

Chip Inductors for Critical Applications ST413RAD

- Highest Q factors for this body size, roughly 20% higher than our xx413RAA parts.
- Exceptional SRFs, tight tolerance and batch consistency

Part number ¹	Inductance ³ (nH)	Percent tolerance	Q min ⁴	SRF min ⁵ (GHz)	DCR max ⁶ (mOhms)	I _{max} (A)
ST413RAD3N0_LZ ²	3.0 @ 50 MHz	5	57 @ 1000 MHz	>5.00	38	1.8
ST413RAD4N1_LZ	4.1 @ 50 MHz	5	75 @ 1000 MHz	>5.00	50	1.8
ST413RAD7N8_LZ ²	7.8 @ 50 MHz	5	51 @ 500 MHz	3.80	50	1.6
ST413RAD10N_LZ	10 @ 50 MHz	5,2	60 @ 500 MHz	3.20	60	1.5
ST413RAD12N_LZ	12 @ 50 MHz	5,2	57 @ 500 MHz	2.40	60	1.5
ST413RAD18N_LZ	18 @ 50 MHz	5,2	62 @ 350 MHz	2.10	70	1.4
ST413RAD22N_LZ	22 @ 50 MHz	5,2	62 @ 350 MHz	2.05	70	1.4
ST413RAD33N_LZ	33 @ 50 MHz	5,2	49 @ 150 MHz	1.70	90	1.2
ST413RAD36N_LZ	36 @ 50 MHz	5,2	57 @ 150 MHz	1.40	90	1.1
ST413RAD39N_LZ	39 @ 50 MHz	5,2	45 @ 150 MHz	1.30	90	1.1
ST413RAD47N_LZ	47 @ 50 MHz	5,2,1	45 @ 150 MHz	1.45	120	0.95
ST413RAD56N_LZ	56 @ 50 MHz	5,2,1	43 @ 150 MHz	1.08	120	0.95
ST413RAD68N_LZ	68 @ 50 MHz	5,2,1	54 @ 150 MHz	1.15	130	0.85
ST413RAD82N_LZ	82 @ 50 MHz	5,2,1	54 @ 150 MHz	1.06	160	0.80
ST413RADR10_LZ	100 @ 50 MHz	5,2,1	51 @ 150 MHz	0.82	160	0.80

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

ST413RADR10GLZ

Tolerance: F = 1% G = 2% J = 5%

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

Special order:

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

T = Tin-silver-copper (95.5/4/0.5) 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. Part is wound on low profile coilform.
3. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
4. Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
5. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.
6. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
7. Electrical specifications at 25°C.

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

Core material Ceramic

Terminations Silver-palladium-platinum-glass frit.

Ambient temperature -40°C to +125°C with I_{max} 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 +155 ppm/°C

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

Packaging 2000/7" reel

Standard height parts: Plastic tape: 8 mm wide, 0.23 mm thick,

4 mm pocket spacing, 1.8 mm pocket depth

Low profile parts: Plastic tape: 8 mm wide, 0.3 mm thick,

4 mm pocket spacing, 1.6 mm pocket depth

COILCRAFT ACCURATE
PRECISION REPEATABLE
MEASUREMENTS
SEE WEB SITE **TEST FIXTURES**

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CRITICAL PRODUCTS & SERVICES

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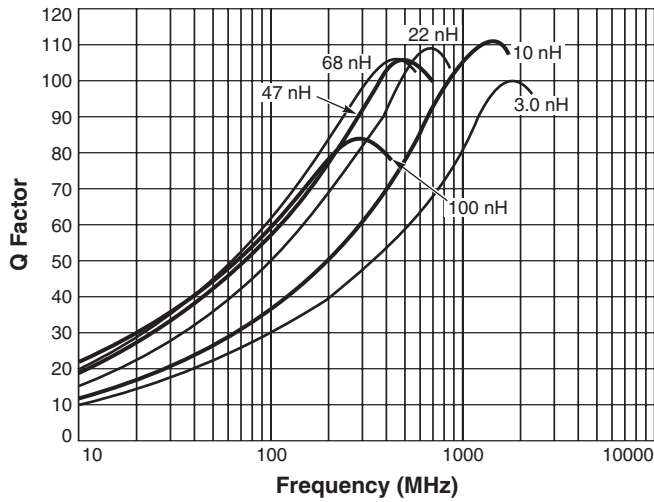
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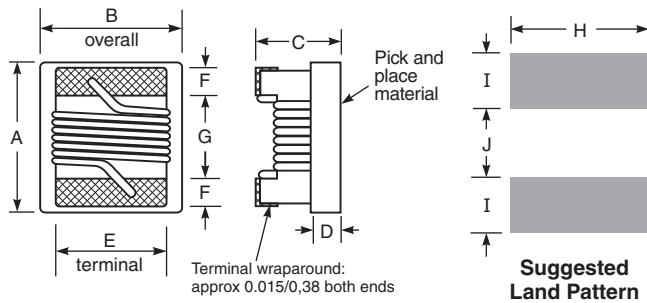
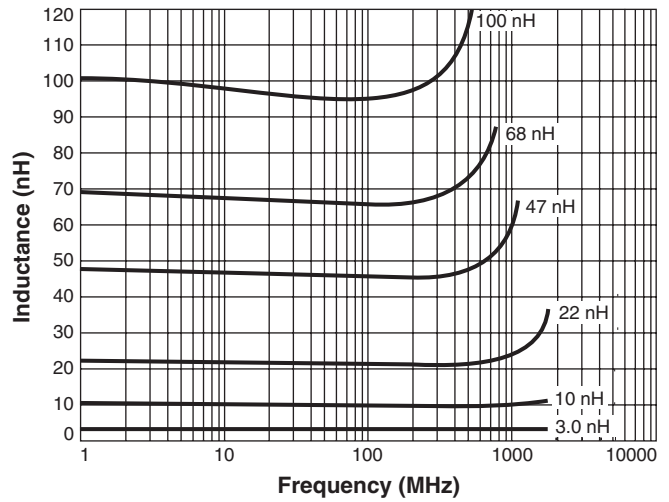
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ST413RAD Series (1008)

Typical Q vs Frequency



Typical L vs Frequency



A	B	C	D	E	F	G	H	I	J
max	max	max*	ref						
0.115	0.110	0.080	0.020	0.080	0.020	0.060	0.100	0.040	0.050
2,92	2,79	2,03	0,51	2,03	0,51	1,52	2,54	1,02	1,27

*Low profile parts: 0.050/1,27

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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