

# Chip Inductors for Critical Applications ST319RAD

- Combines the exceptionally high Q of an air core inductor with the rugged construction of a ceramic body component.
- Provides intermediate inductance values not available in Coilcraft's 0603, 0402 or 0906 product families
- Inductance values: 1.15 nH – 10.4 nH

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent tolerance <sup>3</sup> | Q min <sup>4</sup> | 900 MHz |       | 1.7 GHz |       | SRF min <sup>5</sup><br>(GHz) | DCR max <sup>6</sup><br>(Ohms) | I <sub>max</sub><br>(A) |
|--------------------------|---------------------------------|--------------------------------|--------------------|---------|-------|---------|-------|-------------------------------|--------------------------------|-------------------------|
|                          |                                 |                                |                    | L typ   | Q typ | L typ   | Q typ |                               |                                |                         |
| ST319RAD1N1JLZ           | 1.15                            | 5                              | 25                 | 1.2     | 40    | 1.2     | 136   | >5.0                          | 0.021                          | 3.0                     |
| ST319RAD2N6JLZ           | 2.6                             | 5                              | 45                 | 2.6     | 78    | 2.6     | 163   | >5.0                          | 0.026                          | 2.0                     |
| ST319RAD4N5JLZ           | 4.5                             | 5                              | 50                 | 4.5     | 103   | 4.7     | 155   | >5.0                          | 0.032                          | 1.8                     |
| ST319RAD5N0JLZ           | 5.0                             | 5                              | 60                 | 4.9     | 106   | 5.2     | 178   | >5.0                          | 0.032                          | 1.6                     |
| ST319RAD6N8JLZ           | 6.8                             | 5                              | 60                 | 6.9     | 101   | 7.4     | 172   | 4.7                           | 0.035                          | 1.8                     |
| ST319RAD7N6JLZ           | 7.6                             | 5                              | 60                 | 7.4     | 109   | 7.9     | 137   | 4.4                           | 0.035                          | 1.5                     |
| ST319RAD10NJLZ           | 10.4                            | 5                              | 60                 | 10.6    | 103   | 11.5    | 160   | 4.1                           | 0.037                          | 1.5                     |

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

**ST319RAD10NJLZ**

**Termination:** L = RoHS compliant silver-palladium-platinum glass frit.

**Special order:**

S = Tin-lead (63/37) over silver-palladium-platinum-glass frit.

T = Tin-silver-copper (95.5/4/0.5) over silver-palladium-platinum-glass frit.

R = Tin over nickel 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

2. Inductance measured at 500 MHz using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
3. Q measured at 500 MHz using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
4. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
5. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 test fixture.
6. 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** -55°C to +125°C with I<sub>max</sub> 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)

**Packaging** 2000 per 7" reel; Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.27 mm pocket depth

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
MEASUREMENTS  
SEE WEB SITE **TEST FIXTURES**



CRITICAL PRODUCTS & SERVICES

Specifications subject to change without notice.  
Please check our website for latest information.

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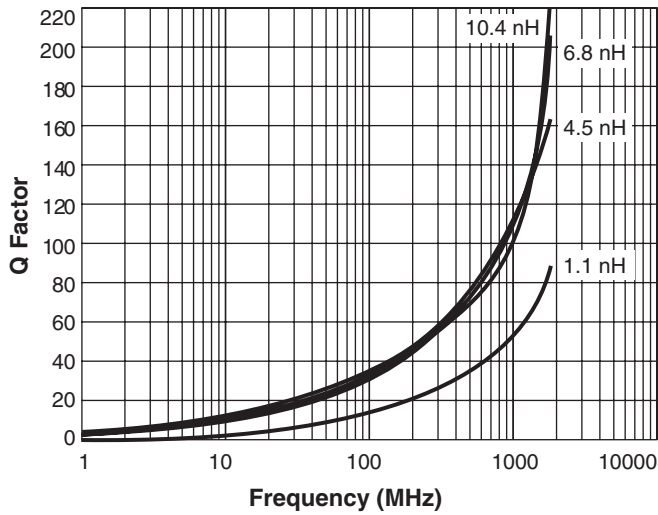
1102 Silver Lake Road  
Cary IL 60013

Phone 800-981-0363  
Fax 847-639-1508

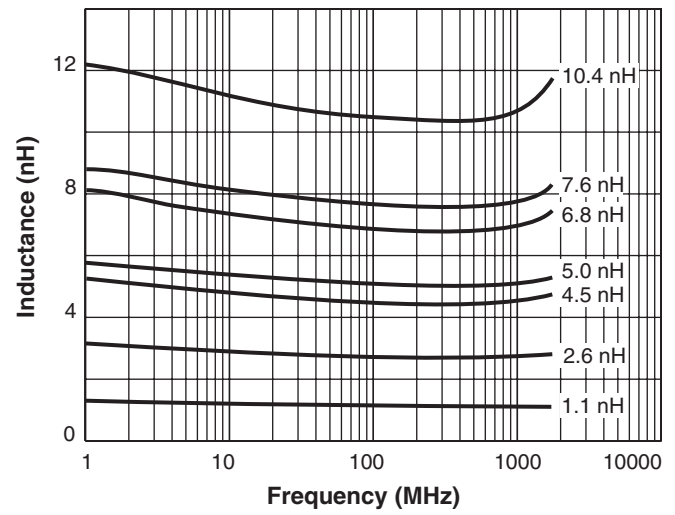
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# ST319RAD Series (0604)

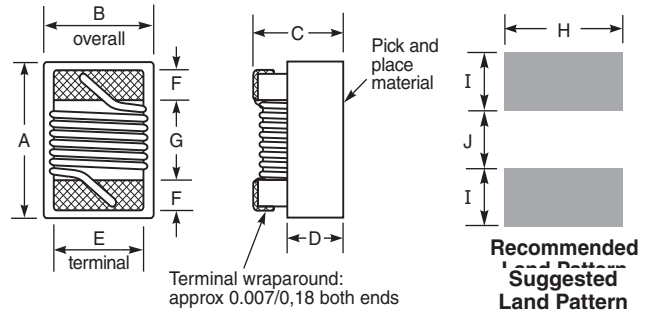
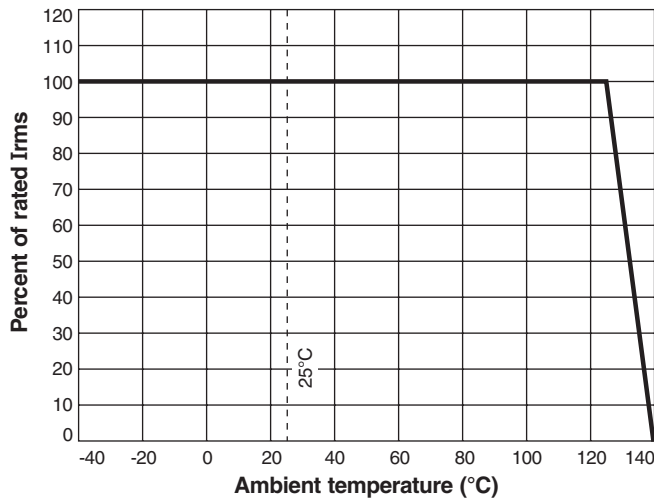
## Typical Q vs Frequency



## Typical L vs Frequency



## Irms Derating



| A     | B     | C     | D     | E     | F     | G     | H     | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max   | max   | max   | ref   |       |       |       |       |       |       |
| 0,073 | 0,054 | 0,047 | 0,025 | 0,040 | 0,013 | 0,034 | 0,053 | 0,025 | 0,025 |
| 1,85  | 1,37  | 1,19  | 0,64  | 1,02  | 0,33  | 0,86  | 1,35  | 0,63  | 0,63  |

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**.