2JRZ	8.2	<b>5</b>	14	30	40	46	>5	445	70
ST146RAA8N8JRZ	8.8	<b>5</b>	13	30	39	44	>5	600	50
ST146RAA9N5JRZ	9.5	<b>5</b>	12	28	37	44	>5	575	70
ST146RAA10NJRZ	10	<b>5</b>	14	31	40	46	>5	520	70
ST146RAA12NJRZ	12	<b>5</b>	12	27	37	42	>5	640	70
ST146RAA13NJRZ	13	<b>5</b>	13	30	38	43	>5	730	50
ST146RAA15NJRZ	15	<b>5</b>	12	27	35	38	>5	820	50
ST146RAA18NJRZ	18	<b>5</b>	12	27	37	42	4.5	1020	40
ST146RAA20NJRZ	20	<b>5</b>	12	28	35	37	4.3	1300	40
ST146RAA24NJRZ	24	<b>5</b>	12	28	33	33	4.0	1550	40

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

### ST146RAA24NJRZ

**Tolerance:** J = 5% K = 10%

(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 = 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 250 MHz using an Agilent 4286A (or equivalent) with a Coilcraft CCF1426 test fixture using the listed correlation.

3. Q is measured at 250 MHz on an Agilent 4991 (or equivalent) with a Coilcraft CCF1481 test fixture.

4. SRF is measured on an Agilent 8753ES (or equivalent) with a Coilcraft CCF1406 test fixture.

5. DCR is measured on a Keithley 580 Micro-ohmmeter (or equivalent) with a Coilcraft CCF1099 test fixture.

6. Maximum current that can be applied at 125°C.

7. Electrical specifications at 25°C.

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



CRITICAL PRODUCTS & SERVICES

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

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

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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.