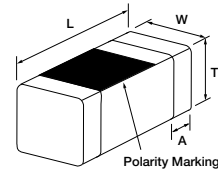


The LL1005-FHL Series is a multilayer ceramic chip inductor with an EIA standard 0402 footprint, lead-free terminations, and expanded electrical specifications with respect to inductance, Q, self-resonant frequency, and operating temperature range.



Unit: mm

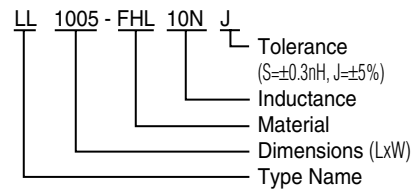


|            | L (mm)   | W (mm)   | T (mm)   | A (mm)   |
|------------|----------|----------|----------|----------|
| 1nH~68nH   | 1.0±0.05 | 0.5±0.05 | 0.5±0.05 | 0.25±0.1 |
| 82nH~100nH | 1.0±0.1  | 0.5±0.1  | 0.5±0.1  | 0.25±0.1 |

## Features

- Inductance range: 1.0-100nH
- Miniature size: 0402 footprint (1.0mm x 0.5mm)
- Inductance specified at 100MHz and 800MHz
- Self-resonant frequency specified at ±15%
- Q: 8 ~ 50 typical (at 1800MHz)
- Temperature coefficient of inductance: +250ppm/°C
- Temperature range: -55°C to +125°C
- S-parameter data available upon request
- Packaged on tape and reel in 10,000 piece quantity
- Reflow solderable
- Lead-free terminations

## Part Numbering



## STANDARD PARTS SELECTION GUIDE

### TYPE LL1005-FHL

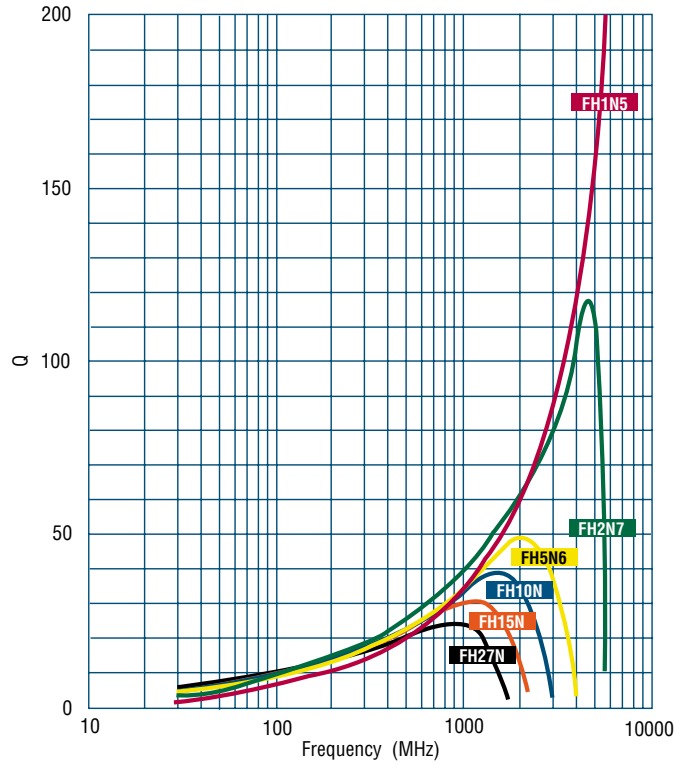
| TOKO<br>Part Number | Inductance & Tolerance |            |                  |            |                | Q<br>min. | Q (Typ.)   |            |            |            |            |             | SRF<br>(MHz) | RDC<br>(Ω)<br>max. | IDC<br>(mA)<br>max. |             |
|---------------------|------------------------|------------|------------------|------------|----------------|-----------|------------|------------|------------|------------|------------|-------------|--------------|--------------------|---------------------|-------------|
|                     | at 100MHz              |            | at 800 (500) MHz |            | Freq.<br>(MHz) |           | 100<br>MHz | 100<br>MHz | 300<br>MHz | 500<br>MHz | 800<br>MHz | 1000<br>MHz |              |                    |                     | 1800<br>MHz |
|                     | Lo<br>(nH)             | L<br>Tol.* | Lo<br>(nH)       | L<br>Tol.* |                |           |            |            |            |            |            |             |              |                    |                     |             |
| LL1005-FHL1N0S      | 1.0                    | S          | 0.93             | ± 0.5nH    | 800            | 7         | 8.7        | 15.5       | 21.0       | 25.5       | 31.5       | 42.5        | 20000 min    | 0.10               | 400                 |             |
| LL1005-FHL1N2S      | 1.2                    | S          | 1.1              | ± 0.5nH    | 800            | 7         | 9.0        | 16.5       | 21.0       | 27.2       | 31.0       | 42.5        | 16000 min    | 0.10               | 400                 |             |
| LL1005-FHL1N5S      | 1.5                    | S          | 1.4              | ± 0.5nH    | 800            | 8         | 9.6        | 17.5       | 22.5       | 28.1       | 31.5       | 44.0        | 15000 ± 15%  | 0.13               | 400                 |             |
| LL1005-FHL1N8S      | 1.8                    | S          | 1.7              | ± 0.5nH    | 800            | 8         | 9.0        | 16.5       | 21.0       | 26.7       | 30.0       | 40.5        | 15000 ± 15%  | 0.14               | 400                 |             |
| LL1005-FHL2N2S      | 2.2                    | S          | 2.0              | ± 0.5nH    | 800            | 8         | 10.0       | 17.5       | 23.0       | 29.6       | 33.0       | 44.5        | 13000 ± 15%  | 0.15               | 400                 |             |
| LL1005-FHL2N7S      | 2.7                    | S          | 2.5              | ± 0.5nH    | 800            | 8         | 9.9        | 18.0       | 24.0       | 30.3       | 35.0       | 49.0        | 9600 ± 15%   | 0.15               | 400                 |             |
| LL1005-FHL3N3S      | 3.3                    | S          | 3.1              | ± 0.5nH    | 800            | 8         | 9.7        | 17.0       | 23.0       | 28.5       | 33.5       | 47.5        | 9100 ± 15%   | 0.16               | 400                 |             |
| LL1005-FHL3N9S      | 3.9                    | S          | 3.7              | ± 0.5nH    | 800            | 8         | 9.9        | 18.5       | 24.5       | 29.2       | 35.5       | 50.0        | 7400 ± 15%   | 0.18               | 300                 |             |
| LL1005-FHL4N7S      | 4.7                    | S          | 4.4              | ± 0.5nH    | 800            | 9         | 10.2       | 18.0       | 23.0       | 30.3       | 33.0       | 42.5        | 7000 ± 15%   | 0.20               | 300                 |             |
| LL1005-FHL5N6S      | 5.6                    | S          | 5.3              | ± 0.5nH    | 800            | 9         | 10.7       | 18.5       | 24.5       | 31.7       | 34.0       | 44.0        | 6100 ± 15%   | 0.22               | 300                 |             |
| LL1005-FHL6N8J      | 6.8                    | J          | 6.5              | ± 10%      | 800            | 9         | 10.8       | 18.5       | 24.0       | 31.3       | 34.5       | 43.0        | 5600 ± 15%   | 0.23               | 300                 |             |
| LL1005-FHL8N2J      | 8.2                    | J          | 7.9              | ± 10%      | 800            | 9         | 11.3       | 20.0       | 26.0       | 33.1       | 37.0       | 46.0        | 4700 ± 15%   | 0.25               | 300                 |             |
| LL1005-FHL10NJ      | 10                     | J          | 9.7              | ± 10%      | 800            | 9         | 11.1       | 19.0       | 25.0       | 32.0       | 35.0       | 43.0        | 4300 ± 15%   | 0.30               | 300                 |             |
| LL1005-FHL12NJ      | 12                     | J          | 12               | ± 10%      | 800            | 9         | 11.8       | 19.5       | 25.0       | 31.8       | 34.0       | 34.0        | 3300 ± 15%   | 0.40               | 300                 |             |
| LL1005-FHL15NJ      | 15                     | J          | 15               | ± 10%      | 800            | 9         | 12.4       | 19.0       | 24.0       | 32.0       | 32.0       | 30.0        | 2800 ± 15%   | 0.50               | 300                 |             |
| LL1005-FHL18NJ      | 18                     | J          | 18               | ± 10%      | 800            | 10        | 12.0       | 18.5       | 23.5       | 31.5       | 30.5       | 27.5        | 2800 ± 15%   | 0.60               | 300                 |             |
| LL1005-FHL22NJ      | 22                     | J          | 23               | ± 10%      | 800            | 10        | 11.9       | 18.5       | 23.0       | 30.3       | 28.5       | 18.5        | 2500 ± 15%   | 0.70               | 300                 |             |
| LL1005-FHL27NJ      | 27                     | J          | 30               | ± 10%      | 800            | 10        | 12.4       | 19.0       | 24.0       | 29.2       | 26.5       | 8.0         | 2100 ± 15%   | 0.85               | 300                 |             |
| LL1005-FHL33NJ      | 33                     | J          | 36               | ± 10%      | 800            | 10        | 12.0       | 16.5       | 21.0       | 28.6       | 25.0       | 13.0        | 2100 ± 15%   | 1.00               | 200                 |             |
| LL1005-FHL39NJ      | 39                     | J          | 44               | ± 10%      | 800            | 10        | 12.0       | 17.0       | 21.5       | 27.6       | 25.0       | 10.5        | 1900 ± 15%   | 1.10               | 200                 |             |
| LL1005-FHL47NJ      | 47                     | J          | 50               | ± 10%      | 500            | 10        | 11.5       | 15.5       | 19.7       | 21.7       | 22.2       | —           | 1500 ± 15%   | 1.30               | 200                 |             |
| LL1005-FHL56NJ      | 56                     | J          | 60               | ± 10%      | 500            | 10        | 11.9       | 19.5       | 23.4       | 22.6       | 17.8       | —           | 1400 ± 15%   | 1.50               | 200                 |             |
| LL1005-FHL68NJ      | 68                     | J          | 77               | ± 10%      | 500            | 10        | 11.7       | 17.9       | 20.3       | 20.8       | —          | —           | 1300 ± 15%   | 1.70               | 180                 |             |
| LL1005-FHL82NJ      | 82                     | J          | 95               | ± 10%      | 500            | 10        | 13.1       | 19.1       | 21.8       | 21.4       | —          | —           | 1150 ± 15%   | 1.90               | 150                 |             |
| LL1005-FHLR10J      | 100                    | J          | 122              | ± 10%      | 500            | 10        | 13.2       | 19.1       | 20.0       | 18.8       | —          | —           | 1030 ± 15%   | 2.20               | 150                 |             |

\* Add tolerance to part number: S=±0.3nH, J = ±5%

Testing Conditions: (1) L,Q: Agilent 4291A/B (Test fixture Agilent 16192A) (2) SRF: Agilent 8719D, 8720D (3) RDC: Agilent 4338A/B

**ELECTRICAL CHARACTERISTICS**

**Q vs. Frequency**



**Inductance vs. Frequency**

