



# Chip Inductors - 1812CS (4532)

- Higher SRF values than 1812 size parts with ferrite cores
- 5% tolerances for all values
- 19 inductance values from 1.0 to 33  $\mu$ H

Request free evaluation samples by contacting Coilcraft or visiting [www.coilcraft.com](http://www.coilcraft.com).

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>( $\mu$ H) | Percent tolerance <sup>3</sup> | Q min <sup>4</sup> | SRF min <sup>5</sup><br>(MHz) | DCR max <sup>6</sup><br>(Ohms) | Irms <sup>7</sup><br>(mA) |
|--------------------------|---------------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------|---------------------------|
| 1812CS-102XJL_           | 1.0 @ 7.9 MHz                         | <b>5</b>                       | 60 @ 50 MHz        | 310                           | 1.2                            | 480                       |
| 1812CS-122XJL_           | 1.2 @ 7.9 MHz                         | <b>5</b>                       | 62 @ 50 MHz        | 230                           | 1.2                            | 480                       |
| 1812CS-152X_L_           | 1.5 @ 7.9 MHz                         | <b>5,2</b>                     | 65 @ 50 MHz        | 210                           | 1.6                            | 430                       |
| 1812CS-182XJL_           | 1.8 @ 7.9 MHz                         | <b>5</b>                       | 68 @ 50 MHz        | 190                           | 2.0                            | 380                       |
| 1812CS-222X_L_           | 2.2 @ 7.9 MHz                         | <b>5,2</b>                     | 63 @ 50 MHz        | 170                           | 2.2                            | 340                       |
| 1812CS-272X_L_           | 2.7 @ 7.9 MHz                         | <b>5,2</b>                     | 63 @ 50 MHz        | 160                           | 3.2                            | 300                       |
| 1812CS-332X_L_           | 3.3 @ 7.9 MHz                         | <b>5,2</b>                     | 65 @ 50 MHz        | 145                           | 3.8                            | 270                       |
| 1812CS-392X_L_           | 3.9 @ 7.9 MHz                         | <b>5,2</b>                     | 69 @ 50 MHz        | 130                           | 5.0                            | 240                       |
| 1812CS-472XJL_           | 4.7 @ 7.9 MHz                         | <b>5</b>                       | 63 @ 50 MHz        | 115                           | 5.4                            | 230                       |
| 1812CS-562XJL_           | 5.6 @ 7.9 MHz                         | <b>5</b>                       | 59 @ 50 MHz        | 100                           | 5.7                            | 220                       |
| 1812CS-682XJL_           | 6.8 @ 7.9 MHz                         | <b>5</b>                       | 60 @ 50 MHz        | 90                            | 6.6                            | 210                       |
| 1812CS-822X_L_           | 8.2 @ 7.9 MHz                         | <b>5,2</b>                     | 47 @ 50 MHz        | 80                            | 7.0                            | 200                       |
| 1812CS-103XJL_           | 10 @ 7.9 MHz                          | <b>5</b>                       | 36 @ 50 MHz        | 70                            | 7.7                            | 190                       |
| 1812CS-123XJL_           | 12 @ 2.5 MHz                          | <b>5</b>                       | 35 @ 10 MHz        | 60                            | 8.7                            | 180                       |
| 1812CS-153X_L_           | 15 @ 2.5 MHz                          | <b>5,2</b>                     | 34 @ 10 MHz        | 50                            | 9.6                            | 170                       |
| 1812CS-183XJL_           | 18 @ 2.5 MHz                          | <b>5</b>                       | 30 @ 10 MHz        | 45                            | 10.5                           | 160                       |
| 1812CS-223X_L_           | 22 @ 2.5 MHz                          | <b>5,2</b>                     | 32 @ 10 MHz        | 40                            | 11.5                           | 155                       |
| 1812CS-273XJL_           | 27 @ 2.5 MHz                          | <b>5</b>                       | 29 @ 10 MHz        | 30                            | 12.5                           | 150                       |
| 1812CS-333X_L_           | 33 @ 2.5 MHz                          | <b>5,2</b>                     | 20 @ 10 MHz        | 20                            | 13.5                           | 145                       |

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

1812CS-333XGLC

**Tolerance:** G = 2% J = 5% (Table shows stock tolerances in bold.)

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
E = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit terminations.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (600 parts per full reel).  
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.  
D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (2200 parts per full reel).

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
  - Tolerances in bold are stocked for immediate shipment.
  - Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
  - SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
  - DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF859 test fixture.
  - Current that causes a 15°C temperature rise from 25°C ambient.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Designer's Kit C337** contains 10 of each 5% part

**Core material** Ceramic

**Environmental** RoHS compliant, halogen free optional

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

**Weight** 109 – 128 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** 600 per 7" reel; 2200 per 13" reel. Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 3.7 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf



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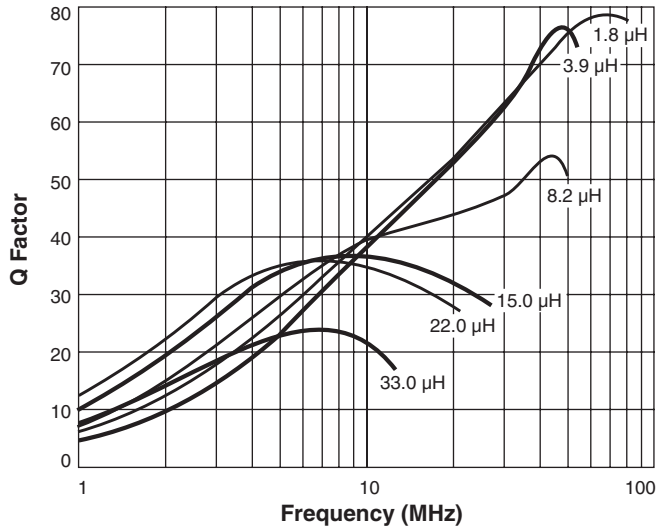
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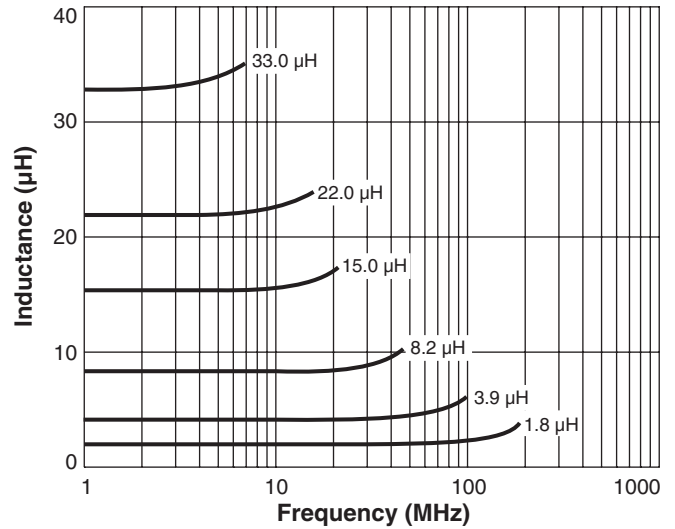
# Chip Inductors - 1812CS Series (4532)

**S-Parameter files**  
ON OUR WEB SITE  
**SPICE models**  
ON OUR WEB SITE

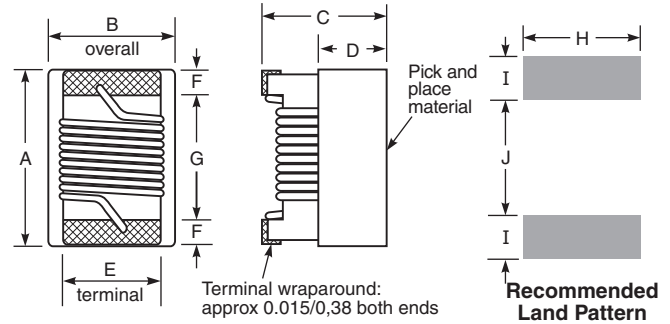
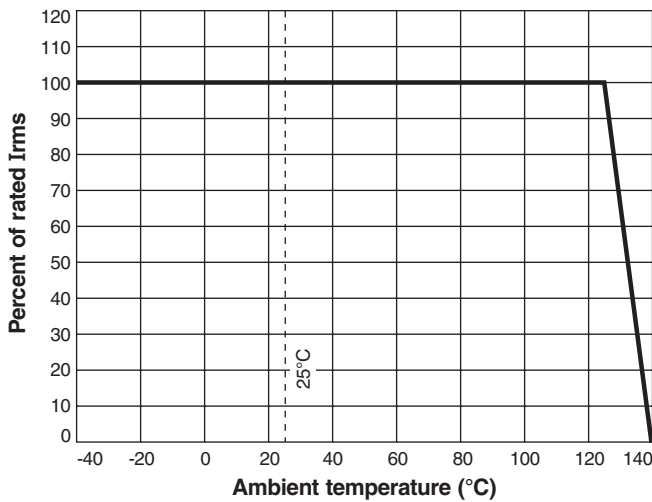
## Typical Q vs Frequency



## Typical L vs Frequency



## Irms Derating



| A     | B     | C     | D     | E     | F     | G     | H     | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max   | max   | max   | ref   |       |       |       |       |       |       |
| 0.195 | 0.150 | 0.135 | 0.070 | 0.100 | 0.025 | 0.128 | 0.120 | 0.045 | 0.118 |
| 4,95  | 3,81  | 3,43  | 1,78  | 2,54  | 0,64  | 3,25  | 3,05  | 1,14  | 3,00  |

**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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