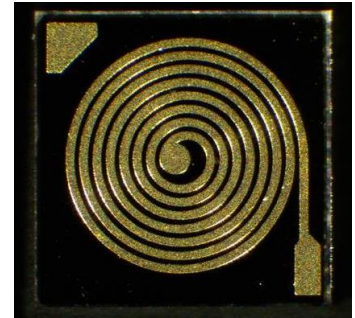


## Standard Thin Film Spiral Inductors

PPI Spiral Inductors consist of a thin film gold spiral patterned on a substrate for use in a wide variety of uses in frequencies from DC to RF.

An optional polyimide coating over the coil is available for increased resistance to scratches or shorts. Non-conductive epoxy is recommended as a mounting method, backside metallization is also available. A second corner pad is provided for easy wire-bonding from the center pad for edge-contact mounting.



50x50 Spiral Inductor

### ◆ Recommended Substrates

99.6% Alumina (Al<sub>2</sub>O<sub>3</sub>)  
Quartz

### ◆ Part Numbering

**P L S - 20-50×50×10 - A 28R00 B W**

**P = Passive Plus**

**Inductor**

**Inductor Style**

S = Spiral

**Substrate**

20 = Quartz  
35 = 99.6% Alumina

**Length and Width (mils)**

See Charts on next page

**Thickness**

10 mils standard

**Packaging**

W = Waffle Pack (Standard)\*

**Polyimide**

B = Bare  
P = Polyimide

**Inductance (nH)**

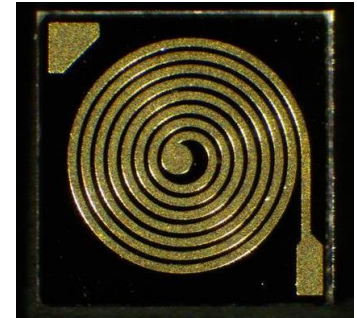
Digits 1-4 are significant figures  
Digit 5 is the number of zeros to follow  
When required, the “R” is used as a decimal point  
and the exponent is omitted.  
e.g. 28R00 = 28nH, 1R500 = 1.5nH

**Metallization**

See Charts on next page

\* All parts are supplied in waffle packs. Other packaging may be available. Contact PPI for additional packaging options.

## Standard Thin Film Spiral Inductors



50x50 Spiral Inductor

### ◆ Terminations

Metallization		Code
Top Side	Bottom Side	
Ta/Pd/Au	—	A
Ti/Pt/Au	—	C
Ta/Pd/Au	Ta/Pd/Au	D
TiW/Au	—	E
TiW/Au	Ta/Pd/Au	F

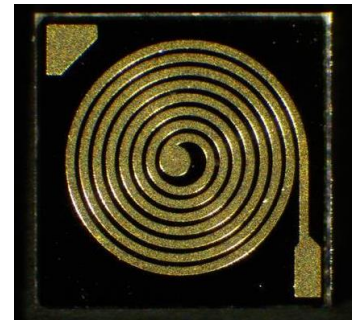
### ◆ Sizes and Values

Case Size	Inductances	# of Turns	DC Resistance	Q (@ 200MHz)	Q (@ 500MHz)
25 x 25	1.2 nH	1.5	0.6Ω	3	7
25 x 25	2.0 nH	2.0	0.9Ω	3	8
25 x 25	3.0 nH	2.5	1.2Ω	4	9
30 x 30	4.4 nH	3.0	1.5Ω	4	10
30 x 30	6.0 nH	3.5	1.9Ω	4	11
30 x 30	7.9 nH	4.0	2.3Ω	4	11
40 x 40	10 nH	4.5	2.7Ω	5	12
40 x 40	13 nH	5.0	3.2Ω	5	12
40 x 40	16 nH	5.5	3.7Ω	5	13
40 x 40	19 nH	6.0	4.2Ω	6	13
40 x 40	23 nH	6.5	4.7Ω	6	14
50 x 50	28 nH	7.0	5.3Ω	7	14

Inductance values are computed in free air, using a magnetic permeability for free air of  $\mu = 4.0 \times 10^{-7}$ . DC resistance is based on a gold metallization.

Other inductance values, DC resistance values, substrates, geometries, metallizations, and custom inductors are available.

## Standard Thin Film Spiral Inductors



50x50 Spiral Inductor

### ◆ General Properties

Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +150°C
Operating Frequency	DC to 500 MHz
Insulation Resistance	10 <sup>12</sup> Ω · min at 25°C

### ◆ Testing

Testing Performed	Specification / Standard
Visual Inspection	MIL-PRF-55342 MIL-STD-883
Mechanical Inspection	MIL-PRF-55342
DC Resistance	MIL-PRF-55342 MIL-STD-202
High Temperature Exposure	MIL-PRF-55342
Thermal Shock	MIL-PRF-55342 MIL-STD-202
Resistance to Bonding Exposure	MIL-PRF-55342
Wire Bonding Integrity	MIL-PRF-55342
Life Test	MIL-PRF-55342 MIL-STD-202

### ◆ Performance Specifications

Additional sizes and custom inductors available. Please contact sales@passiveplus.com.

### ◆ Packaging

ESD waffle packs are standard. Film rings and gel pack packaging may be available upon request.

