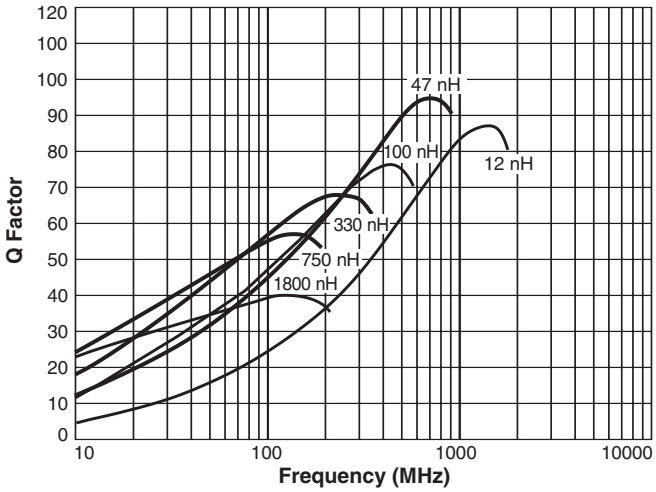
High-Reliability Chip Inductors MS413RAA

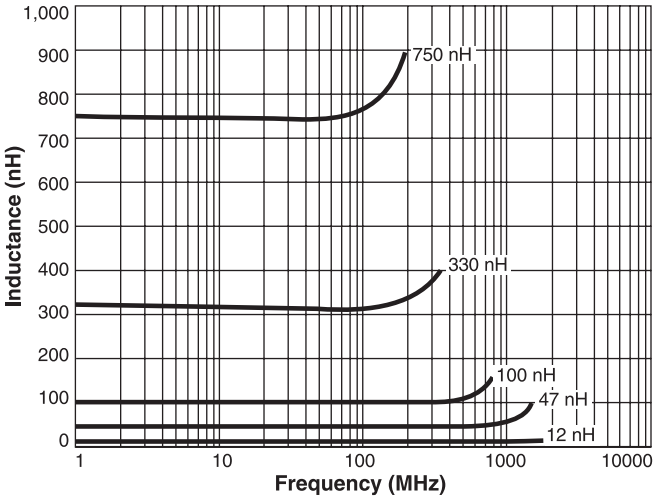
- High SRF and excellent Q values
- Tight tolerances, many values at 1%
- 28 inductance values from 10 nH to 1 µH

The MS413RAA features high temperature materials that allow operation in ambient temperatures up to 155°C and a leach-resistant base metalization with tin-lead (Sn-Pb) terminations that ensures the best possible board adhesion.

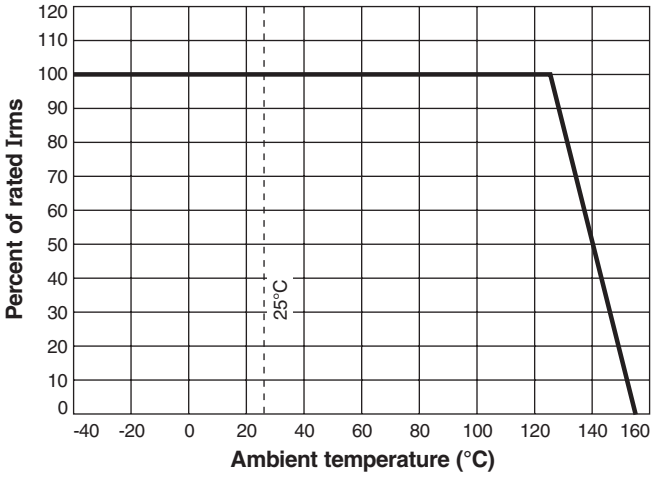
Typical Q vs Frequency

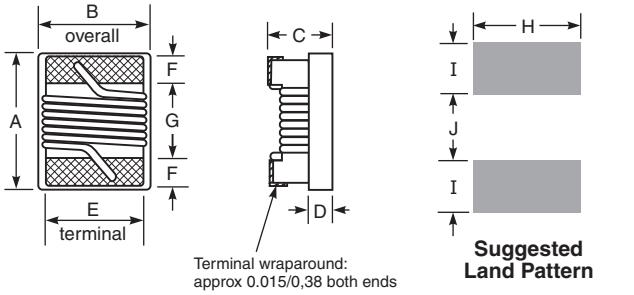


Typical L vs Frequency



Current Derating





A max	B max	C max	D ref	E	F	G	H	I	J
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

Note: Dimensions are before 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**.

Core material Ceramic

Terminations Tin-lead (63/37) over silver-platinum-glass frit

Ambient temperature –55°C to +125°C with Imax current, +125°C to +155°C with derated current

Storage temperature Component: –55°C to +155°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)

Enhanced crush-resistant packaging 2000 per 7″ reel
Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 2.0 mm pocket depth

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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.

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MS413RAA Series (1008)

Part number[1]	Inductance[2] (nH)	Percent tolerance	Q min[3]	SRF min[4] (MHz)	DCR max[5] (Ohms)	Imax (mA)	Color code[6]
MS413RAA100_SZ	10 @ 50 MHz	5,2	44 @ 500 MHz	3060	0.08	900	Black
MS413RAA120_SZ	12 @ 50 MHz	5,2	45 @ 500 MHz	2680	0.09	900	Red
MS413RAA150_SZ	15 @ 50 MHz	5,2	50 @ 500 MHz	2220	0.10	850	Orange
MS413RAA180_SZ	18 @ 50 MHz	5,2,1	50 @350 MHz	2200	0.11	900	Yellow
MS413RAA220_SZ	22 @ 50 MHz	5,2,1	55 @ 350 MHz	2100	0.12	900	Blue
MS413RAA270_SZ	27 @ 50 MHz	5,2,1	55 @ 350 MHz	1380	0.13	900	Black
MS413RAA330_SZ	33 @ 50 MHz	5,2,1	60 @ 350 MHz	1600	0.14	850	Orange
MS413RAA390_SZ	39 @ 50 MHz	5,2,1	60 @ 350 MHz	1420	0.15	850	Violet
MS413RAA470_SZ	47 @ 50 MHz	5,2,1	65 @ 350 MHz	1420	0.16	820	Red
MS413RAA560_SZ	56 @ 50 MHz	5,2,1	60 @ 350 MHz	1140	0.18	780	Yellow
MS413RAA680_SZ	68 @ 50 MHz	5,2,1	46 @ 100 MHz	1140	0.20	710	Gray
MS413RAA820_SZ	82 @ 50 MHz	5,2,1	48 @ 100 MHz	940	0.22	710	Red
MS413RAA101_SZ	100 @ 25 MHz	5,2,1	37 @ 100 MHz	900	0.56	440	Violet
MS413RAA121_SZ	120 @ 25 MHz	5,2,1	40 @ 100 MHz	840	0.63	410	White
MS413RAA151_SZ	150 @ 25 MHz	5,2,1	40 @ 100 MHz	740	0.70	400	Red
MS413RAA181_SZ	180 @ 25 MHz	5,2,1	38 @ 100 MHz	680	0.77	390	Orange
MS413RAA221_SZ	220 @ 25 MHz	5,2,1	40 @ 100 MHz	580	0.84	370	Green
MS413RAA271_SZ	270 @ 25 MHz	5,2,1	45 @ 100 MHz	540	0.91	330	White
MS413RAA331_SZ	330 @ 25 MHz	5,2,1	45 @ 100 MHz	500	1.05	330	Orange
MS413RAA391_SZ	390 @ 25 MHz	5,2,1	45 @ 100 MHz	480	1.12	310	Blue
MS413RAA471_SZ	470 @ 25 MHz	5,2,1	45 @ 100 MHz	400	1.19	280	Black
MS413RAA561_SZ	560 @ 25 MHz	5,2,1	40 @ 100 MHz	360	1.33	280	Green
MS413RAA621_SZ	620 @ 25 MHz	5,2,1	45 @ 100 MHz	360	1.40	270	Blue
MS413RAA681_SZ	680 @ 25 MHz	5,2,1	45 @ 100 MHz	345	1.47	270	Gray
MS413RAA751_SZ	750 @ 25 MHz	5,2,1	45 @ 100 MHz	335	1.54	270	Black
MS413RAA821_SZ	820 @ 25 MHz	5,2,1	45 @ 100 MHz	310	1.61	250	Brown
MS413RAA911_SZ	910 @ 25 MHz	5,2,1	35 @ 50 MHz	280	1.68	250	Red
MS413RAA102_SZ	1000 @ 25 MHz	5,2,1	34 @ 50 MHz	280	1.75	230	Yellow

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

MS413RAA102GSZ

Tolerance: **F** =1% **G** = 2% **J** = 5%
Termination: **S** =Tin-lead (63/37) over silver-platinum-glass frit.
Special order:
T =Tin-silver-copper (95.5/4/0.5) 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.
Testing: **Z** =COTS
H =Screening per Coilcraft CP-SA-10001
N =Screening per Coilcraft CP-SA-10003

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
3. Q measured using an Agilent/HP 4291A with an AgilentHP 16197A test fixture or equivalents.
4. SRF measured using an Aglilent/HP 8753D network analyzer or equivalent and a Coilcraft CCF1297 test fixture.
5. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
6. Current production parts are marked with one dot. Prior production parts were marked with three dots. Part marking does not indicate polarity
7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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This product may not be used in medical or high risk applications without prior Coilcraft approval.
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