



# Chip Inductors - 0403HQ (1008)

- Very high Q factors and excellent current handling
- Intermediate L values not found in other series

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent<br>tolerance | Q<br>min <sup>3</sup> | 900 MHz |       | 1.7 GHz |       | SRF<br>typ <sup>4</sup><br>(GHz) | DCR<br>max <sup>5</sup><br>(Ohms) | Irms <sup>6</sup><br>(A) |
|--------------------------|---------------------------------|----------------------|-----------------------|---------|-------|---------|-------|----------------------------------|-----------------------------------|--------------------------|
|                          |                                 |                      |                       | L typ   | Q typ | L typ   | Q typ |                                  |                                   |                          |
| 0403HQ-1N9XJL_           | 1.9                             | <b>5</b>             | 40                    | 1.9     | 62    | 1.9     | 94    | 11.84                            | 0.012                             | 2.2                      |
| 0403HQ-2N1XJL_           | 2.1                             | <b>5</b>             | 35                    | 2.1     | 56    | 2.1     | 88    | 12.40                            | 0.019                             | 1.8                      |
| 0403HQ-3N4XJL_           | 3.4                             | <b>5</b>             | 40                    | 3.4     | 66    | 3.5     | 96    | 8.97                             | 0.016                             | 1.9                      |
| 0403HQ-3N7XJL_           | 3.7                             | <b>5</b>             | 40                    | 3.7     | 64    | 3.8     | 95    | 8.65                             | 0.018                             | 1.8                      |
| 0403HQ-5N5XJL_           | 5.5                             | <b>5</b>             | 40                    | 5.5     | 62    | 5.7     | 93    | 8.60                             | 0.022                             | 1.5                      |
| 0403HQ-6N6XJL_           | 6.6                             | <b>5</b>             | 40                    | 6.6     | 60    | 6.9     | 92    | 7.30                             | 0.046                             | 1.1                      |
| 0403HQ-8N2XJL_           | 8.2                             | <b>5</b>             | 40                    | 8.2     | 63    | 8.5     | 92    | 6.73                             | 0.040                             | 1.2                      |
| 0403HQ-9N0XJL_           | 9.0                             | <b>5</b>             | 40                    | 9.1     | 66    | 9.5     | 90    | 6.85                             | 0.055                             | 1.0                      |
| 0403HQ-12NXJL_           | 12                              | <b>5</b>             | 40                    | 12.1    | 60    | 12.7    | 90    | 5.82                             | 0.065                             | 0.80                     |
| 0403HQ-15NXJL_           | 15                              | <b>5</b>             | 35                    | 15.2    | 60    | 16.0    | 90    | 5.82                             | 0.188                             | 0.50                     |
| 0403HQ-18NXJL_           | 18                              | <b>5</b>             | 35                    | 18.2    | 62    | 19.6    | 93    | 5.15                             | 0.185                             | 0.50                     |

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

**0403HQ-18NXJLW**

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
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.

- Inductance measured at 500 MHz using a Coilcraft SMD-F fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
- Q measured at 500 MHz using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
- SRF measured using an Agilent/HP 8722ES network analyzer and a test fixture with a 0.017" air gap.
- DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
- Current that causes a 30°C temperature rise from 25°C ambient. See Qualification Standards section for environmental and test data. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Designer's Kit C371** contains 20 of each value

**Core material** Ceramic

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

**Weight** 1.29 – 1.60 mg

**Ambient temperature** –40°C to +125°C with Irms current, +125°C to +155°C with derated current

**Storage temperature** Component: –40°C to +155°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; 7500 per 13" 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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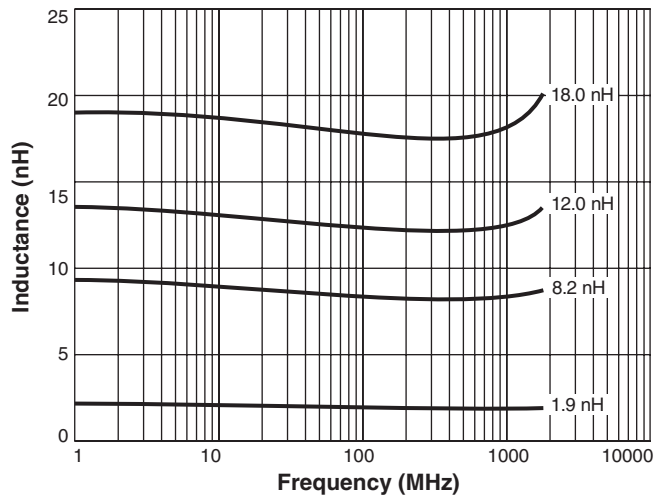
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# 0403HQ Series (1008)

## Typical L vs Frequency



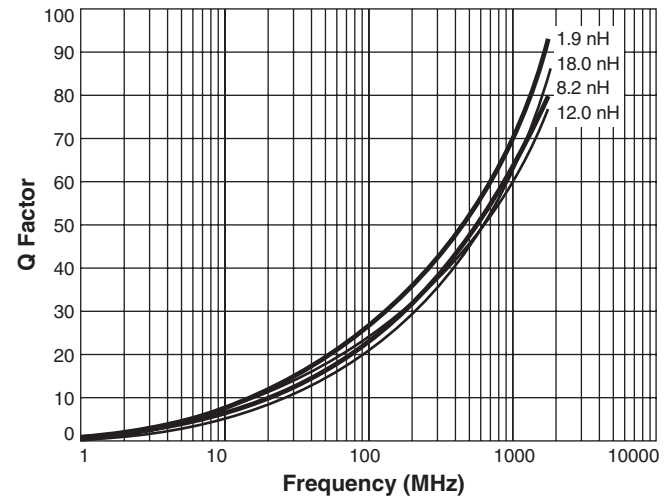
## S-Parameter files

ON OUR WEB SITE

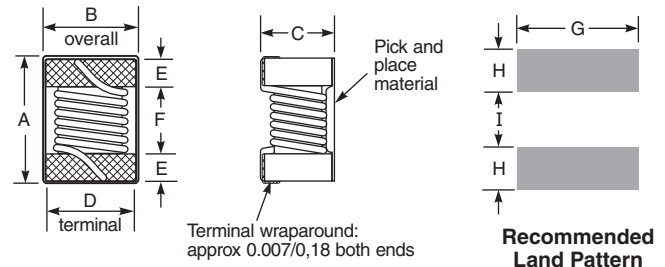
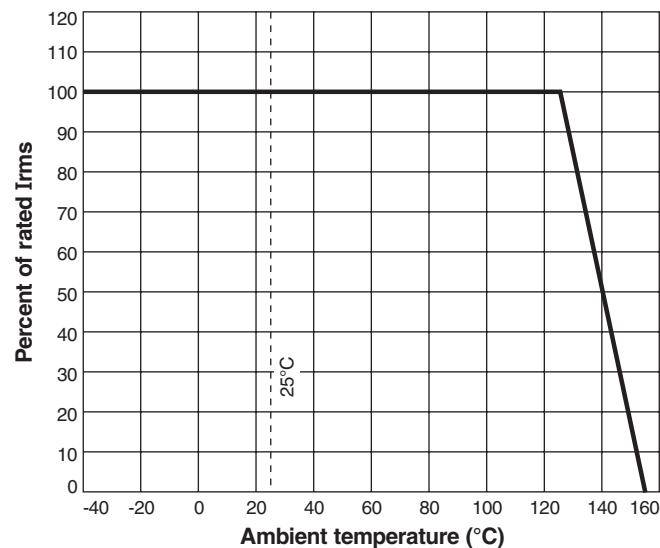
## SPICE models

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## Typical Q vs Frequency



## Irms Derating



| A     | B     | C     | D     | E     | F     | G     | H     | I     |        |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| max   | max   | max   |       |       |       |       |       |       | inches |
| 0.047 | 0.034 | 0.028 | 0.030 | 0.009 | 0.022 | 0.040 | 0.014 | 0.018 |        |
| 1.19  | 0.86  | 0.71  | 0.76  | 0.23  | 0.56  | 1.02  | 0.36  | 0.46  | mm     |

**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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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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