

High-Reliability Chip Inductors ML413RAA

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

Features high temperature materials that allow operation in ambient temperatures up to 155°C.

Core material Ceramic

Terminations Silver-palladium-platinum-glass frit

Ambient temperature -55°C to +125°C with I_{max} current

Maximum part temperature +155°C (ambient + temp rise)

Storage temperature Component: -55°C to +155°C.

Tape and reel packaging: -55°C to +80°C

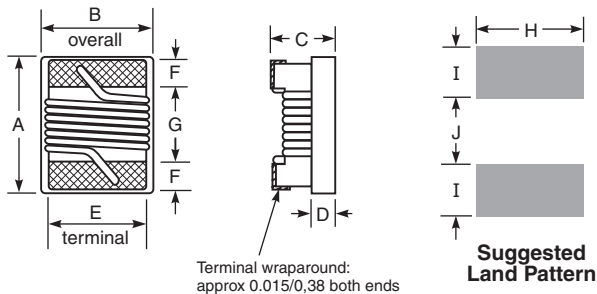
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +25 to +155 ppm/°C

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

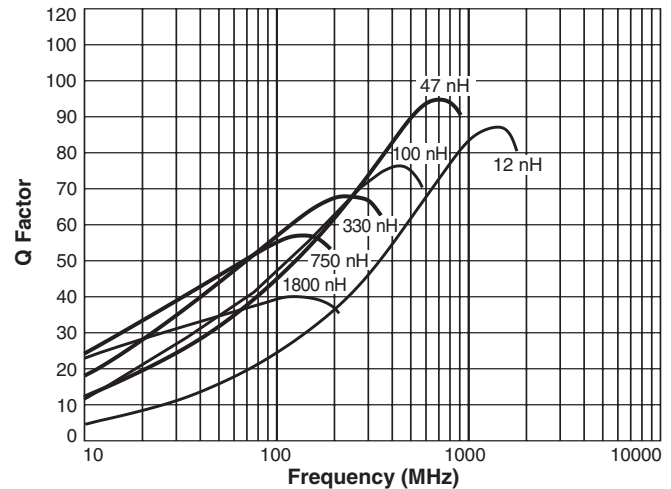
Enhanced crush-resistant packaging 2000 per 7" reel

Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 2.0 mm pocket depth

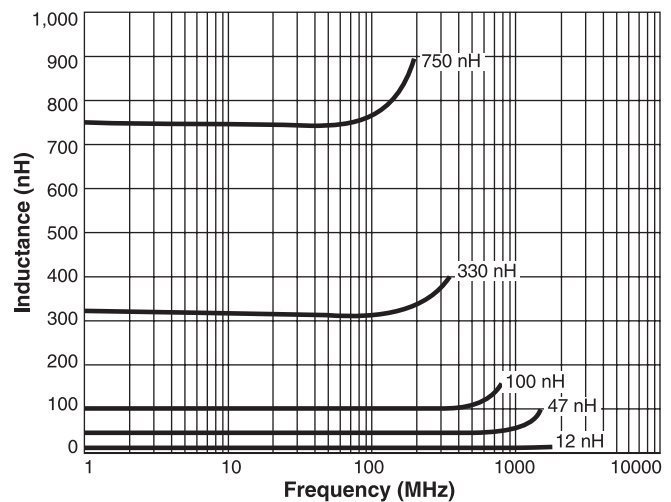


A max	B max	C max	D ref	E	F	G	H	I	J
0.115	0.110	0.080	0.020	0.080	0.020	0.060	0.100	0.040	0.050
2,92	2,79	2,03	0,51	2,03	0,51	1,52	2,54	1,02	1,27

Typical Q vs Frequency



Typical L vs Frequency



ML413RAA Series (1008)

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	I _{max} (mA)	Color code ⁶
ML413RAA100_LZ	10 @ 50 MHz	5,2	44 @ 500 MHz	3060	0.08	900	Black
ML413RAA120_LZ	12 @ 50 MHz	5,2	45 @ 500 MHz	2680	0.09	900	Red
ML413RAA150_LZ	15 @ 50 MHz	5,2	50 @ 500 MHz	2220	0.10	850	Orange
ML413RAA180_LZ	18 @ 50 MHz	5,2,1	50 @ 350 MHz	2200	0.11	900	Yellow
ML413RAA220_LZ	22 @ 50 MHz	5,2,1	55 @ 350 MHz	2100	0.12	900	Blue
ML413RAA270_LZ	27 @ 50 MHz	5,2,1	55 @ 350 MHz	1380	0.13	900	Black
ML413RAA330_LZ	33 @ 50 MHz	5,2,1	60 @ 350 MHz	1600	0.14	850	Orange
ML413RAA390_LZ	39 @ 50 MHz	5,2,1	60 @ 350 MHz	1420	0.15	850	Violet
ML413RAA470_LZ	47 @ 50 MHz	5,2,1	65 @ 350 MHz	1420	0.16	820	Red
ML413RAA560_LZ	56 @ 50 MHz	5,2,1	60 @ 350 MHz	1140	0.18	780	Yellow
ML413RAA680_LZ	68 @ 50 MHz	5,2,1	46 @ 100 MHz	1140	0.20	710	Gray
ML413RAA820_LZ	82 @ 50 MHz	5,2,1	48 @ 100 MHz	940	0.22	710	Red
ML413RAA101_LZ	100 @ 25 MHz	5,2,1	37 @ 100 MHz	900	0.56	440	Violet
ML413RAA121_LZ	120 @ 25 MHz	5,2,1	40 @ 100 MHz	840	0.63	410	White
ML413RAA151_LZ	150 @ 25 MHz	5,2,1	40 @ 100 MHz	740	0.70	400	Red
ML413RAA181_LZ	180 @ 25 MHz	5,2,1	38 @ 100 MHz	680	0.77	390	Orange
ML413RAA221_LZ	220 @ 25 MHz	5,2,1	40 @ 100 MHz	580	0.84	370	Green
ML413RAA271_LZ	270 @ 25 MHz	5,2,1	45 @ 100 MHz	540	0.91	330	White
ML413RAA331_LZ	330 @ 25 MHz	5,2,1	45 @ 100 MHz	500	1.05	330	Orange
ML413RAA391_LZ	390 @ 25 MHz	5,2,1	45 @ 100 MHz	480	1.12	310	Blue
ML413RAA471_LZ	470 @ 25 MHz	5,2,1	45 @ 100 MHz	400	1.19	280	Black
ML413RAA561_LZ	560 @ 25 MHz	5,2,1	40 @ 100 MHz	360	1.33	280	Green
ML413RAA621_LZ	620 @ 25 MHz	5,2,1	45 @ 100 MHz	360	1.40	270	Blue
ML413RAA681_LZ	680 @ 25 MHz	5,2,1	45 @ 100 MHz	345	1.47	270	Gray
ML413RAA751_LZ	750 @ 25 MHz	5,2,1	45 @ 100 MHz	335	1.54	270	Black
ML413RAA821_LZ	820 @ 25 MHz	5,2,1	45 @ 100 MHz	310	1.61	250	Brown
ML413RAA911_LZ	910 @ 25 MHz	5,2,1	35 @ 50 MHz	280	1.68	250	Red
ML413RAA102_LZ	1000 @ 25 MHz	5,2,1	34 @ 50 MHz	280	1.75	230	Yellow

1. When ordering, please specify **tolerance** code:

ML413RAA102GLZ

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

- 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 CCF1297 test fixture.
- DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
- Current production parts are marked with one dot. Prior production parts were marked with three dots. Part marking does not indicate polarity.
- Electrical specifications at 25°C.

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



CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2016

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

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

Document ML101-2 Revised 05/10/16

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.