

Chip Inductors for Critical Applications ST413RAE

These chip inductors have been designed especially for high frequency applications. Their ceramic construction delivers the highest possible SRF and excellent Q values.

The non-magnetic coilform also ensures the utmost in thermal stability, predictability and batch consistency.

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	Imax (mA)
ST413RAE100JLZ	10 @ 50 MHz	5	50 @ 500 MHz	3000	0.08	1000
ST413RAE120JLZ	12 @ 50 MHz	5	50 @ 500 MHz	3000	0.09	1000
ST413RAE150JLZ	15 @ 50 MHz	5	50 @ 500 MHz	3000	0.14	1000
ST413RAE180JLZ	18 @ 50 MHz	5	50 @ 350 MHz	2500	0.11	1000
ST413RAE220JLZ	22 @ 50 MHz	5,2,1	55 @ 350 MHz	2000	0.12	1000
ST413RAE270_LZ	27 @ 50 MHz	5,2,1	55 @ 350 MHz	1500	0.13	1000
ST413RAE330_LZ	33 @ 50 MHz	5,2,1	60 @ 350 MHz	1500	0.14	1000
ST413RAE390_LZ	39 @ 50 MHz	5,2,1	60 @ 350 MHz	1500	0.15	1000
ST413RAE470_LZ	47 @ 50 MHz	5,2,1	65 @ 350 MHz	1350	0.16	1000
ST413RAE560_LZ	56 @ 50 MHz	5,2,1	65 @ 350 MHz	1150	0.18	1000
ST413RAE680_LZ	68 @ 50 MHz	5,2,1	65 @ 350 MHz	1050	0.20	1000
ST413RAE820_LZ	82 @ 50 MHz	5,2,1	60 @ 350 MHz	950	0.22	1000
ST413RAE101_LZ	100 @ 25 MHz	5,2,1	60 @ 350 MHz	950	0.56	650
ST413RAE121_LZ	120 @ 25 MHz	5,2,1	60 @ 350 MHz	900	0.63	650
ST413RAE151_LZ	150 @ 25 MHz	5,2,1	45 @ 100 MHz	850	0.70	580
ST413RAE181_LZ	180 @ 25 MHz	5,2,1	45 @ 100 MHz	700	0.77	620
ST413RAE221_LZ	220 @ 25 MHz	5,2,1	45 @ 100 MHz	600	0.84	500
ST413RAE271_LZ	270 @ 25 MHz	5,2,1	45 @ 100 MHz	550	0.91	500
ST413RAE331_LZ	330 @ 25 MHz	5,2,1	45 @ 100 MHz	500	1.05	450
ST413RAE391_LZ	390 @ 25 MHz	5,2,1	45 @ 100 MHz	465	1.12	470
ST413RAE471_LZ	470 @ 25 MHz	5,2,1	45 @ 100 MHz	425	1.19	470
ST413RAE561_LZ	560 @ 25 MHz	5,2,1	45 @ 100 MHz	415	1.33	400
ST413RAE621_LZ	620 @ 25 MHz	5,2,1	45 @ 100 MHz	375	1.40	300
ST413RAE681_LZ	680 @ 25 MHz	5,2,1	45 @ 100 MHz	340	1.47	400
ST413RAE751_LZ	750 @ 25 MHz	5,2,1	45 @ 100 MHz	330	1.54	360
ST413RAE821_LZ	820 @ 25 MHz	5,2,1	45 @ 100 MHz	325	1.61	400
ST413RAE911_LZ	910 @ 25 MHz	5,2,1	35 @ 50 MHz	305	1.68	380
ST413RAE102_LZ	1000 @ 25 MHz	5,2,1	35 @ 50 MHz	290	1.75	370

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

ST413RAE102JLZ

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

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
 - Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
 - SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
 - DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 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. Other terminations available at additional cost.

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 per 7" reel Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.8 mm pocket depth

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

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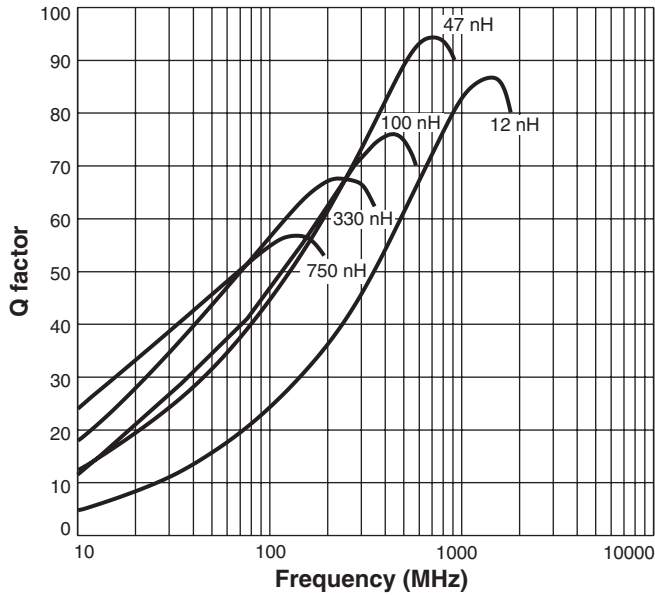
1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

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

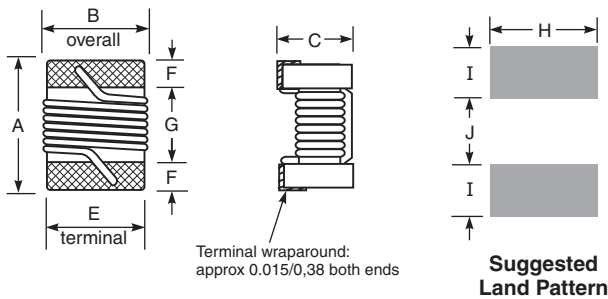
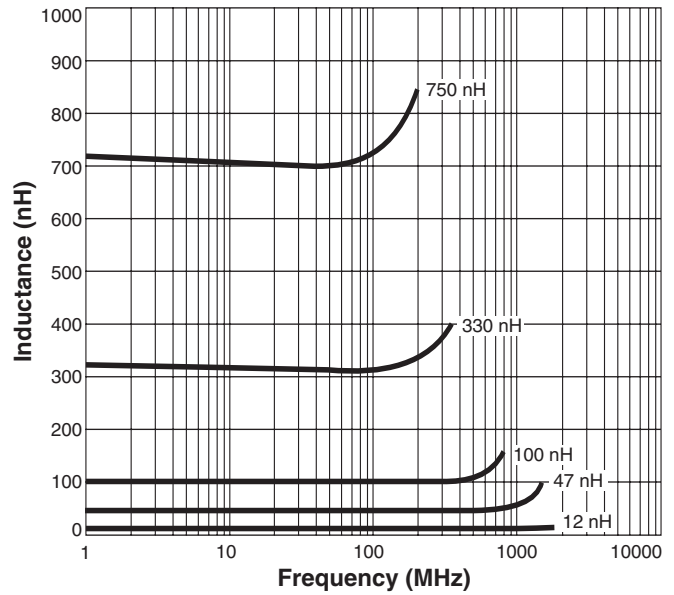
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ST413RAE Series (1008)

Typical Q vs Frequency



Typical L vs Frequency



A	B	C	E	F	G	H	I	J
max	max	max						
0.105	0.095	0.080	0.080	0.020	0.060	0.100	0.040	0.050
2,67	2,41	2,03	2,03	0,51	1,52	2,54	1,02	1,27
inches								
mm								

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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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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