



# Ferrite Chip Inductors - 0603AF

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

Part number <sup>1</sup>	Inductance <sup>2</sup> $\pm 5\%$ (nH)	Q typ <sup>3</sup>	Impedance typ (Ohms)		SRF typ <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	Irms <sup>6</sup> (A)	Color code
			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-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-241XJR_	240 @ 7.9 MHz	15 @ 7.9 MHz	140	810	900	0.12	0.85	Violet
0603AF-271XJR_	270 @ 7.9 MHz	15 @ 7.9 MHz	173	1023	750	0.22	0.68	Brown
0603AF-471XJR_	470 @ 7.9 MHz	15 @ 7.9 MHz	306	2253	575	0.37	0.61	Orange
0603AF-561XJR_	560 @ 7.9 MHz	16 @ 7.9 MHz	371	3180	515	0.49	0.53	Blue
0603AF-681XJR_	680 @ 7.9 MHz	16 @ 7.9 MHz	420	3620	530	0.46	0.49	Orange
0603AF-821XJR_	820 @ 7.9 MHz	16 @ 7.9 MHz	507	3300	325	0.58	0.42	Green
0603AF-102XJR_	1000 @ 7.9 MHz	17 @ 7.9 MHz	663	9823	400	0.84	0.40	Black
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 compliant matte tin over nickel over silver-platinum-glass frit.  
Special order: **Q** = RoHS tin-silver-copper (95.5/4/0.5) or **P** = 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.

- Inductance measured at 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
  - Q measured on Agilent/HP 4395A with Agilent/HP 16193 test fixture.
  - SRF measured using Agilent/HP 8753D network analyzer with Coilcraft SMD-D test fixture.
  - DCR measured on Cambridge Technology Micro-ohmmeter.
  - Current that causes a 15°C temperature rise from 25°C ambient. Because of their open construction, these parts will not saturate.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Designer's Kit C439** contains 10 each of all values

**Environmental** RoHS compliant without exemption, halogen free

**Core material** Ferrite

**Terminations** RoHS compliant matte tin over nickel over silver-platinum-glass frit. Other terminations available at additional cost.

**Weight** 4.3 – 5.7 mg

**Ambient temperature** -40°C to +85°C with Irms current, +85°C to +100°C with derated current

**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)

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

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

**Packaging** 2000 per 7" reel; Paper tape: 8 mm wide, 1.0 mm thick, 4 mm pocket spacing

**PCB washing** Only pure water or alcohol recommended



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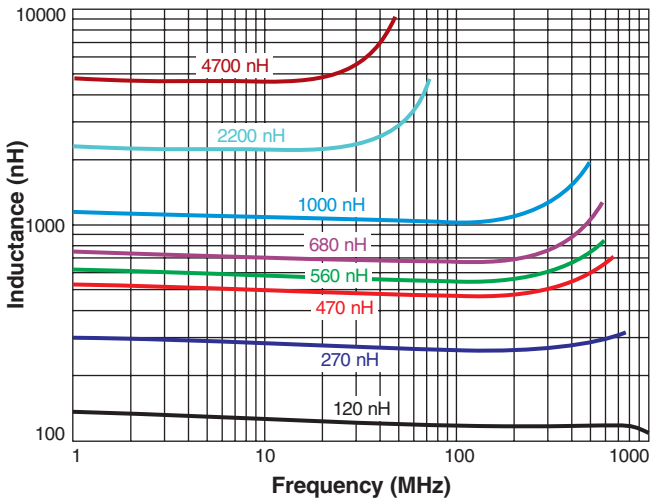
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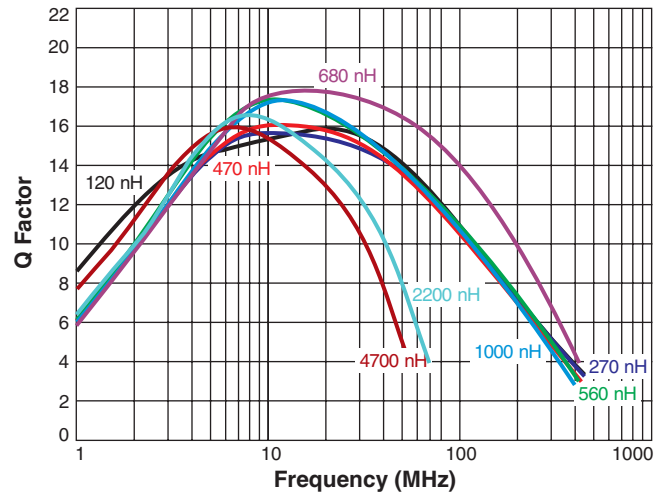


# Ferrite Chip Inductors – 0603AF Series

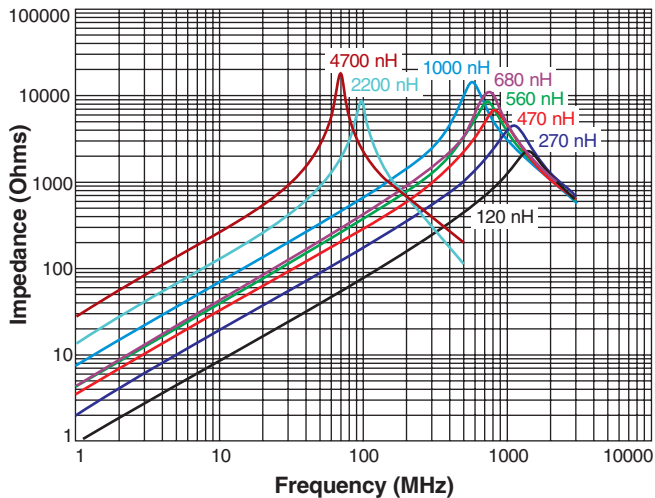
## Typical L vs Frequency



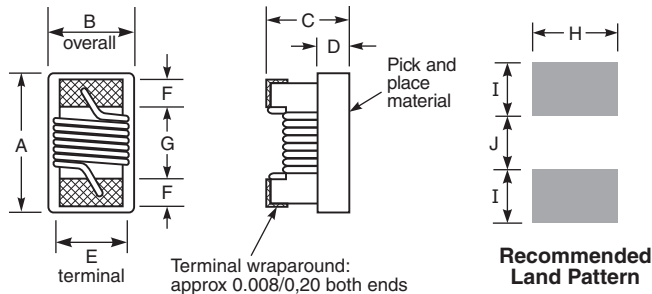
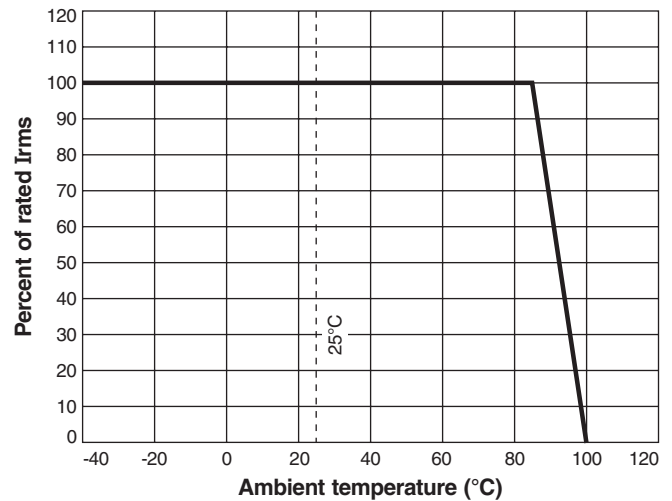
## Typical Q vs Frequency



## Typical Impedance vs Frequency



## Irms Derating



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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