



# Midi Spring® Air Core Inductors



- Air core inductors feature high Q and current handling
- Acrylic top provides a flat surface for pick and place
- Solder coated leads ensure reliable soldering

**Weight** 0.10 – 0.16 g

**Terminations** RoHS compliant tin-silver over copper. Other terminations available at additional cost.

**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.  
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)** +5 to +70 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** 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 4.2 mm pocket depth

**PCB washing** Only pure water or alcohol recommended

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Q <sup>2</sup> typ	Q <sup>2</sup> min	Test freq. (MHz)	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	Irms <sup>6</sup> (A)
1812SMS-22N_L_	22	<b>5,2</b>	135	100	150	3.2	4.2	3.0
1812SMS-27N_L_	27	<b>5,2</b>	135	100	150	2.7	4.0	3.5
1812SMS-33N_L_	33	<b>5,2</b>	130	100	150	2.5	4.8	3.0
1812SMS-39N_L_	39	<b>5,2</b>	135	100	150	2.1	4.4	3.0
1812SMS-47N_L_	47	<b>5,2</b>	135	100	150	2.1	5.6	3.0
1812SMS-56N_L_	56	<b>5,2</b>	125	100	150	1.5	6.2	3.0
1812SMS-68N_L_	68	<b>5,2</b>	120	100	150	1.5	8.2	2.5
1812SMS-82N_L_	82	<b>5,2</b>	120	100	150	1.3	9.4	2.5
1812SMS-R10_L_	100	<b>5,2</b>	115	100	150	1.2	12.3	1.7
1812SMS-R12_L_	120	<b>5,2</b>	125	100	150	1.1	17.3	1.5
1812SMS-R15_L_	150	<b>5,2</b>	145	100	150	0.75	33.0	1.2

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

1812SMS-R12 **G** **L** **C**

**Tolerance:** G = 2% J = 5%

**Termination:** L = RoHS compliant tin-silver (96.5/3.5) over copper.  
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, 500 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, 2000 parts per full reel.

2. Inductance and Q tested on the Agilent/HP 4291A with the 16193 fixture and correlation.

3. Tolerances in bold are stocked for immediate shipment.

4. SRF tested on the Agilent/HP 8753D and the SMD-D test fixture.

5. DCR tested on the Cambridge Technology Model 510 Micro-ohmmeter.

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.

For part marking data see Color Coding section.

## Coilcraft®

Specifications subject to change without notice.  
Please check our website for latest information.

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1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

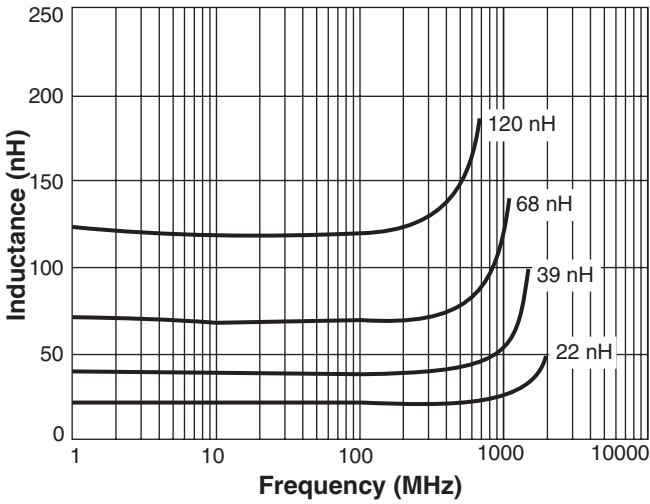
E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>



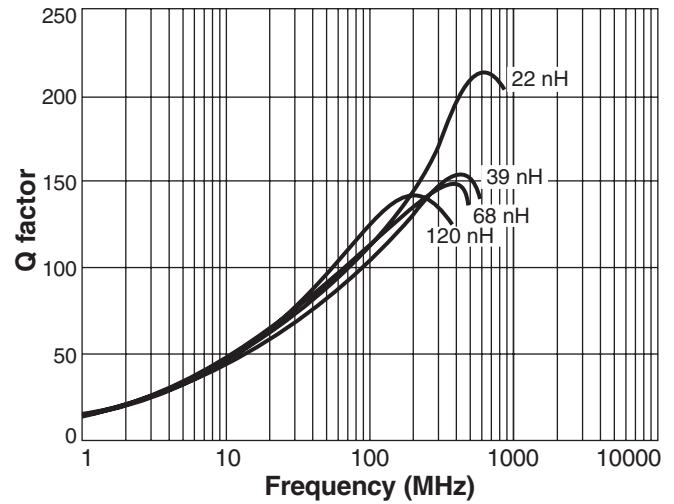
# Midi Spring® Air Core Inductors

Designer's Kit C318 contains 12 each of all 5% values.  
 Designer's Kit C318-2 contains 12 each of all 2% values.

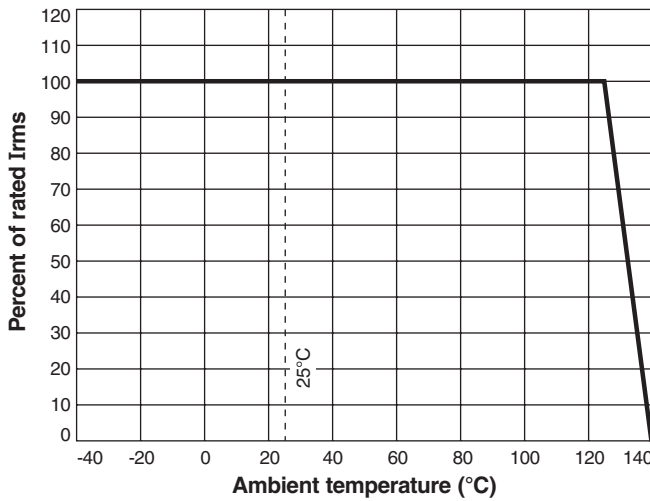
## Typical L vs Frequency



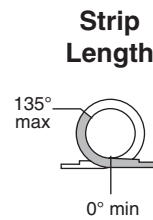
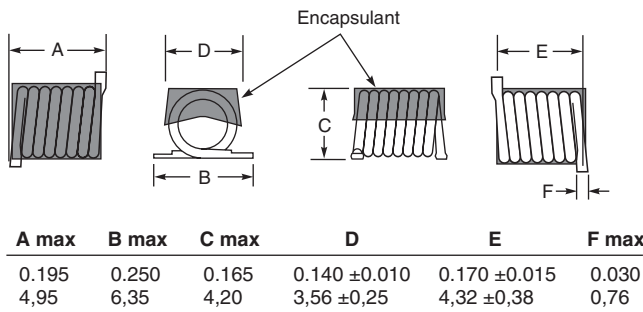
## Typical Q vs Frequency



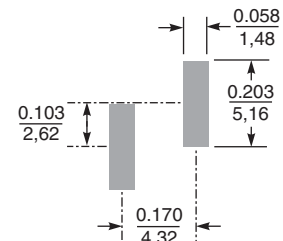
## Irms Derating



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



## Recommended Land Pattern



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$



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1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail info@coilcraft.com Web http://www.coilcraft.com