



THE DATASHEET OF
0603AF-103XJRW



Ferrite Chip Inductors - 0603AF



- Higher inductance values than ceramic 0603 inductors
- Ferrite construction for high current handling
- Heavier gauge wire for low DCR
- Inductance values from 15 nH to 10 μ H

| Part number ¹ | Inductance ² $\pm 5\%$ (nH) | Q typ ³ | Impedance typ (Ohms) | | SRF typ ⁴ (MHz) | DCR max ⁵ (Ohms) | Irms ⁶ (A) | Color code ⁷ |
|--------------------------|---|--------------------|----------------------|---------|-------------------------------|--------------------------------|--------------------------|-------------------------|
| | | | 100 MHz | 500 MHz | | | | |
| 0603AF-15NXJR_ | 15 @ 7.9 MHz | 13 @ 7.9 MHz | 10 | 42 | 3500 | 0.023 | 2.1 | Yellow |
| 0603AF-33NXJR_ | 33 @ 7.9 MHz | 13 @ 7.9 MHz | 19 | 90 | 2300 | 0.028 | 1.9 | Red |
| 0603AF-39NXJR_ | 39 @ 7.9 MHz | 13 @ 7.9 MHz | 23 | 113 | 2200 | 0.115 | 1.0 | Green |
| 0603AF-47NXJR_ | 47 @ 7.9 MHz | 13 @ 7.9 MHz | 42 | 210 | 2250 | 0.052 | 1.7 | White |
| 0603AF-50NXJR_ | 50 @ 7.9 MHz | 15 @ 7.9 MHz | 31 | 149 | 1830 | 0.052 | 1.7 | Violet |
| 0603AF-68NXJR_ | 68 @ 7.9 MHz | 15 @ 7.9 MHz | 39 | 193 | 1500 | 0.150 | 0.88 | Gray |
| 0603AF-72NXJR_ | 72 @ 7.9 MHz | 15 @ 7.9 MHz | 60 | 385 | 1800 | 0.065 | 1.5 | Blue |
| 0603AF-85NXJR_ | 85 @ 7.9 MHz | 15 @ 7.9 MHz | 51 | 256 | 1600 | 0.065 | 1.5 | Brown |
| 0603AF-111XJR_ | 110 @ 7.9 MHz | 15 @ 7.9 MHz | 70 | 350 | 1230 | 0.060 | 1.6 | Red |
| 0603AF-121XJR_ | 120 @ 7.9 MHz | 15 @ 7.9 MHz | 76 | 410 | 1150 | 0.089 | 1.4 | Black |
| 0603AF-151XJR_ | 150 @ 7.9 MHz | 15 @ 7.9 MHz | 89 | 468 | 1050 | 0.093 | 1.5 | Yellow |
| 0603AF-201XJR_ | 200 @ 7.9 MHz | 15 @ 7.9 MHz | 120 | 685 | 880 | 0.115 | 1.4 | Green |
| 0603AF-241XJR_ | 240 @ 7.9 MHz | 15 @ 7.9 MHz | 140 | 810 | 900 | 0.120 | 0.85 | Violet |
| 0603AF-271XJR_ | 270 @ 7.9 MHz | 15 @ 7.9 MHz | 173 | 1023 | 750 | 0.220 | 0.68 | Brown |
| 0603AF-361XJR_ | 360 @ 7.9 MHz | 15 @ 7.9 MHz | 210 | 1310 | 700 | 0.210 | 0.65 | Blue |
| 0603AF-391XJR_ | 390 @ 7.9 MHz | 15 @ 7.9 MHz | 240 | 1565 | 700 | 0.300 | 0.64 | Black |
| 0603AF-421XJR_ | 420 @ 7.9 MHz | 11 @ 7.9 MHz | 250 | 1925 | 685 | 0.330 | 0.61 | Red |
| 0603AF-471XJR_ | 470 @ 7.9 MHz | 15 @ 7.9 MHz | 306 | 2253 | 575 | 0.370 | 0.61 | Orange |
| 0603AF-561XJR_ | 560 @ 7.9 MHz | 16 @ 7.9 MHz | 371 | 3180 | 515 | 0.490 | 0.53 | Blue |
| 0603AF-601XJR_ | 600 @ 7.9 MHz | 16 @ 7.9 MHz | 372 | 2778 | 540 | 0.552 | 0.51 | Blue |
| 0603AF-681XJR_ | 680 @ 7.9 MHz | 16 @ 7.9 MHz | 420 | 3620 | 530 | 0.460 | 0.49 | Orange |
| 0603AF-821XJR_ | 820 @ 7.9 MHz | 16 @ 7.9 MHz | 507 | 3300 | 325 | 0.580 | 0.42 | Green |
| 0603AF-102XJR_ | 1000 @ 7.9 MHz | 17 @ 7.9 MHz | 663 | 9823 | 400 | 0.840 | 0.40 | Black |
| 0603AF-152XJR_ | 1500 @ 7.9 MHz | 17 @ 7.9 MHz | 944 | 17,830 | 330 | 1.30 | 0.28 | Orange |
| 0603AF-222XJR_ | 2200 @ 7.9 MHz | 16 @ 7.9 MHz | 5220 | 129 | 85 | 1.10 | 0.32 | Red |
| 0603AF-472XJR_ | 4700 @ 7.9 MHz | 16 @ 7.9 MHz | 2100 | 220 | 60 | 1.50 | 0.26 | Yellow |
| 0603AF-103XJR_ | 10000 @ 2.5 MHz | 12 @ 2.5 MHz | 1400 | 150 | 40 | 4.50 | 0.18 | Gray |

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

0603AF-102XJRW

Termination: R = RoHS matte Sn over Ni over Ag-Pt-glass frit.

Special order:

Q = RoHS Sn/Ag/Cu (95.5/4.0/0.5)

P = Not RoHS Sn/Pb (63/37)

Packaging: W = 7" machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

Y = 13" machine-ready reel. EIA-481 punched paper tape. Factory order only, not stocked (10000 parts per full reel).

U = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from U to W.

2. Inductance measured at 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured on Agilent/HP 4395A with Agilent/HP 16193 test fixture.

4. SRF measured using Agilent/HP 8753D network analyzer with Coilcraft SMD-D test fixture.

5. DCR measured on Cambridge Technology Micro-ohmmeter.

6. Current that causes a 15°C temperature rise from 25°C ambient. Because of their open construction, these parts will not saturate. This information is for reference only and does not represent absolute maximum ratings.

7. Each part is marked with a single dot. The color dots are not unique identifiers and correspond to multiple inductance values.

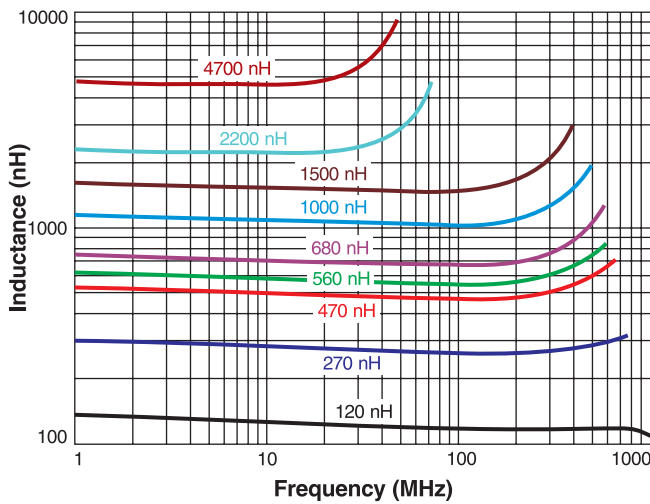
8. Electrical specifications at 25°C.

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

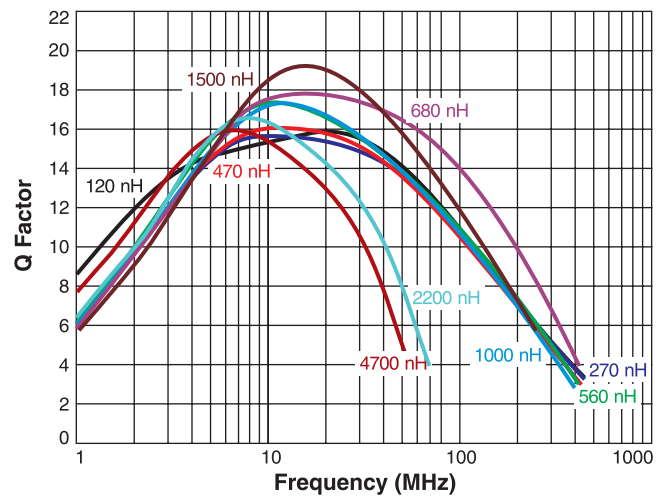


Ferrite Chip Inductors – 0603AF Series

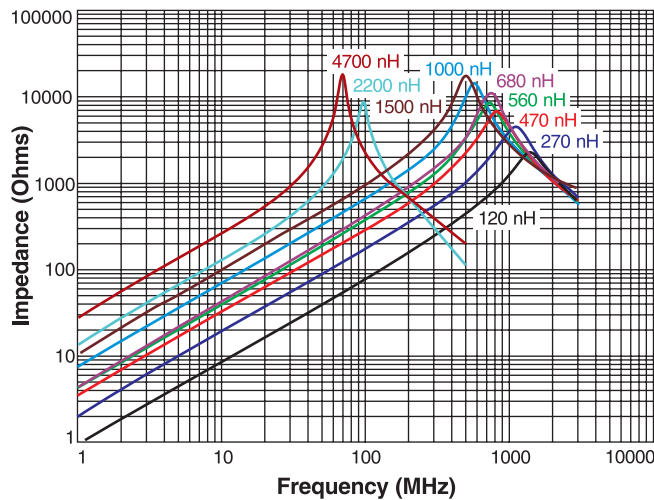
Typical L vs Frequency



Typical Q vs Frequency



Typical Impedance vs Frequency



Designer's Kit C439 contains 10 each of all values

Core material Ferrite

Environmental RoHS compliant, halogen free

Terminations RoHS matte Sn over Ni over Ag-Pt-glass frit. Other terminations available at additional cost

Weight 4.3 – 5.7 mg

Ambient temperature -40°C to +85°C with Irms current

Maximum part temperature +100°C (ambient + temp rise)

Storage temperature Component: -40°C to +100°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

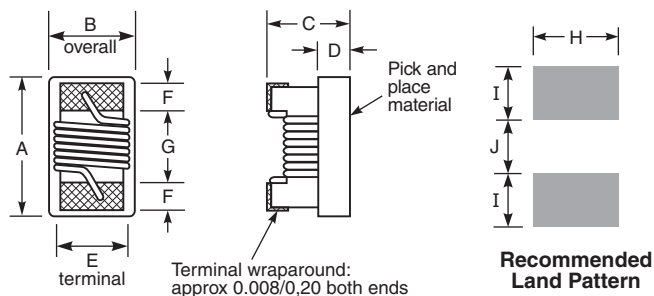
Temperature Coefficient of Inductance (TCL) +50 to +300 ppm/°C

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

Packaging 2000 per 7" reel; 10000 per 13" reel;

Paper tape: 8 mm wide, 1.0 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](#).



| A | B | C | D | E | F | G | H | I | J |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max | max | max | ref | | | | | | |
| 0,071 | 0,044 | 0,036 | 0,015 | 0,030 | 0,013 | 0,034 | 0,040 | 0,025 | 0,025 |
| 1,80 | 1,12 | 0,91 | 0,38 | 0,76 | 0,33 | 0,86 | 1,02 | 0,64 | 0,64 |

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



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