

PRELIMINARY

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 (OhmST)	I _{max} (A)
ST413RAD3N0JLZ ²	3.0 @ 50 MHz	5	70 @ 1500 MHz	>5.00	0.04	1.6
ST413RAD4N1JLZ	4.1 @ 50 MHz	5	75 @ 1500 MHz	>5.00	0.05	1.6
ST413RAD7N8JLZ ²	7.8 @ 50 MHz	5	75 @ 500 MHz	3.80	0.05	1.6
ST413RAD10N_LZ	10 @ 50 MHz	5,2	60 @ 500 MHz	3.60	0.06	1.6
ST413RAD12N_LZ	12 @ 50 MHz	5,2	70 @ 500 MHz	2.80	0.06	1.5
ST413RAD18N_LZ	18 @ 50 MHz	5,2	62 @ 350 MHz	2.70	0.07	1.4
ST413RAD22N_LZ	22 @ 50 MHz	5,2	62 @ 350 MHz	2.05	0.07	1.4
ST413RAD33N_LZ	33 @ 50 MHz	5,2	75 @ 350 MHz	1.70	0.09	1.3
ST413RAD39N_LZ	39 @ 50 MHz	5,2	75 @ 350 MHz	1.30	0.09	1.3
ST413RAD47N_LZ	47 @ 50 MHz	5,2,1	75 @ 350 MHz	1.45	0.12	1.2
ST413RAD56N_LZ	56 @ 50 MHz	5,2,1	75 @ 350 MHz	1.23	0.12	1.2
ST413RAD68N_LZ	68 @ 50 MHz	5,2,1	80 @ 350 MHz	1.15	0.13	1.1
ST413RAD82N_LZ	82 @ 50 MHz	5,2	80 @ 350 MHz	1.06	0.16	1.1
ST413RADR10_LZ	100 @ 50 MHz	5,2	62 @ 350 MHz	0.82	0.16	1.0

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

ST413RADR10 **G L Z**

Tolerance: G = 2% J = 5%

Termination: L = RoHS compliant silver-palladium-platinum-glass frit.
Special order: T = RoHS tin-silvercopper (95.5/4/0.5)
or S = non-RoHS tin-lead (63/37).

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

- Part is wound on low profile coilform.
- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
- Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
- SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.
- DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
- 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, +125°C to +140°C with derated current

Storage temperature Component: -40°C to +140°C.
Packaging: -40°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 INDEX **TEST FIXTURES**

Coilcraft **CPS**
CRITICAL PRODUCTS & SERVICES

These parts are preproduction products for electrical evaluation only.
Specification subject to change without notice.

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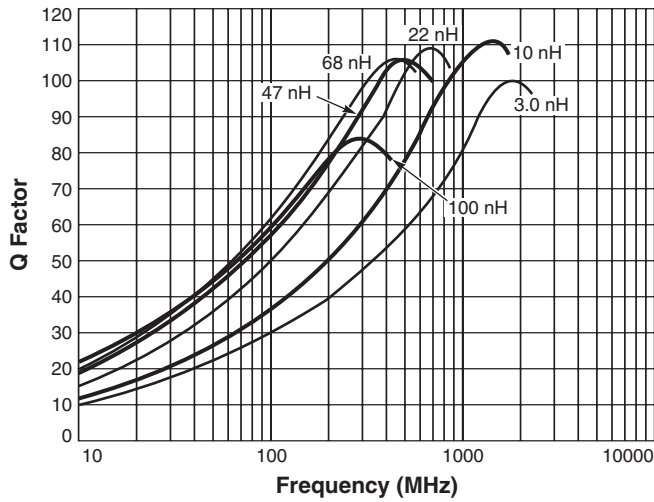
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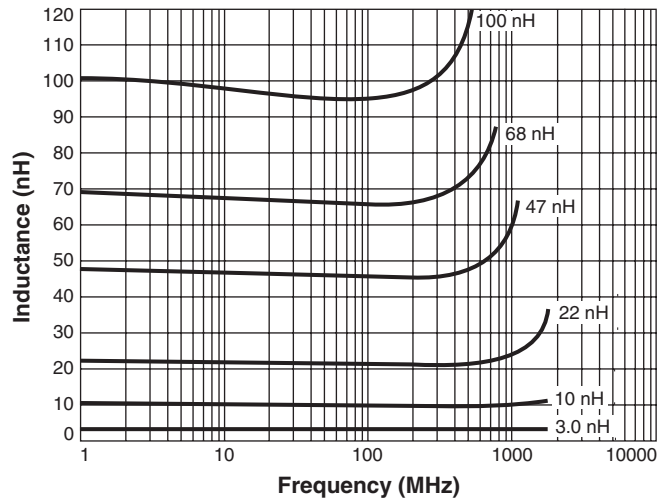
PRELIMINARY

ST413RAD Series (1008)

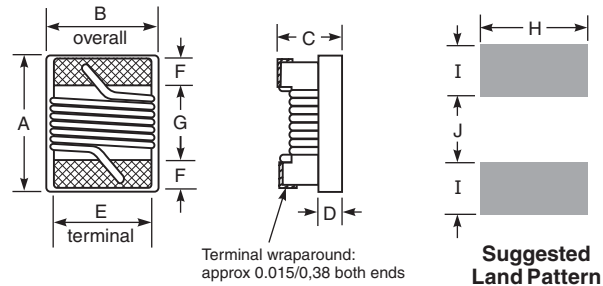
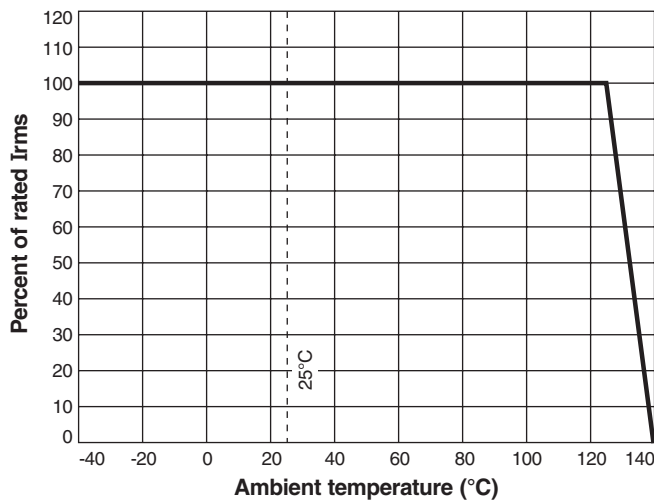
Typical Q vs Frequency



Typical L vs Frequency



Current Derating



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