

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

All screening performed to the document's latest revision
Custom screening also available

- 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



CRITICAL PRODUCTS & SERVICES

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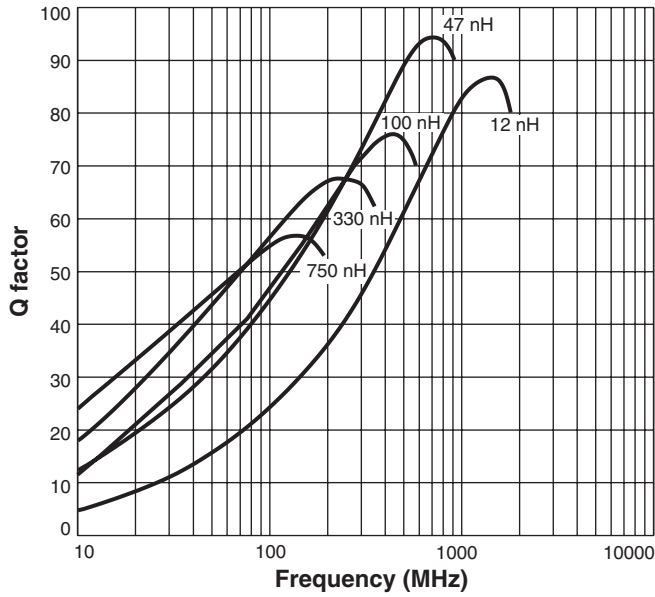
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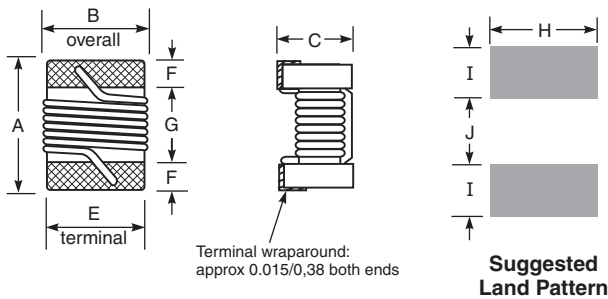
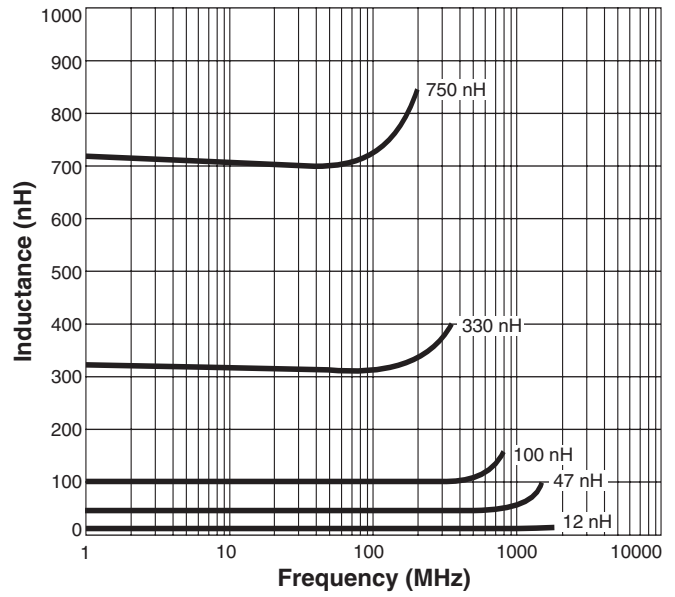
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

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.

