

Chip Inductors for DOCSIS 3.x



- Low inductance (150 – 390 nH) 1812 size chip inductors
- Exceptionally high Q
- High current ratings – up to 1150 mA
- 2% tolerance for all values

| Part number ¹ | Inductance ² ±2% (nH) | Q typ ³ | SRF typ ⁴ (MHz) | DCR max ⁵ (mOhms) | I _{rms} ⁶ (mA) |
|--------------------------|-------------------------------------|-----------------------|----------------------------------|------------------------------------|---------------------------------------|
| HA4031-AL_ | 150 | 75 | 860 | 100 | 1150 |
| HA4032-AL_ | 180 | 80 | 850 | 105 | 1150 |
| HA4033-AL_ | 220 | 80 | 700 | 110 | 940 |
| HA4034-AL_ | 270 | 85 | 730 | 120 | 940 |
| HA4035-AL_ | 330 | 80 | 600 | 135 | 850 |
| HA4036-AL_ | 390 | 80 | 600 | 150 | 850 |

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

↓
HA4036-ALC

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).

2. Inductance measured at 50 MHz, using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
3. Q measured at 50 MHz, using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
4. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
5. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF859 test fixture.
6. Current that causes a 15°C temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Core material Ceramic

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 I_{rms} current

Maximum part temperature +140°C (ambient + temp rise)

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

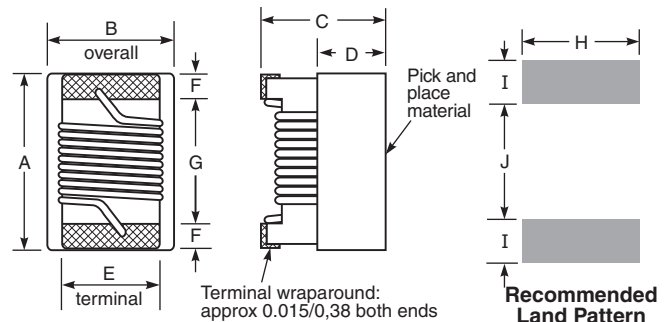
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

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 to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).



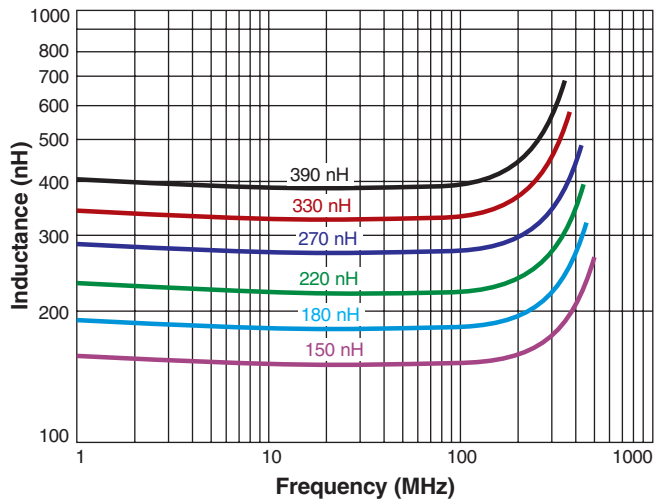
| A | B | C | D | E | F | G | H | I | J |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max | max | max | ref | | | | | | |
| 0.195 | 0.150 | 0.135 | 0.070 | 0.100 | 0.025 | 0.128 | 0.120 | 0.045 | 0.118 |
| 4,95 | 3,81 | 3,43 | 1,78 | 2,54 | 0,64 | 3,25 | 3,05 |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

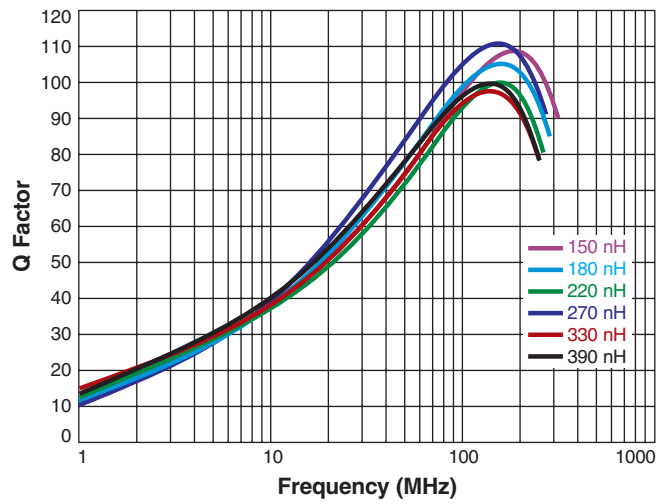


Ultra High Q Chip Inductors – 1812

L vs Frequency



Q vs Frequency



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