



# Chip Inductors – 0603CT(1608)

- Very low profile – only 60% of the height of our other 0603 inductor series
- Excellent Q, low DCR and very high SRF

**Designer's Kit C423** contains 10 each of all stocked 5% values and **Designer's Kit C423-2** contains 10 each of all 2% values.

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent tolerance <sup>3</sup> | 900 MHz |                    | 1.7 GHz |                    | SRF typ <sup>5</sup><br>(GHz) | DCR max <sup>6</sup><br>(Ohms) | Irms <sup>7</sup><br>(mA) |
|--------------------------|---------------------------------|--------------------------------|---------|--------------------|---------|--------------------|-------------------------------|--------------------------------|---------------------------|
|                          |                                 |                                | L typ   | Q typ <sup>4</sup> | L typ   | Q typ <sup>4</sup> |                               |                                |                           |
| 0603CT-1N0XJL_           | 1.0                             | <b>5</b>                       | 0.98    | 39                 | 0.99    | 58                 | 16.0                          | 0.045                          | 1600                      |
| 0603CT-1N2XJL_           | 1.2                             | <b>5</b>                       | 1.18    | 35                 | 1.19    | 50                 | 16.0                          | 0.105                          | 1100                      |
| 0603CT-2N0XJL_           | 2.0                             | <b>5</b>                       | 1.98    | 46                 | 1.98    | 70                 | 12.0                          | 0.034                          | 1900                      |
| 0603CT-2N2XJL_           | 2.2                             | <b>5</b>                       | 2.10    | 50                 | 2.13    | 74                 | 10.7                          | 0.046                          | 1600                      |
| 0603CT-2N3XJL_           | 2.3                             | <b>5</b>                       | 2.27    | 55                 | 2.28    | 81                 | 11.0                          | 0.046                          | 1600                      |
| 0603CT-2N5XJL_           | 2.5                             | <b>5</b>                       | 2.48    | 52                 | 2.50    | 77                 | 11.0                          | 0.060                          | 1300                      |
| 0603CT-3N0X_L_           | 3.0                             | <b>5,2</b>                     | 2.96    | 57                 | 2.97    | 82                 | 10.7                          | 0.039                          | 1600                      |
| 0603CT-3N3X_L_           | 3.3                             | <b>5,2</b>                     | 3.27    | 60                 | 3.33    | 83                 | 7.00                          | 0.039                          | 1600                      |
| 0603CT-3N6X_L_           | 3.6                             | <b>5,2</b>                     | 3.58    | 69                 | 3.63    | 95                 | 7.00                          | 0.044                          | 1600                      |
| 0603CT-3N9X_L_           | 3.9                             | <b>5,2</b>                     | 3.87    | 68                 | 3.95    | 90                 | 6.30                          | 0.050                          | 1400                      |
| 0603CT-4N3X_L_           | 4.3                             | <b>5,2</b>                     | 4.26    | 58                 | 4.34    | 84                 | 6.30                          | 0.076                          | 1300                      |
| 0603CT-4N7X_L_           | 4.7                             | <b>5,2</b>                     | 4.66    | 50                 | 4.75    | 70                 | 5.60                          | 0.120                          | 960                       |
| 0603CT-5N1X_L_           | 5.1                             | <b>5,2</b>                     | 5.12    | 68                 | 5.18    | 93                 | 5.50                          | 0.050                          | 1400                      |
| 0603CT-5N6X_L_           | 5.6                             | <b>5,2</b>                     | 5.60    | 67                 | 5.73    | 90                 | 5.05                          | 0.058                          | 1300                      |
| 0603CT-6N8X_L_           | 6.8                             | <b>5,2</b>                     | 6.78    | 60                 | 7.00    | 81                 | 4.50                          | 0.080                          | 1200                      |
| 0603CT-7N2X_L_           | 7.2                             | <b>5,2</b>                     | 7.19    | 65                 | 7.44    | 88                 | 4.50                          | 0.047                          | 1500                      |
| 0603CT-8N2X_L_           | 8.2                             | <b>5,2</b>                     | 8.18    | 60                 | 8.46    | 78                 | 4.25                          | 0.075                          | 1300                      |
| 0603CT-9N5X_L_           | 9.5                             | <b>5,2</b>                     | 9.52    | 63                 | 9.92    | 80                 | 3.95                          | 0.092                          | 1100                      |
| 0603CT-10NX_L_           | 10                              | <b>5,2</b>                     | 10.0    | 67                 | 10.4    | 85                 | 3.95                          | 0.075                          | 1300                      |
| 0603CT-11NX_L_           | 11                              | <b>5,2</b>                     | 11.0    | 66                 | 11.5    | 86                 | 4.00                          | 0.110                          | 1000                      |
| 0603CT-12NX_L_           | 12                              | <b>5,2</b>                     | 12.0    | 68                 | 12.7    | 85                 | 3.50                          | 0.130                          | 920                       |
| 0603CT-15NX_L_           | 15                              | <b>5,2</b>                     | 15.2    | 65                 | 16.1    | 80                 | 3.30                          | 0.145                          | 800                       |
| 0603CT-16NX_L_           | 16                              | <b>5,2</b>                     | 16.3    | 63                 | 17.5    | 76                 | 3.10                          | 0.175                          | 760                       |
| 0603CT-18NX_L_           | 18                              | <b>5,2</b>                     | 18.1    | 66                 | 19.2    | 80                 | 2.95                          | 0.200                          | 720                       |
| 0603CT-20NX_L_           | 20                              | <b>5,2</b>                     | 20.2    | 67                 | 21.6    | 80                 | 2.90                          | 0.175                          | 760                       |
| 0603CT-22NX_L_           | 22                              | <b>5,2</b>                     | 22.4    | 60                 | 24.3    | 70                 | 2.75                          | 0.220                          | 700                       |
| 0603CT-24NX_L_           | 24                              | <b>5,2</b>                     | 24.4    | 61                 | 26.5    | 72                 | 2.70                          | 0.240                          | 680                       |
| 0603CT-27NX_L_           | 27                              | <b>5,2</b>                     | 27.4    | 62                 | 29.8    | 75                 | 2.55                          | 0.270                          | 670                       |
| 0603CT-30NX_L_           | 30                              | <b>5,2</b>                     | 30.5    | 62                 | 33.9    | 73                 | 2.45                          | 0.330                          | 600                       |
| 0603CT-33NX_L_           | 33                              | <b>5,2</b>                     | 34.0    | 55                 | 39.1    | 61                 | 2.20                          | 0.330                          | 600                       |
| 0603CT-36NX_L_           | 36                              | <b>5,2</b>                     | 37.2    | 61                 | 42.3    | 63                 | 2.30                          | 0.335                          | 600                       |
| 0603CT-39NX_L_           | 39                              | <b>5,2</b>                     | 40.3    | 60                 | 45.3    | 65                 | 2.25                          | 0.400                          | 570                       |
| 0603CT-43NX_L_           | 43                              | <b>5,2</b>                     | 44.5    | 57                 | 51.3    | 60                 | 2.10                          | 0.440                          | 530                       |
| 0603CT-47NX_L_           | 47                              | <b>5,2</b>                     | 48.2    | 55                 | 57.8    | 57                 | 1.90                          | 0.540                          | 470                       |
| 0603CT-51NX_L_           | 51                              | <b>5,2</b>                     | 53.0    | 55                 | 63.2    | 55                 | 1.85                          | 0.570                          | 440                       |
| 0603CT-56NX_L_           | 56                              | <b>5,2</b>                     | 59.4    | 54                 | 75.4    | 48                 | 1.75                          | 0.700                          | 420                       |

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

**0603CT-56NXGLW**

**Tolerance:** G = 2% J = 5% (Table shows stock tolerances in bold.)  
**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
 E = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit terminations.  
 Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).  
**Packaging:** W = 7" machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel).  
 U = Less than full reel. In tape, but not machine ready.  
 To have a leader and trailer added (\$25 charge), use code letter W instead.

2. Inductance measured at 250 MHz, 0.1 Vrms, 0 Adc using Coilcraft SMD-A fixture in Agilent/HP 4287A impedance analyzer.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured using Agilent/HP4291A with Agilent/HP 16193 test fixture.

5. SRF measured using Agilent/HP 8722ES network analyzer and Coilcraft SMD-D test fixture.

6. DCR measured on Cambridge Technology micro-ohmmeter and Coilcraft CCF858 test fixture.

7. Current that causes a 15°C temperature rise from 25°C ambient.

8. Electrical specifications at 25°C.

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



www.coilcraft.com

**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

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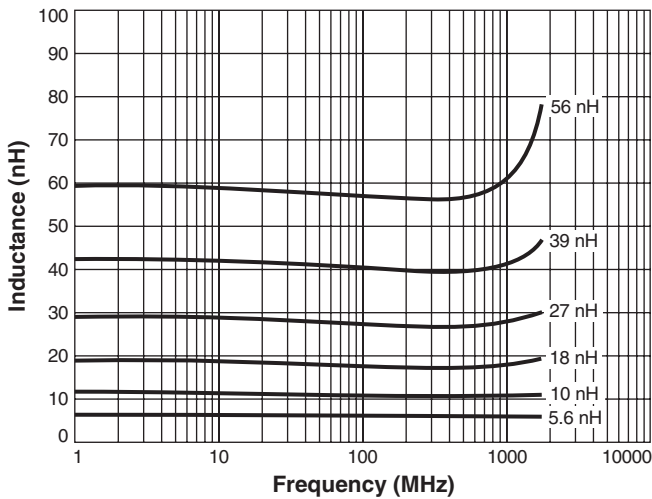
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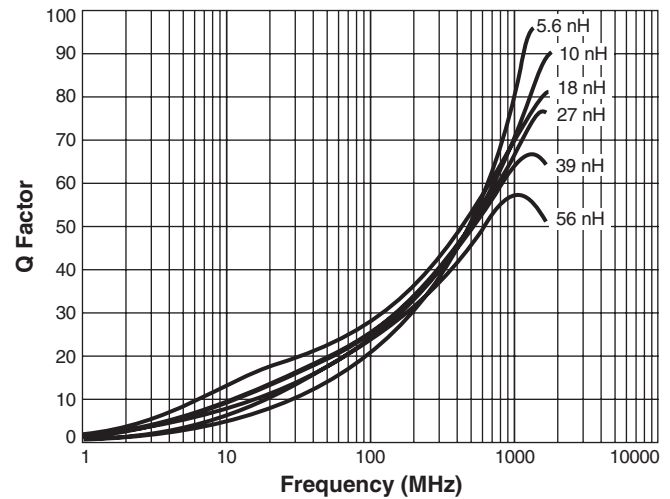


# 0603CT Series (1608)

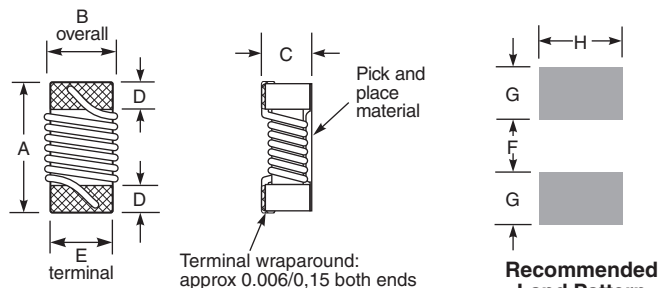
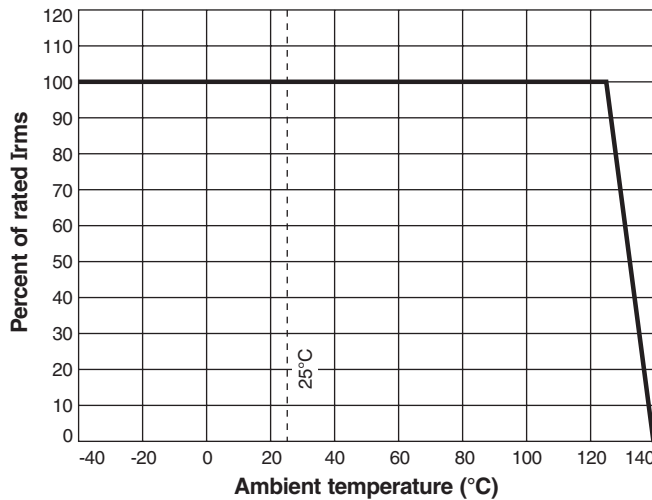
## Typical L vs Frequency



## Typical Q vs Frequency



## Typical Irms Derating



| Amax  | Bmax  | Cmax  | D     | E     | F     | G     | H            |
|-------|-------|-------|-------|-------|-------|-------|--------------|
| 0.064 | 0.033 | 0.024 | 0.013 | 0.030 | 0.025 | 0.025 | 0.040 inches |
| 1,63  | 0,84  | 0,61  | 0,33  | 0,76  | 0,64  | 0,64  | 1,02 mm      |

**Note:** Height dimension (C) is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0,152 mm.

**Designer's Kit C423** contains 10 each of all 5% values;  
**Designer's Kit C423-2** contains 10 each of all 2% values

**Core material** Ceramic

**Environmental** RoHS compliant, halogen free optional

**Terminations** RoHS compliant silver-palladium-platinum-glass frit.  
 Other terminations available at additional cost.

**Weight** 160 – 190 mg

**Ambient temperature** -40°C to +125°C with Irms current, +125°C to +140°C with derated current

**Storage temperature** Component: -40°C to +125°C.  
 Tape and reel packaging: -40°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 +125 ppm/°C

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

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

One per billion hours / one billion hours, calculated per Telcordia SR-332

**Packaging** 2000/7"reel; Paper tape: 8 mm wide, 0.68 mm thick, 4 mm pocket spacing

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).