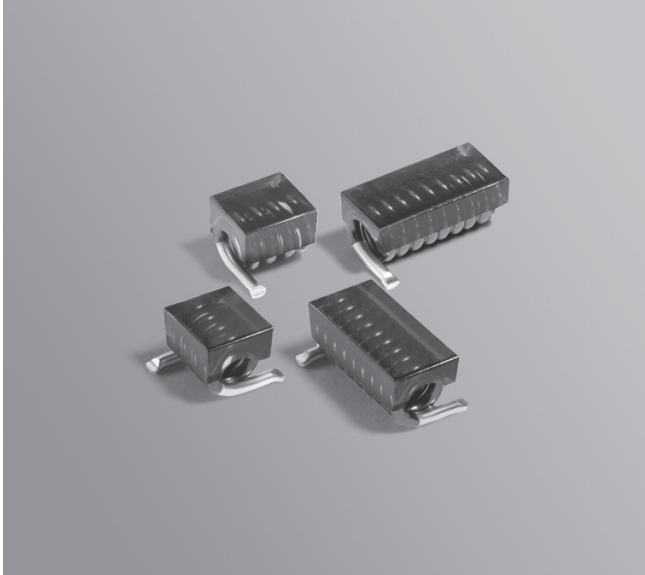


# Mini Air Core Inductors 1512SP 2712SP



- Small air core inductors feature high Q and tight tolerances
- Acrylic jacket provides a flat top for pick and place
- Solder coated leads ensure reliable soldering
- Wide range of standard EIA inductance values
- Available in two sizes: 4.45 × 3.94 × 3.15 mm and 6.86 × 4.45 × 3.15 mm
- **Designer's Kit C501** contains 10 of each part

**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. 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)** +5 to +70 ppm/°C

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

**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> (nH)	Percent tol <sup>3</sup>	Q <sup>4</sup> min	SRF typ <sup>5</sup> (GHz)	DCR max <sup>6</sup> (mOhm)	Irms <sup>7</sup> max (A)	Weight (mg)
1512SP-2N5K1E_	2.5	<b>10</b>	80	14.0	1.0	11.1	37.8
1512SP-2N7K1E_	2.7	<b>10</b>	80	14.0	3.0	8.4	16.6
1512SP-4N7_2E_	4.7	<b>5,2,1</b>	80	18.0	2.0	9.4	51.3
1512SP-5N6_2E_	5.6	<b>5,2,1</b>	80	18.0	3.2	6.6	33.9
1512SP-6N8_3E_	6.8	<b>5,2,1</b>	80	6.4	2.1	9.8	78.4
1512SP-8N2_3E_	8.2	<b>5,2,1</b>	80	7.2	2.9	7.4	57.2
1512SP-10N_4E_	10.0	<b>5,2,1</b>	80	3.4	2.5	9.2	94.8
1512SP-12N_4E_	12.0	<b>5,2,1</b>	80	4.1	3.5	8.0	80.2
1512SP-15N_4E_	15.0	<b>5,2,1</b>	80	4.5	5.0	5.9	55.8
1512SP-18N_4E_	18.0	<b>5,2,1</b>	80	5.2	9.3	3.7	34.2
1512SP-22N_5E_	22.0	<b>5,2,1</b>	80	3.1	5.3	5.2	64.0
1512SP-27N_5E_	27.0	<b>5,2,1</b>	80	4.2	10.6	3.5	37.5
1512SP-33N_6E_	33.0	<b>5,2,1</b>	80	2.8	8.6	3.9	50.7
1512SP-43N_7E_	43.0	<b>5,2,1</b>	80	2.1	10.6	4.3	55.5
1512SP-51N_7E_	51.0	<b>5,2,1</b>	80	2.1	14.5	2.7	48.0
1512SP-62N_8E_	62.0	<b>5,2,1</b>	80	1.8	15.5	2.7	51.1

Continued on next page

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

1512SP-62N**J**8**E**C

**Tolerance:** F = 1% G = 2% J = 5% K = 10% (Table shows stock tolerances in bold.)

**Termination:** E = Halogen free component. RoHS compliant tin-silver (96.5/3.5) over copper 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, 700 (1512SP) or 500 (2712SP) parts per full reel. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked, 2500 (1512SP) or 2200 (2712SP) parts per full reel.

2. Inductance measured at 150 MHz with an Agilent/HP 4286 or equivalent, a Coilcraft SMD-A and correlation.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at 150 MHz using an Agilent/HP 4291A with an Agilent/HP 16193A test fixture or equivalents.

5. SRF is measured on an Agilent 8753ES or equivalent with a Coilcraft CCF1268 test fixture.

6. DCR is measured on a Keithley 580 Micro-ohmmeter or equivalent.

7. Current that causes a 15°C temperature rise from 125°C ambient.

8. Electrical specifications at 25°C.

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



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# Mini Air Core Inductors – 2712SP and 1512SP

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Q <sup>4</sup> min	SRF typ <sup>5</sup> (GHz)	DCR max <sup>6</sup> (mOhm)	Irms <sup>7</sup> max (A)	Weight (mg)
2712SP-10N_4E	10.0	<b>5,2,1</b>	85	6.6	3.1	10.3	89.5
2712SP-12N_5E	12.0	<b>5,2,1</b>	85	5.8	3.4	7.8	102.5
2712SP-15N_6E	15.0	<b>5,2,1</b>	85	4.9	3.3	8.2	142.6
2712SP-18N_7E	18.0	<b>5,2,1</b>	85	3.9	3.5	7.9	156.2
2712SP-22N_7E	22.0	<b>5,2,1</b>	85	3.9	4.5	7.0	132.4
2712SP-27N_8E	27.0	<b>5,2,1</b>	85	3.1	5.0	6.6	144.0
2712SP-33N_8E	33.0	<b>5,2,1</b>	85	3.3	7.4	5.1	98.5
2712SP-39N_9E	39.0	<b>5,2,1</b>	90	2.7	6.8	4.6	133.3
2712SP-47N_0E	47.0	<b>5,2,1</b>	90	2.4	8.0	4.8	141.6
2712SP-51N_0E	51.0	<b>5,2,1</b>	95	2.4	9.25	4.1	117.9
2712SP-56N_0E	56.0	<b>5,2,1</b>	95	2.6	15.5	2.9	79.3
2712SP-68N_1E	68.0	<b>5,2,1</b>	100	2.3	16.0	3.1	85.9
2712SP-82N_3E	82.0	<b>5,2,1</b>	100	1.9	14.7	2.8	118.3
2712SP-101_4E	100.0	<b>5,2,1</b>	100	1.8	19.0	2.3	103.2
2712SP-121_4E	120.0	<b>5,2,1</b>	100	1.6	26.5	2.3	87.9
2712SP-151_6E	150.0	<b>5,2,1</b>	100	1.4	29.0	2.2	95.6

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

2712SP-151J6EC

**Tolerance:** F = 1% G = 2% J = 5% K = 10% (Table shows stock tolerances in bold.)

**Termination:** E = Halogen free component. RoHS compliant tin-silver (96.5/3.5) over copper 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, 700 (1512SP) or 500 (2712)SP parts per full reel.

Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked, 2500 (1512SP) or 2200 (2712SP) parts per full reel.

2. Inductance measured at 150 MHz with an Agilent/HP 4286 or equivalent, a Coilcraft SMD-A and correlation.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at 150 MHz using an Agilent/HP 4291A with an Agilent/HP 16193A test fixture or equivalents.

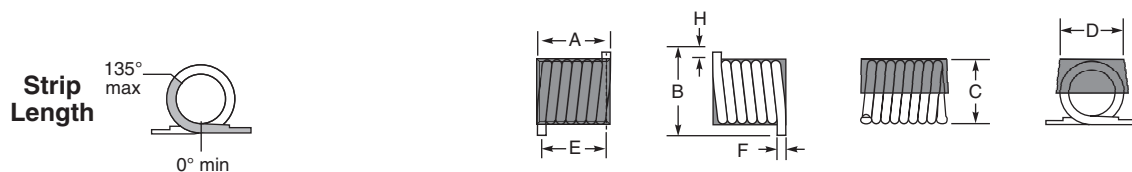
5. SRF is measured on an Agilent 8753ES or equivalent with a Coilcraft CCF1268 test fixture.

6. DCR is measured on a Keithley 580 Micro-ohmmeter or equivalent.

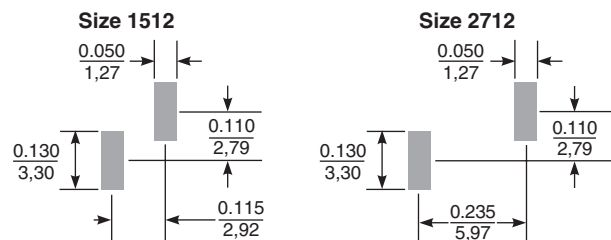
7. Current that causes a 15°C temperature rise from 125°C ambient.

8. Electrical specifications at 25°C.

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



### Recommended Land Patterns



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

Part Size	Units	A MAX	B MAX	C MAX	D	E	F MAX	H
1512	in	0.155	0.175	0.124 0.130 (-2N5)	0.110 ±0.010	0.115 ±0.010	0.030	0.020 ±0.010
	mm	3.94	4.45	3.15 3.30 (-2N5)	2.79 ±0.25	2.92 ±0.25	0.76	0.51 ±0.25
2712	in	0.270	0.175	0.124	0.110 ±0.010	0.230 ±0.015	0.030	0.020 ±0.10
	mm	6.86	4.45	3.15	2.79 ±0.25	5.84 ±0.38	0.76	0.51 ±0.25

### Packaging

**1512:** 700/7" reel; 2500/13" reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.3 mm pocket depth

**2712:** 500/7" reel; 2200/13" reel Plastic tape: 16 mm wide, 0.28 mm thick, 8 mm pocket spacing, 3.4 mm pocket depth

Recommended pick and place nozzle: OD: 0.110"; ID: 0.091"



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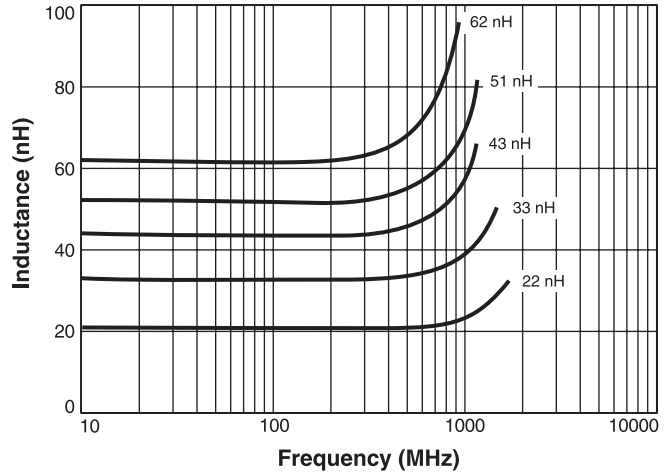
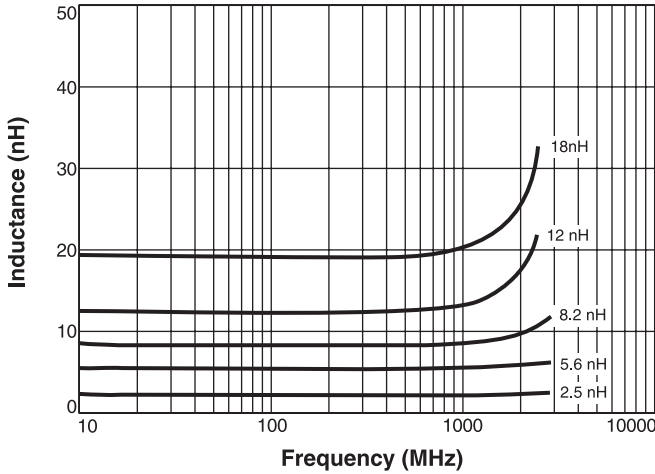
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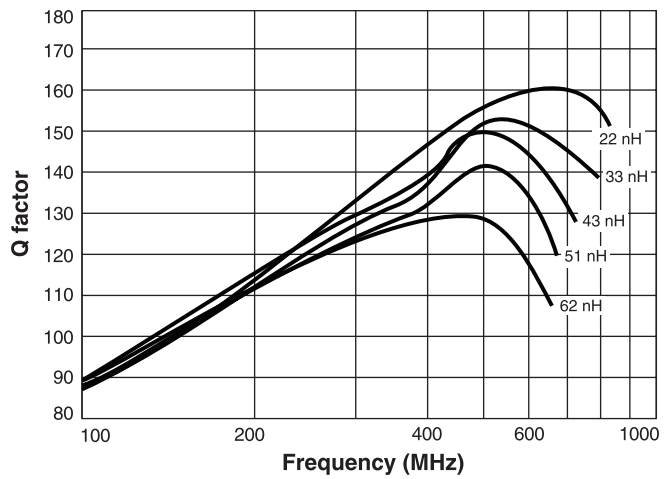
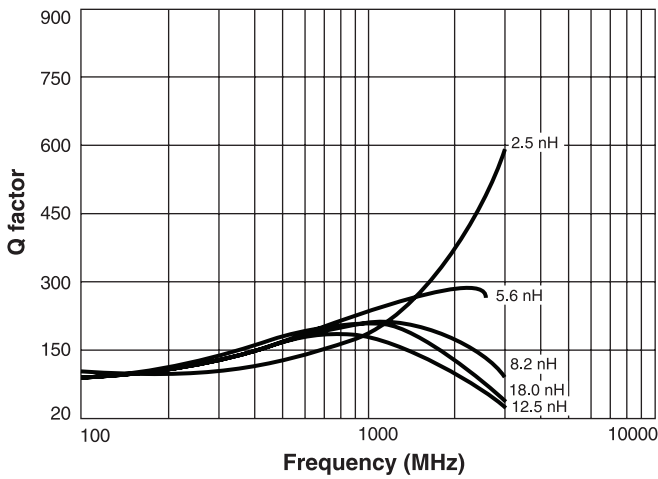
# Mini Air Core Inductors – 1512SP



## Typical L vs Frequency



## Typical Q vs Frequency

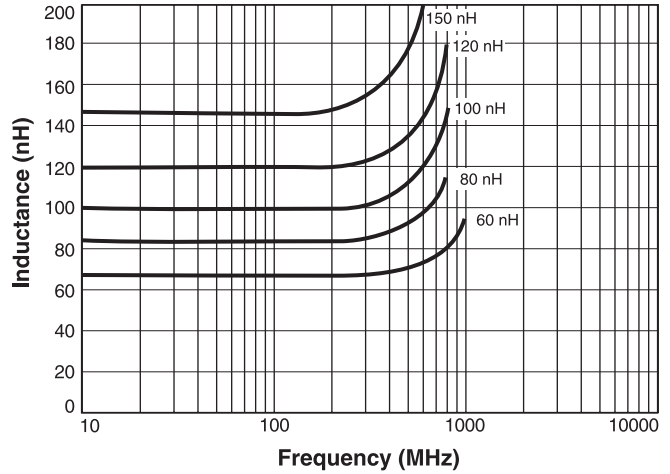
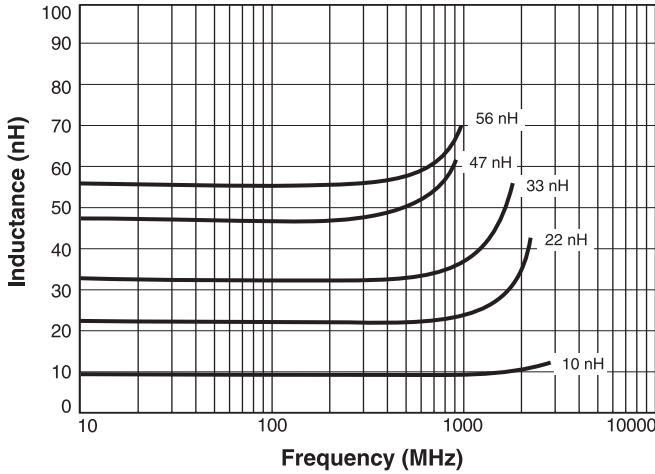




# Mini Air Core Inductors – 2712SP



## Typical L vs Frequency



## Typical Q vs Frequency

