



# Filter Inductors – 1812FS Series



- Magnetically shielded chip inductors
- Provides high performance in transmit and receive filters
- 29 inductance values from 1.0 – 1000  $\mu$ H

**Core material** Ceramic/Ferrite

**Terminations** RoHS compliant silver-palladium-platinum-glass frit.

**Weight** 0.33 – 0.36 g

**Ambient temperature**  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with  $I_{\text{rms}}$  current,  $+85^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  with derated current

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

Tape and reel packaging:  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 85% relative humidity)

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

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging** 600/7" reel; 2200/13" reel. Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 3.9 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

| Part number <sup>1</sup> | L <sup>2</sup><br>( $\mu$ H) | % <sup>3</sup><br>tol | Q <sup>4</sup><br>min | DCR <sup>5</sup><br>max<br>(Ohms) | SRF <sup>6</sup><br>typ<br>(MHz) | Isat <sup>7</sup><br>(mA) | Irms <sup>8</sup><br>(mA) |
|--------------------------|------------------------------|-----------------------|-----------------------|-----------------------------------|----------------------------------|---------------------------|---------------------------|
| 1812FS-102_L_            | 1.0                          | <b>10.5</b>           | 30                    | 0.070                             | 320                              | 3100                      | 2950                      |
| 1812FS-122_L_            | 1.2                          | <b>10.5</b>           | 35                    | 0.110                             | 280                              | 2800                      | 2600                      |
| 1812FS-152_L_            | 1.5                          | <b>10.5</b>           | 20                    | 0.105                             | 200                              | 2100                      | 2850                      |
| 1812FS-222_L_            | 2.2                          | <b>10.5</b>           | 30                    | 0.120                             | 175                              | 1800                      | 2700                      |
| 1812FS-242_L_            | 2.4                          | <b>10.5</b>           | 25                    | 0.175                             | 160                              | 1900                      | 2050                      |
| 1812FS-272_L_            | 2.7                          | <b>10.5</b>           | 30                    | 0.200                             | 165                              | 1400                      | 2100                      |
| 1812FS-332_L_            | 3.3                          | <b>10.5</b>           | 33                    | 0.185                             | 160                              | 1400                      | 1900                      |
| 1812FS-392_L_            | 3.9                          | <b>10.5</b>           | 32                    | 0.195                             | 145                              | 1300                      | 1700                      |
| 1812FS-472_L_            | 4.7                          | <b>10.5</b>           | 28                    | 0.15                              | 125                              | 1000                      | 1800                      |
| 1812FS-562_L_            | 5.6                          | <b>10.5</b>           | 35                    | 0.40                              | 110                              | 1000                      | 1650                      |
| 1812FS-682_L_            | 6.8                          | <b>10.5</b>           | 35                    | 0.35                              | 110                              | 850                       | 1450                      |
| 1812FS-103_L_            | 10                           | <b>10.5</b>           | 35                    | 0.55                              | 90                               | 710                       | 1400                      |
| 1812FS-153_L_            | 15                           | <b>10.5</b>           | 40                    | 0.75                              | 75                               | 680                       | 1150                      |
| 1812FS-223_L_            | 22                           | <b>10.5</b>           | 45                    | 0.85                              | 15                               | 600                       | 855                       |
| 1812FS-333_L_            | 33                           | <b>10.5</b>           | 45                    | 1.1                               | 10                               | 540                       | 820                       |
| 1812FS-393_L_            | 39                           | <b>10.5</b>           | 45                    | 1.1                               | 9.8                              | 500                       | 710                       |
| 1812FS-473_L_            | 47                           | <b>10.5</b>           | 45                    | 1.2                               | 8.0                              | 390                       | 645                       |
| 1812FS-683_L_            | 68                           | <b>10.5</b>           | 45                    | 1.8                               | 14.2                             | 260                       | 650                       |
| 1812FS-104_L_            | 100                          | <b>10.5</b>           | 45                    | 2.5                               | 4.5                              | 260                       | 520                       |
| 1812FS-154_L_            | 150                          | <b>10.5</b>           | 40                    | 3.8                               | 3.4                              | 220                       | 475                       |
| 1812FS-224_L_            | 220                          | <b>10.5</b>           | 45                    | 5.4                               | 3.0                              | 180                       | 390                       |
| 1812FS-274_L_            | 270                          | <b>10.5</b>           | 35                    | 6.5                               | 2.0                              | 150                       | 350                       |
| 1812FS-334_L_            | 330                          | <b>10.5</b>           | 45                    | 6.8                               | 3.0                              | 150                       | 310                       |
| 1812FS-394_L_            | 390                          | <b>10.5</b>           | 35                    | 7.6                               | 2.6                              | 140                       | 310                       |
| 1812FS-474_L_            | 470                          | <b>10.5</b>           | 35                    | 8.7                               | 2.1                              | 130                       | 280                       |
| 1812FS-564_L_            | 560                          | <b>10.5</b>           | 20                    | 11.2                              | 1.60                             | 110                       | 280                       |
| 1812FS-684_L_            | 680                          | <b>10.5</b>           | 25                    | 12.7                              | 1.90                             | 100                       | 250                       |
| 1812FS-824_L_            | 820                          | <b>10.5</b>           | 25                    | 16.8                              | 1.45                             | 90                        | 210                       |
| 1812FS-105_L_            | 1000                         | <b>10.5</b>           | 30                    | 19.5                              | 1.68                             | 90                        | 160                       |

- When ordering, please specify **tolerance** and **packaging** codes:

1812FS-105JLC

**Tolerance:** J = 5% K = 10%

(Table shows stock tolerances in bold.)

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (600 parts per full reel).

B = Less than full reel. On tape, but not machine ready. To have a leader and a trailer added (\$25 charge), use code letter C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape (2200 parts per full reel).

- Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4263B impedance analyzer.

- Tolerances in bold are stocked for immediate shipment.

- Q measured at 1 MHz on an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.

- DCR measured on a micro-ohmmeter and a Coilcraft CCF840 test fixture.

- SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.

- DC current at which the inductance drops 10% (typ) from its value without current.

- Current that causes a  $40^{\circ}\text{C}$  temperature rise from  $25^{\circ}\text{C}$  ambient.

- Electrical specifications at  $25^{\circ}\text{C}$ .

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



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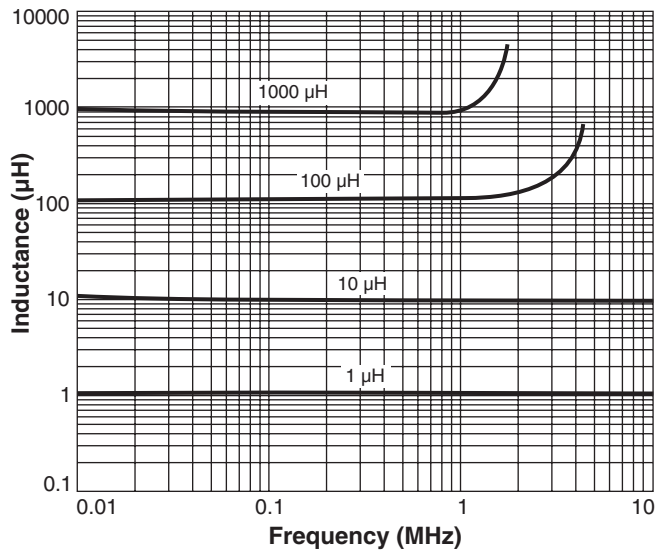
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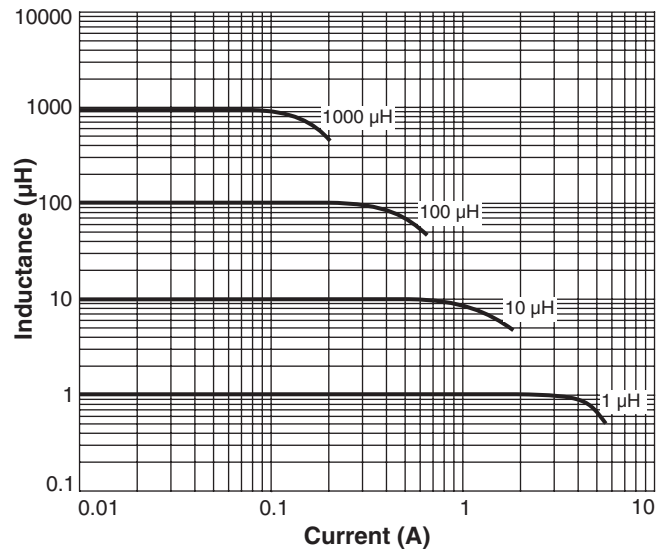


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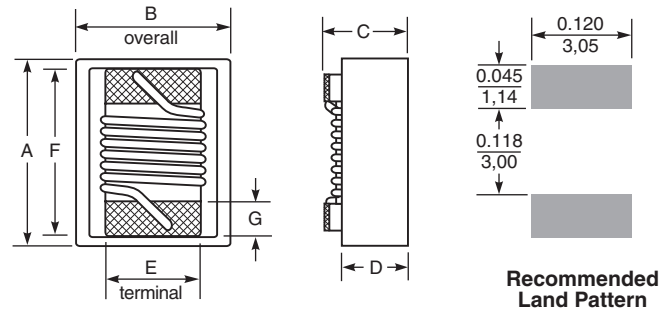
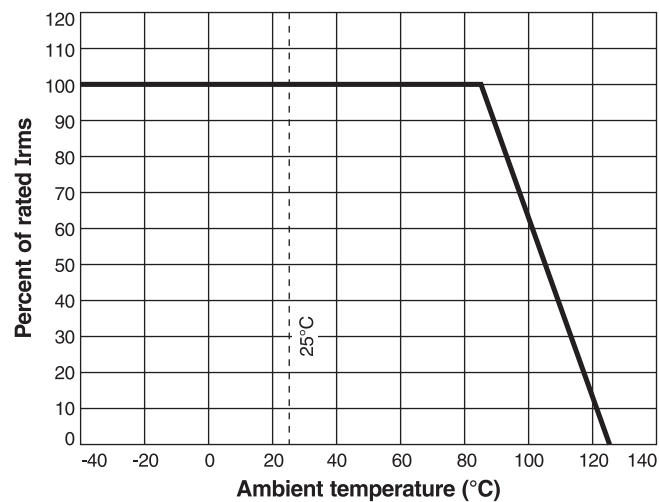
## Typical L vs Frequency



## Typical L vs Current



## Irms Derating



| A max | B max | C max | D ref | E ref | F ref | G            |
|-------|-------|-------|-------|-------|-------|--------------|
| 0.231 | 0.196 | 0.150 | 0.107 | 0.100 | 0.178 | 0.025 inches |
| 5,87  | 4,98  | 3,81  | 2,72  | 2,54  | 4,52  | 0,64 mm      |