

# High-Reliability Chip Inductors MS336RAA

The MS336RAA inductors provide exceptional Q values, even at high frequencies. They have a ceramic body and wire wound construction to provide the highest SRFs available in 0805 size.

This robust version of Coilcraft's standard 0805CS series 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.

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent<br>tolerance | Q min <sup>3</sup> | SRF min <sup>4</sup><br>(MHz) | DCR max <sup>5</sup><br>(Ohms) | Imax<br>(mA) | Color<br>code |
|--------------------------|---------------------------------|----------------------|--------------------|-------------------------------|--------------------------------|--------------|---------------|
| MS336RAA020JSZ           | 2.8@ 250 MHz                    | 5                    | 57@ 1000 MHz       | 5000                          | 0.06                           | 800          | Gray          |
| MS336RAA3N0JSZ           | 3.0@ 250 MHz                    | 5                    | 61@ 1000 MHz       | 5000                          | 0.06                           | 800          | White         |
| MS336RAA030JSZ           | 3.3@ 250 MHz                    | 5                    | 48@ 1000 MHz       | 5000                          | 0.08                           | 600          | Black         |
| MS336RAA050JSZ           | 5.6@ 250 MHz                    | 5                    | 75@ 1000 MHz       | 4760                          | 0.08                           | 600          | Orange        |
| MS336RAA060JSZ           | 6.8@ 250 MHz                    | 5                    | 54@ 1000 MHz       | 4440                          | 0.11                           | 600          | Brown         |
| MS336RAA070JSZ           | 7.5@ 250 MHz                    | 5                    | 56@ 1000 MHz       | 3840                          | 0.14                           | 600          | Green         |
| MS336RAA080_SZ           | 8.2@ 250 MHz                    | 5,2                  | 63@ 1000 MHz       | 3560                          | 0.12                           | 600          | Red           |
| MS336RAA100_SZ           | 10@ 250 MHz                     | 5,2,1                | 57@ 500 MHz        | 3460                          | 0.10                           | 600          | Blue          |
| MS336RAA120_SZ           | 12@ 250 MHz                     | 5,2,1                | 46@ 500 MHz        | 3180                          | 0.15                           | 600          | Orange        |
| MS336RAA150_SZ           | 15@ 250 MHz                     | 5,2,1                | 41@ 500 MHz        | 2560                          | 0.17                           | 600          | Yellow        |
| MS336RAA180_SZ           | 18@ 250 MHz                     | 5,2,1                | 48@ 500 MHz        | 2480                          | 0.20                           | 600          | Green         |
| MS336RAA220_SZ           | 22@ 250 MHz                     | 5,2,1                | 59@ 500 MHz        | 2080                          | 0.22                           | 500          | Blue          |
| MS336RAA240_SZ           | 24@ 250 MHz                     | 5,2,1                | 59@ 500 MHz        | 1920                          | 0.22                           | 500          | Gray          |
| MS336RAA270_SZ           | 27@ 250 MHz                     | 5,2,1                | 56@ 500 MHz        | 2060                          | 0.25                           | 500          | Violet        |
| MS336RAA330_SZ           | 33@ 250 MHz                     | 5,2,1                | 64@ 500 MHz        | 1720                          | 0.27                           | 500          | Gray          |
| MS336RAA360_SZ           | 36@ 250 MHz                     | 5,2,1                | 57@ 500 MHz        | 1520                          | 0.27                           | 500          | Orange        |
| MS336RAA390_SZ           | 39@ 250 MHz                     | 5,2,1                | 44@ 250 MHz        | 1600                          | 0.29                           | 500          | White         |
| MS336RAA430_SZ           | 43@ 200 MHz                     | 5,2,1                | 45@ 250 MHz        | 1440                          | 0.34                           | 500          | Yellow        |
| MS336RAA470_SZ           | 47@ 200 MHz                     | 5,2,1                | 44@ 250 MHz        | 1360                          | 0.31                           | 470          | Black         |
| MS336RAA560_SZ           | 56@ 200 MHz                     | 5,2,1                | 49@ 250 MHz        | 1280                          | 0.34                           | 460          | Brown         |
| MS336RAA680_SZ           | 68@ 200 MHz                     | 5,2,1                | 52@ 250 MHz        | 1200                          | 0.38                           | 440          | Red           |
| MS336RAA820_SZ           | 82@ 150 MHz                     | 5,2,1                | 51@ 250 MHz        | 1060                          | 0.42                           | 400          | Orange        |
| MS336RAA910_SZ           | 91@ 150 MHz                     | 5,2,1                | 49@ 250 MHz        | 1060                          | 0.48                           | 390          | Black         |
| MS336RAA101_SZ           | 100@ 150 MHz                    | 5,2,1                | 54@ 250 MHz        | 1000                          | 0.46                           | 390          | Yellow        |
| MS336RAA111_SZ           | 110@ 150 MHz                    | 5,2,1                | 38@ 250 MHz        | 880                           | 0.48                           | 390          | Brown         |
| MS336RAA121_SZ           | 120@ 150 MHz                    | 5,2,1                | 52@ 250 MHz        | 880                           | 0.51                           | 380          | Green         |
| MS336RAA151_SZ           | 150@ 100 MHz                    | 5,2,1                | 33@ 100 MHz        | 730                           | 0.56                           | 340          | Blue          |
| MS336RAA181_SZ           | 180@ 100 MHz                    | 5,2,1                | 37@ 100 MHz        | 730                           | 0.64                           | 340          | Violet        |
| MS336RAA221_SZ           | 220@ 100 MHz                    | 5,2,1                | 36@ 100 MHz        | 650                           | 0.70                           | 330          | Gray          |
| MS336RAA241_SZ           | 240@ 100 MHz                    | 5,2,1                | 36@ 100 MHz        | 610                           | 1.00                           | 270          | Red           |
| MS336RAA271_SZ           | 270@ 100 MHz                    | 5,2,1                | 36@ 100 MHz        | 580                           | 1.00                           | 260          | White         |
| MS336RAA331_SZ           | 330@ 100 MHz                    | 5,2,1                | 36@ 100 MHz        | 520                           | 1.40                           | 230          | Black         |
| MS336RAA391_SZ           | 390@ 100 MHz                    | 5,2,1                | 34@ 100 MHz        | 480                           | 1.50                           | 210          | Brown         |

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

**MS336RAA821GSZ**

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

**Testing:** Z = COTS

H = Screening per Coilcraft CP-SA-10001

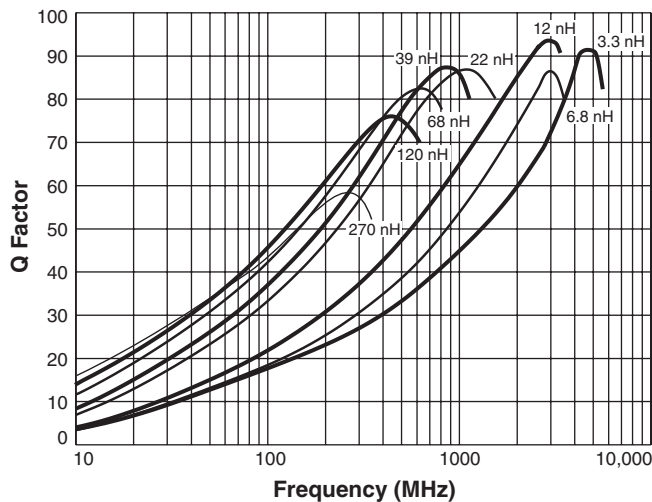
N = Screening per Coilcraft CP-SA-10003

- 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 on an Agilent 8753ES or equivalent with a Coilcraft CCF1297 test fixture.
- DCR measured on a Keithley micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
- Electrical specifications at 25°C.

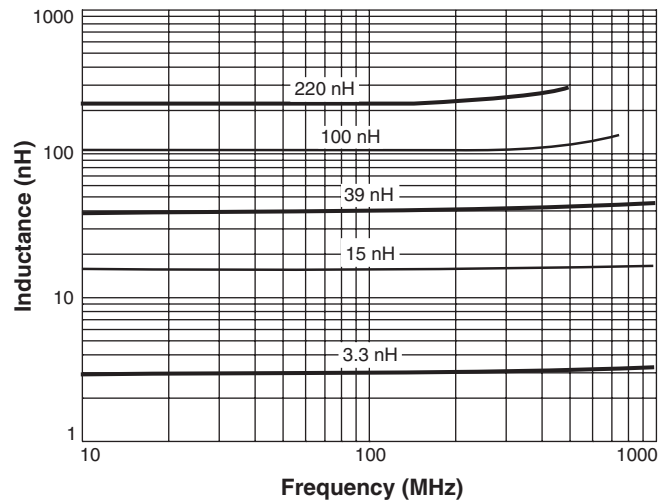
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

# MS336RAA Series (0805)

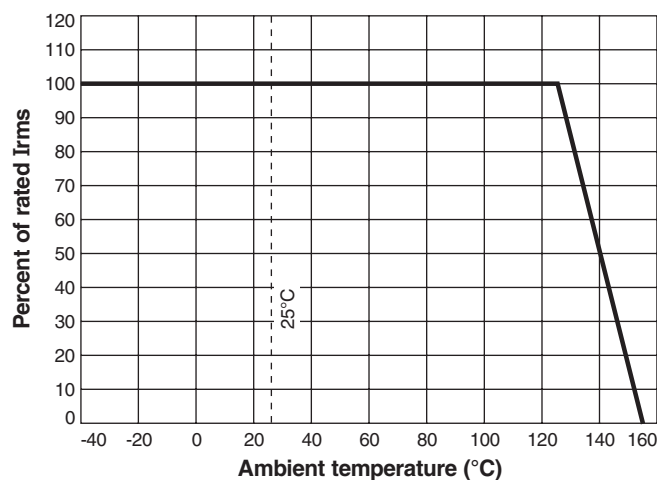
## Typical Q vs Frequency



## Typical L vs Frequency



## Current Derating



**Core material** Ceramic

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

**Ambient temperature** -55°C to +125°C with  $I_{max}$  current, +125°C to +155°C with derated current

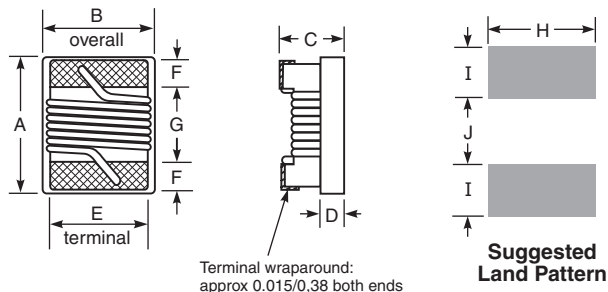
**Storage temperature** Component: -55°C to +155°C.  
Packaging: -55°C to +80°C

**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, 0.23 mm thick, 4 mm pocket spacing, 1.65 mm pocket depth



| A max | B max | C max | D ref | E     | F     | G     | H     | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.090 | 0.068 | 0.060 | 0.020 | 0.050 | 0.020 | 0.040 | 0.070 | 0.040 | 0.030 |
| 2,29  | 1,73  | 1,52  | 0,51  | 1,27  | 0,51  | 1,02  | 1,78  | 1,02  | 0,76  |

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.



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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.