



Chip Inductors - 0201DS Series (0603)

- 0201 size; world's smallest wirewound inductor
- 52 inductance values from 0.5 to 14 nH

Typical Q vs Frequency



Typical L vs Frequency



Irms Derating



| A max | B max | C max | D | E | F | G | H | |
|-------|-------|--------|-------|-------|-------|-------|-------|--------|
| 0.023 | 0.018 | 0.0177 | 0.004 | 0.015 | 0.009 | 0.007 | 0.018 | inches |
| 0,58 | 0,46 | 0,45 | 0,10 | 0,38 | 0,23 | 0,18 | 0,46 | mm |

Designer's Kits C425A and B contain 20 of each value

Core material Ceramic

Environmental RoHS compliant, halogen free

Terminations RoHS compliant matte tin over nickel over silver.

Weight 0.14 – 0.23 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 +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)

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, 0.6 mm thick, 2 mm pocket spacing

PCB washing Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.



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0201DS Chip Inductor Series (0603)

| Part number ¹ | Inductance ² (nH) | Percent tolerance | 900 MHz | | 1.7 GHz | | SRF typ ⁴ (GHz) | DCR max ⁵ (Ohms) | I _{rms} ⁶ (mA) |
|--------------------------|---------------------------------|----------------------|---------|--------------------|---------|--------------------|-------------------------------|--------------------------------|---------------------------------------|
| | | | L typ | Q typ ³ | L typ | Q typ ³ | | | |
| 0201DS-0N5XKE_ | 0.5 | 10 | 0.50 | 29 | 0.49 | 43 | 23.5 | 0.020 | 1250 |
| 0201DS-0N6XKE_ | 0.6 | 10 | 0.58 | 31 | 0.58 | 51 | 24.5 | 0.030 | 1000 |
| 0201DS-1N2XJE_ | 1.2 | 5 | 1.16 | 42 | 1.16 | 60 | 17.9 | 0.042 | 870 |
| 0201DS-1N3XJE_ | 1.3 | 5 | 1.24 | 38 | 1.24 | 57 | 17.6 | 0.048 | 820 |
| 0201DS-1N4XJE_ | 1.4 | 5 | 1.35 | 27 | 1.34 | 37 | 17.0 | 0.080 | 630 |
| 0201DS-1N5XJE_ | 1.5 | 5 | 1.47 | 28 | 1.47 | 40 | 17.0 | 0.090 | 600 |
| 0201DS-2N2XJE_ | 2.2 | 5 | 2.23 | 32 | 2.23 | 32 | 16.7 | 0.070 | 700 |
| 0201DS-2N3XJE_ | 2.3 | 5 | 2.28 | 45 | 2.28 | 64 | 16.5 | 0.070 | 670 |
| 0201DS-2N4XJE_ | 2.4 | 5 | 2.36 | 35 | 2.36 | 53 | 13.0 | 0.082 | 620 |
| 0201DS-2N5XJE_ | 2.5 | 5 | 2.50 | 31 | 2.49 | 44 | 12.5 | 0.165 | 440 |
| 0201DS-3N3XJE_ | 3.3 | 5 | 3.31 | 42 | 3.32 | 62 | 12.8 | 0.080 | 630 |
| 0201DS-3N4XJE_ | 3.4 | 5 | 3.38 | 42 | 3.42 | 62 | 12.7 | 0.080 | 630 |
| 0201DS-3N5XJE_ | 3.5 | 5 | 3.41 | 44 | 3.45 | 64 | 12.4 | 0.080 | 630 |
| 0201DS-3N6XJE_ | 3.6 | 5 | 3.53 | 40 | 3.57 | 61 | 12.5 | 0.105 | 550 |
| 0201DS-3N7XJE_ | 3.7 | 5 | 3.65 | 39 | 3.66 | 58 | 10.6 | 0.105 | 550 |
| 0201DS-3N8XJE_ | 3.8 | 5 | 3.81 | 38 | 3.81 | 60 | 10.2 | 0.180 | 420 |
| 0201DS-3N9XJE_ | 3.9 | 5 | 3.89 | 35 | 3.89 | 50 | 11.2 | 0.240 | 360 |
| 0201DS-4N8XJE_ | 4.8 | 5 | 4.83 | 34 | 4.83 | 50 | 11.0 | 0.096 | 570 |
| 0201DS-4N9XJE_ | 4.9 | 5 | 4.72 | 33 | 4.71 | 52 | 11.7 | 0.130 | 510 |
| 0201DS-5N0XJE_ | 5.0 | 5 | 4.90 | 34 | 4.90 | 54 | 11.5 | 0.130 | 510 |
| 0201DS-5N1XJE_ | 5.1 | 5 | 4.96 | 35 | 4.96 | 54 | 11.1 | 0.130 | 510 |
| 0201DS-5N2XJE_ | 5.2 | 5 | 5.21 | 36 | 5.21 | 55 | 10.0 | 0.170 | 430 |
| 0201DS-5N3XJE_ | 5.3 | 5 | 5.15 | 36 | 5.15 | 57 | 10.6 | 0.130 | 510 |
| 0201DS-5N4XJE_ | 5.4 | 5 | 5.30 | 36 | 5.31 | 56 | 10.2 | 0.130 | 510 |
| 0201DS-5N5XJE_ | 5.5 | 5 | 5.49 | 35 | 5.49 | 50 | 9.5 | 0.285 | 330 |
| 0201DS-6N7XJE_ | 6.7 | 5 | 6.71 | 40 | 6.72 | 59 | 6.8 | 0.150 | 460 |
| 0201DS-6N8XJE_ | 6.8 | 5 | 6.52 | 35 | 6.52 | 52 | 9.5 | 1.150 | 460 |
| 0201DS-6N9XJE_ | 6.9 | 5 | 6.70 | 36 | 6.73 | 54 | 9.3 | 0.150 | 460 |
| 0201DS-7N0XJE_ | 7.0 | 5 | 6.97 | 39 | 6.97 | 60 | 6.7 | 0.210 | 390 |
| 0201DS-7N1XJE_ | 7.1 | 5 | 6.91 | 36 | 6.90 | 54 | 9.5 | 0.250 | 390 |
| 0201DS-7N2XJE_ | 7.2 | 5 | 6.97 | 36 | 6.97 | 55 | 9.4 | 0.250 | 390 |
| 0201DS-7N3XJE_ | 7.3 | 5 | 7.05 | 37 | 7.04 | 56 | 9.3 | 0.250 | 390 |
| 0201DS-7N4XJE_ | 7.4 | 5 | 7.29 | 40 | 7.30 | 61 | 9.1 | 0.250 | 390 |
| 0201DS-7N5XJE_ | 7.5 | 5 | 7.44 | 36 | 7.46 | 50 | 6.8 | 0.340 | 300 |
| 0201DS-7N6XJE_ | 7.6 | 5 | 7.32 | 39 | 7.31 | 59 | 9.3 | 0.300 | 340 |
| 0201DS-7N7XJE_ | 7.7 | 5 | 7.38 | 39 | 7.37 | 60 | 9.2 | 0.300 | 340 |
| 0201DS-7N8XJE_ | 7.8 | 5 | 7.49 | 38 | 7.49 | 58 | 9.2 | 0.300 | 340 |
| 0201DS-7N9XJE_ | 7.9 | 5 | 7.56 | 38 | 7.56 | 58 | 9.1 | 0.300 | 340 |
| 0201DS-8N0XJE_ | 8.0 | 5 | 7.65 | 35 | 7.68 | 53 | 9.2 | 0.300 | 340 |
| 0201DS-8N1XJE_ | 8.1 | 5 | 7.74 | 37 | 7.75 | 59 | 9.1 | 0.300 | 340 |
| 0201DS-8N2XJE_ | 8.2 | 5 | 8.14 | 37 | 8.22 | 53 | 6.4 | 0.270 | 340 |
| 0201DS-8N3XJE_ | 8.3 | 5 | 7.93 | 36 | 7.95 | 57 | 8.9 | 0.300 | 340 |
| 0201DS-8N4XJE_ | 8.4 | 5 | 8.03 | 35 | 8.04 | 55 | 8.9 | 0.350 | 300 |
| 0201DS-8N5XJE_ | 8.5 | 5 | 8.11 | 35 | 8.13 | 55 | 8.9 | 0.350 | 300 |
| 0201DS-8N7XJE_ | 8.7 | 5 | 8.68 | 38 | 8.74 | 59 | 6.3 | 0.350 | 300 |
| 0201DS-9N0XJE_ | 9.0 | 5 | 9.02 | 42 | 9.04 | 63 | 6.4 | 0.350 | 300 |
| 0201DS-9N4XJE_ | 9.4 | 5 | 9.38 | 36 | 9.39 | 51 | 6.4 | 0.400 | 280 |
| 0201DS-9N6XJE_ | 9.6 | 5 | 9.62 | 38 | 9.64 | 53 | 6.2 | 0.400 | 280 |
| 0201DS-11NXJE_ | 11.0 | 5 | 11.11 | 40 | 11.15 | 62 | 5.7 | 0.400 | 280 |
| 0201DS-12NXJE_ | 12.0 | 5 | 12.15 | 39 | 12.20 | 56 | 5.6 | 0.360 | 300 |
| 0201DS-13NXJE_ | 13.0 | 5 | 13.12 | 38 | 13.22 | 52 | 6.7 | 0.440 | 270 |
| 0201DS-14NXJE_ | 14.0 | 5 | 14.13 | 37 | 14.37 | 51 | 5.1 | 0.440 | 270 |

1. When ordering, please specify **packaging** code:

0201DS-14NXJEW

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 using a Coilcraft SMD-F fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured using an Agilent/HP 4291A with an Agilent/HP 16197 test fixture.

4. SRF measured using an Agilent/HP 8722ES network analyzer and a test fixture with a 0.010" air gap.

5. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.

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

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



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