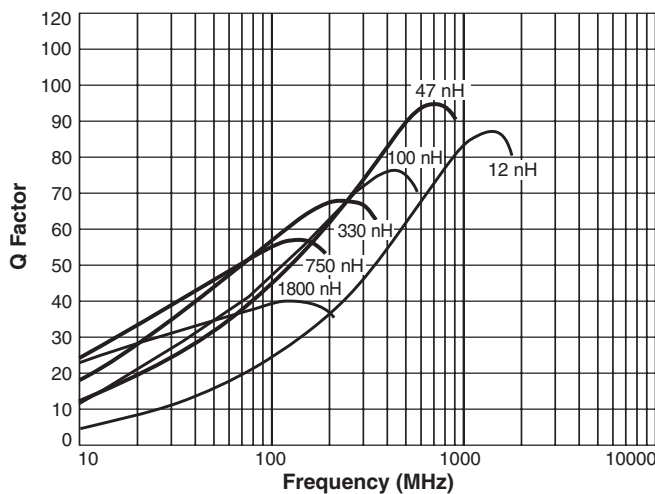


High-Reliability Chip Inductors ML413RAA

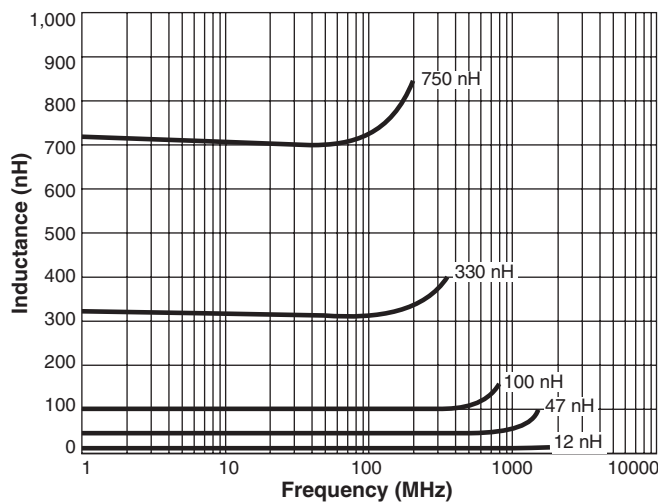
- High SRF and excellent Q values
- Tight tolerances, many values at 1%
- 39 inductance values from 10 nH to 802 μ H

This robust version of Coilcraft's standard 1008CS series features high temperature materials that allow operation in ambient temperatures up to 155°C.

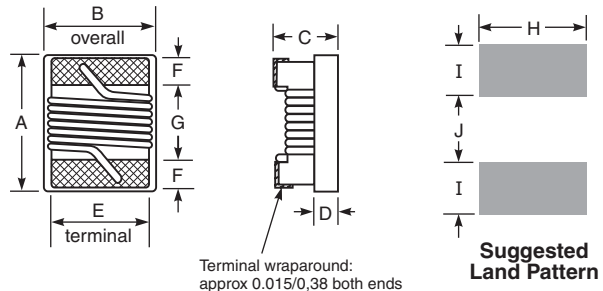
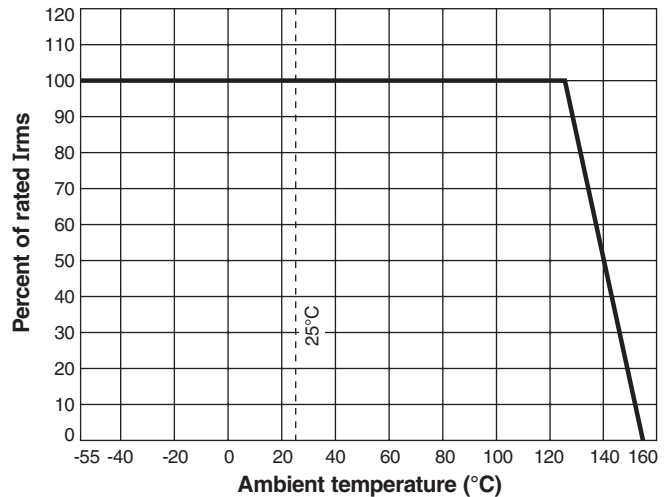
Typical Q vs Frequency



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 |

Core material Ceramic

Terminations Silver-palladium-platinum-glass frit

Ambient temperature -55°C to +125°C with I max current, +125°C to +155°C with derated current

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

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) |
|--------------------------|---------------------------------|----------------------|--------------------|-------------------------------|--------------------------------|--------------------------|
| ML413RAA100_LZ | 10 @ 50 MHz | 5,2 | 44 @ 500 MHz | 3060 | 0.08 | 1000 |
| ML413RAA120_LZ | 12 @ 50 MHz | 5,2 | 45 @ 500 MHz | 2680 | 0.09 | 1000 |
| ML413RAA150_LZ | 15 @ 50 MHz | 5,2 | 50 @ 500 MHz | 2220 | 0.10 | 1000 |
| ML413RAA180_LZ | 18 @ 50 MHz | 5,2 | 50 @ 350 MHz | 2200 | 0.11 | 1000 |
| ML413RAA220_LZ | 22 @ 50 MHz | 5,2,1 | 55 @ 350 MHz | 2100 | 0.12 | 1000 |
| ML413RAA270_LZ | 27 @ 50 MHz | 5,2 | 55 @ 350 MHz | 1380 | 0.13 | 1000 |
| ML413RAA330_LZ | 33 @ 50 MHz | 5,2 | 60 @ 350 MHz | 1600 | 0.14 | 1000 |
| ML413RAA390_LZ | 39 @ 50 MHz | 5,2 | 60 @ 350 MHz | 1420 | 0.15 | 1000 |
| ML413RAA470_LZ | 47 @ 50 MHz | 5,2,1 | 65 @ 350 MHz | 1420 | 0.16 | 1000 |
| ML413RAA560_LZ | 56 @ 50 MHz | 5,2,1 | 60 @ 350 MHz | 1140 | 0.18 | 1000 |
| ML413RAA680_LZ | 68 @ 50 MHz | 5,2,1 | 46 @ 100 MHz | 1140 | 0.20 | 1000 |
| ML413RAA820_LZ | 82 @ 50 MHz | 5,2,1 | 48 @ 100 MHz | 940 | 0.22 | 1000 |
| ML413RAA101_LZ | 100 @ 25 MHz | 5,2,1 | 37 @ 100 MHz | 900 | 0.56 | 650 |
| ML413RAA121_LZ | 120 @ 25 MHz | 5,2,1 | 40 @ 100 MHz | 840 | 0.63 | 650 |
| ML413RAA151_LZ | 150 @ 25 MHz | 5,2,1 | 40 @ 100 MHz | 740 | 0.70 | 580 |
| ML413RAA181_LZ | 180 @ 25 MHz | 5,2,1 | 38 @ 100 MHz | 680 | 0.77 | 620 |
| ML413RAA221_LZ | 220 @ 25 MHz | 5,2,1 | 40 @ 100 MHz | 580 | 0.84 | 500 |
| ML413RAA271_LZ | 270 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 540 | 0.91 | 500 |
| ML413RAA331_LZ | 330 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 500 | 1.05 | 450 |
| ML413RAA391_LZ | 390 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 480 | 1.12 | 350 |
| ML413RAA471_LZ | 470 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 400 | 1.19 | 350 |
| ML413RAA561_LZ | 560 @ 25 MHz | 5,2,1 | 40 @ 100 MHz | 360 | 1.33 | 325 |
| ML413RAA621_LZ | 620 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 360 | 1.40 | 300 |
| ML413RAA681_LZ | 680 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 345 | 1.47 | 400 |
| ML413RAA751_LZ | 750 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 335 | 1.54 | 360 |
| ML413RAA821_LZ | 820 @ 25 MHz | 5,2,1 | 45 @ 100 MHz | 310 | 1.61 | 400 |
| ML413RAA911_LZ | 910 @ 25 MHz | 5,2,1 | 35 @ 50 MHz | 280 | 1.68 | 380 |
| ML413RAA102_LZ | 1000 @ 25 MHz | 5,2,1 | 34 @ 50 MHz | 280 | 1.75 | 370 |
| ML413RAA122_LZ | 1200 @ 7.9 MHz | 5,2 | 32 @ 50 MHz | 220 | 2.0 | 310 |
| ML413RAA152_LZ | 1500 @ 7.9 MHz | 5,2 | 28 @ 50 MHz | 180 | 2.3 | 330 |
| ML413RAA182_LZ | 1800 @ 7.9 MHz | 5,2 | 28 @ 50 MHz | 160 | 2.6 | 300 |
| ML413RAA222_LZ | 2200 @ 7.9 MHz | 5,2 | 19 @ 7.9 MHz | 150 | 2.8 | 280 |
| ML413RAA272_LZ | 2700 @ 7.9 MHz | 5,2 | 20 @ 7.9 MHz | 110 | 3.2 | 290 |
| ML413RAA332_LZ | 3300 @ 7.9 MHz | 5,2 | 20 @ 7.9 MHz | 110 | 3.4 | 290 |
| ML413RAA392_LZ | 3900 @ 7.9 MHz | 5,2 | 20 @ 7.9 MHz | 85 | 3.6 | 260 |
| ML413RAA472_LZ | 4700 @ 7.9 MHz | 5,2 | 13 @ 2.5 MHz | 75 | 4.0 | 170 |
| ML413RAA562JLZ | 5600 @ 7.9 MHz | 5 | 14 @ 2.5 MHz | 20 | 4.0 | 170 |
| ML413RAA682JLZ | 6800 @ 7.9 MHz | 5 | 14 @ 2.5 MHz | 40 | 4.9 | 170 |
| ML413RAA822JLZ | 8200 @ 2.5 MHz | 5 | 14 @ 2.5 MHz | 25 | 6.5 | 170 |

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

ML413RAA102GLZ

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

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

N = Screening per Coilcraft CP-SA-10003

C = Custom screening (please specify when ordering)

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 Agilent/HP 16197A test fixture or equivalents.

4. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.

5. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.

6. Electrical specifications at 25°C.

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



CRITICAL PRODUCTS & SERVICES

Specifications subject to change without notice.

Please check our website for latest information.

Document ML101-2 Revised 06/15/10

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