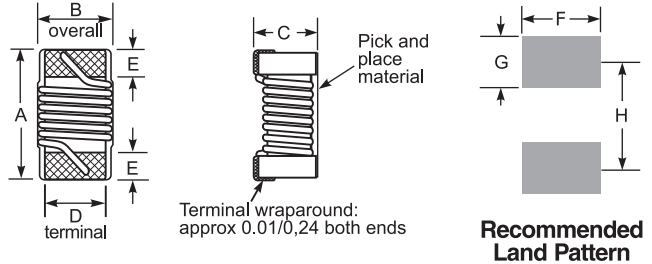


NEW!

Chip Inductors - 0603DC Series (1608)

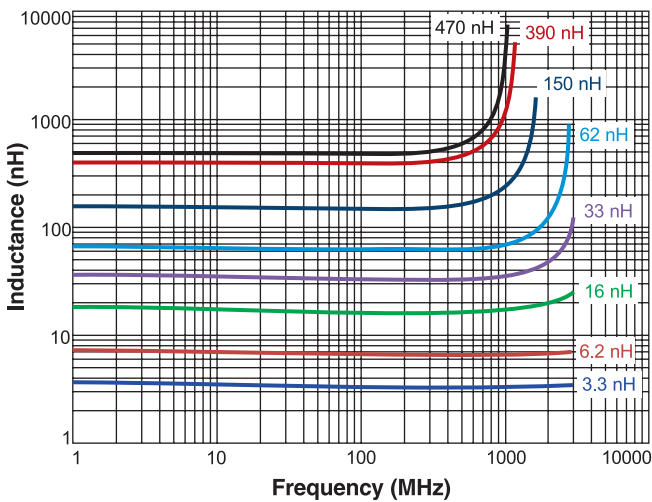


- 0603 ceramic wirewound chip inductor
- 45 inductance values available from 2.7 nH to 470 nH
- High SRF – as high as 11.4 GHz
- AEC-Q200 Grade 1 (–40°C to +125°C)

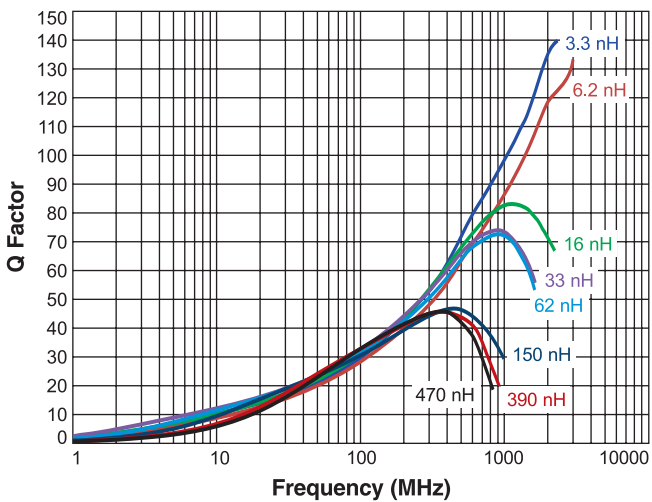


| A max | B max | C max | D | E | F | G | H | |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.067 | 0.039 | 0.035 | 0.028 | 0.013 | 0.033 | 0.016 | 0.051 | inches |
| 1,70 | 0,99 | 0,89 | 0,71 | 0,33 | 0,85 | 0,40 | 1,29 | mm |

Typical L vs Frequency



Typical Q vs Frequency



Core material Ceramic

Environmental RoHS compliant without exemption, halogen free

Terminations RoHS compliant matte tin over nickel over silver-glass frit.

Weight 3 – 4 mg

Ambient temperature –40°C to +125°C with Irms current

Maximum part temperature +140°C (ambient + temp rise).

Storage temperature Component: –40°C to +140°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)

Packaging 2000 per 7" reel; 5000/10000 per 13" reel;

Paper tape: 8 mm wide, 0.95 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](#).

0603DC Series (1608)

Designer's Kit C487 contains 43 each of all 5% values
 Designer's Kit C487-2 contains 43 each of all 2% values

| Part number ¹ | Inductance ² (nH) | Percent tolerance ³ | 900 | 1.7 | 2.4 | SRF | DCR | I _{rms} (mA) | | |
|--------------------------|---------------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|-----------------------|-------------------|--------------------|
| | | | MHz Q typ ⁴ | GHz Q typ ⁴ | GHz Q typ ⁴ | typ ⁵ (GHz) | max ⁶ (Ohms) | 25°C ⁷ | 85°C ⁸ | 125°C ⁹ |
| 0603DC-2N7X_R_ | 2.7 @ 250 MHz | 5, 3 | 80 | 117 | 148 | 11.40 | 0.029 | 3340 | 2100 | 1700 |
| 0603DC-3N3X_R_ | 3.3 @ 250 MHz | 5, 3, 2 | 94 | 125 | 140 | 9.30 | 0.042 | 2770 | 1700 | 1400 |
| 0603DC-3N9X_R_ | 3.9 @ 250 MHz | 5, 3, 2 | 105 | 144 | 177 | 11.25 | 0.040 | 2800 | 2100 | 1390 |
| 0603DC-4N3X_R_ | 4.3 @ 250 MHz | 5, 3, 2 | 100 | 138 | 167 | 10.60 | 0.040 | 2800 | 2100 | 1390 |
| 0603DC-5N1X_R_ | 5.1 @ 250 MHz | 5, 3, 2 | 88 | 126 | 152 | 7.50 | 0.046 | 2650 | 2100 | 1350 |
| 0603DC-5N6X_R_ | 5.6 @ 250 MHz | 5, 3, 2 | 90 | 129 | 187 | 6.30 | 0.046 | 2650 | 2100 | 1350 |
| 0603DC-6N2X_R_ | 6.2 @ 250 MHz | 5, 3, 2 | 84 | 110 | 125 | 6.60 | 0.048 | 2580 | 2100 | 1330 |
| 0603DC-6N8X_R_ | 6.8 @ 250 MHz | 5, 3, 2 | 100 | 131 | 143 | 5.10 | 0.048 | 2580 | 2100 | 1330 |
| 0603DC-7N5X_R_ | 7.5 @ 250 MHz | 5, 3, 2 | 88 | 126 | 160 | 5.20 | 0.053 | 2450 | 2100 | 1250 |
| 0603DC-8N2X_R_ | 8.2 @ 250 MHz | 5, 3, 2 | 93 | 130 | 162 | 6.25 | 0.053 | 2450 | 2100 | 1250 |
| 0603DC-9N1X_R_ | 9.1 @ 250 MHz | 5, 3, 2 | 97 | 117 | 112 | 4.50 | 0.060 | 2260 | 2040 | 1160 |
| 0603DC-10NX_R_ | 10 @ 250 MHz | 5, 3, 2 | 92 | 107 | 98 | 4.10 | 0.060 | 2260 | 2040 | 1160 |
| 0603DC-11NX_R_ | 11 @ 250 MHz | 5, 3, 2 | 94 | 132 | 157 | 4.25 | 0.065 | 2170 | 1960 | 1110 |
| 0603DC-12NX_R_ | 12 @ 250 MHz | 5, 3, 2 | 94 | 122 | 145 | 3.90 | 0.065 | 2170 | 1960 | 1110 |
| 0603DC-15NX_R_ | 15 @ 250 MHz | 5, 3, 2 | 87 | 92 | 91 | 3.50 | 0.074 | 2040 | 1840 | 1050 |
| 0603DC-16NX_R_ | 16 @ 250 MHz | 5, 3, 2 | 82 | 77 | 64 | 3.40 | 0.074 | 2040 | 1840 | 1050 |
| 0603DC-18NX_R_ | 18 @ 250 MHz | 5, 3, 2 | 80 | 72 | 50 | 2.95 | 0.078 | 2000 | 1800 | 1000 |
| 0603DC-20NX_R_ | 20 @ 250 MHz | 5, 3, 2 | 80 | 70 | 55 | 3.70 | 0.084 | 1920 | 1730 | 980 |
| 0603DC-22NX_R_ | 22 @ 250 MHz | 5, 3, 2 | 88 | 84 | 56 | 2.70 | 0.095 | 1750 | 1590 | 900 |
| 0603DC-27NX_R_ | 27 @ 250 MHz | 5, 3, 2 | 82 | 67 | 40 | 2.50 | 0.116 | 1630 | 1450 | 830 |
| 0603DC-30NX_R_ | 30 @ 250 MHz | 5, 3, 2 | 77 | 69 | 41 | 3.00 | 0.103 | 1730 | 1560 | 900 |
| 0603DC-33NX_R_ | 33 @ 250 MHz | 5, 3, 2 | 74 | 53 | — | 2.25 | 0.124 | 1550 | 1380 | 760 |
| 0603DC-36NX_R_ | 36 @ 250 MHz | 5, 3, 2 | 79 | 67 | — | 2.35 | 0.134 | 1490 | 1320 | 740 |
| 0603DC-39NX_R_ | 39 @ 250 MHz | 5, 3, 2 | 73 | 56 | — | 2.15 | 0.163 | 1350 | 1200 | 680 |
| 0603DC-43NX_R_ | 43 @ 250 MHz | 5, 3, 2 | 82 | 74 | — | 2.10 | 0.176 | 1300 | 1150 | 620 |
| 0603DC-47NX_R_ | 47 @ 200 MHz | 5, 3, 2 | 73 | 50 | — | 2.00 | 0.200 | 1200 | 1080 | 590 |
| 0603DC-51NX_R_ | 51 @ 200 MHz | 5, 3, 2 | 77 | 57 | — | 1.95 | 0.216 | 1170 | 1020 | 570 |
| 0603DC-56NX_R_ | 56 @ 200 MHz | 5, 3, 2 | 72 | 48 | — | 1.85 | 0.260 | 1030 | 920 | 490 |
| 0603DC-62NX_R_ | 62 @ 200 MHz | 5, 3, 2 | 73 | 50 | — | 2.00 | 0.312 | 970 | 850 | 460 |
| 0603DC-68NX_R_ | 68 @ 200 MHz | 5, 3, 2 | 63 | — | — | 1.65 | 0.372 | 890 | 790 | 420 |
| 0603DC-75NX_R_ | 75 @ 150 MHz | 5, 3, 2 | 62 | — | — | 1.60 | 0.396 | 860 | 760 | 400 |
| 0603DC-82NX_R_ | 82 @ 150 MHz | 5, 3, 2 | 66 | — | — | 1.55 | 0.424 | 830 | 740 | 390 |
| 0603DC-91NX_R_ | 91 @ 150 MHz | 5, 3, 2 | 64 | — | — | 1.45 | 0.576 | 710 | 630 | 330 |
| 0603DC-R10X_R_ | 100 @ 150 MHz | 5, 3, 2 | 62 | — | — | 1.35 | 0.707 | 625 | 555 | 290 |
| 0603DC-R11X_R_ | 110 @ 150 MHz | 5, 3, 2 | 55 | — | — | 1.25 | 0.725 | 620 | 550 | 270 |
| 0603DC-R12X_R_ | 120 @ 150 MHz | 5, 3, 2 | 52 | — | — | 1.20 | 0.765 | 600 | 520 | 260 |
| 0603DC-R13X_R_ | 130 @ 150 MHz | 5, 3, 2 | 50 | — | — | 1.15 | 0.804 | 590 | 510 | 250 |
| 0603DC-R15X_R_ | 150 @ 150 MHz | 5, 3, 2 | 47 | — | — | 1.10 | 1.05 | 520 | 450 | 220 |
| 0603DC-R18X_R_ | 180 @ 100 MHz | 5, 3, 2 | 44 | — | — | 1.00 | 1.39 | 440 | 390 | 190 |
| 0603DC-R22X_R_ | 220 @ 100 MHz | 5, 3, 2 | — | — | — | 0.90 | 1.69 | 390 | 340 | 160 |
| 0603DC-R27X_R_ | 270 @ 100 MHz | 5, 3, 2 | — | — | — | 0.85 | 2.06 | 360 | 300 | 140 |
| 0603DC-R30X_R_ | 300 @ 100 MHz | 5, 3, 2 | — | — | — | 0.75 | 2.66 | 320 | 270 | 120 |
| 0603DC-R33X_R_ | 330 @ 100 MHz | 5, 3, 2 | — | — | — | 0.70 | 2.93 | 300 | 250 | 110 |
| 0603DC-R39X_R_ | 390 @ 100 MHz | 5, 3, 2 | — | — | — | 0.65 | 3.92 | 260 | 220 | 90 |
| 0603DC-R47X_R_ | 470 @ 100 MHz | 5, 3, 2 | — | — | — | 0.60 | 5.40 | 220 | 170 | 70 |

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

0603DC-R47XJRW

Tolerance: **G** = 2% **H** = 3% **J** = 5%

(Table shows stock values and tolerances in bold.)

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).

Q = 13" machine-ready reel. EIA-481 punched paper tape. Factory order only, not stocked (5000 parts per full reel).

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

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP E4982A impedance analyzer with Coilcraft-provided correlation pieces.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured using an Agilent/HP 4991A with an Agilent/HP 16197 test fixture.

5. SRF measured using an Agilent/HP 5071C/8722ES network analyzer and a Coilcraft SMD-D/CCF 1052 test fixture.

6. DCR measured on a micro-ohmmeter and a Coilcraft CCF1010/A test fixture.

7. Current that cause 40°C rise at 25°C.

8. Maximum current that can be applied at 85°C.

9. Maximum current that can be applied at 125°C.

10. Electrical specifications at 25°C.

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



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