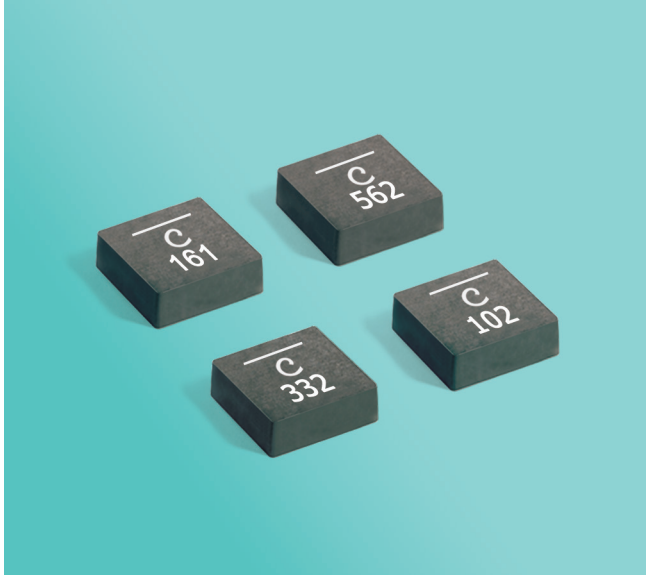


# High-Reliability Power Inductors MS514PYA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Passes vibration testing to 80 G and shock testing to 1000 G
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- High current and very low DCR
- Soft saturation makes them ideal for VRM/VRD applications.

**Core material** Composite

**Terminations** Tin-lead (63/37) over copper.

**Weight** 0.63 – 1.22 g

**Ambient temperature** –55°C to +105°C with Irms current

**Maximum part temperature** +155°C (ambient + temp rise).

**Storage temperature** Component: –55°C to +155°C.

Tape and reel packaging: –55°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at

+260°C, parts cooled to room temperature between cycles

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

**Enhanced crush-resistant packaging** 400 per 7" reel

Plastic tape: 16 mm wide, 0.33 mm thick, 12 mm pocket spacing, 3.0 mm pocket depth

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (µH)	DCR (mOhms) <sup>3</sup>		SRF (MHz) <sup>4</sup>		Isat <sup>5</sup> (A)	Irms (A) <sup>6</sup>	
		typ	max	min	typ		20°C rise	40°C rise
MS514PYA161MSZ	0.16	1.15	1.26	126	158	60.0	18.7	24.4
MS514PYA301MSZ	0.30	1.75	1.92	81	101	41.0	15.8	20.7
MS514PYA601MSZ	0.60	3.00	3.30	58	72	36.0	13.5	17.3
MS514PYA102MSZ	1.0	4.55	5.00	41	52	28.0	12.1	16.4
MS514PYA152MSZ	1.5	7.60	8.36	31	39	23.5	8.9	11.3
MS514PYA222MSZ	2.2	13.70	15.07	23	29	18.0	7.5	9.7
MS514PYA272MSZ	2.7	15.70	17.30	25	32	12.8	6.7	8.6
MS514PYA332MSZ	3.3	19.50	21.45	20	25	12.3	6.0	7.5
MS514PYA472MSZ	4.7	25.20	27.72	17	21	12.0	5.2	6.8
MS514PYA562MSZ	5.6	30.25	33.30	14	17	11.5	4.0	5.5
MS514PYA682MSZ	6.8	45.00	51.75	12	15	8.7	3.3	5.1
MS514PYA822MSZ	8.2	53.00	60.95	10	13	8.4	2.2	4.4

## Irms Testing

Irms testing was performed on a 0.060" thick pcb with 4 oz. copper traces optimized to minimize additional temperature rise.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

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

**MS514PYA822MSZ**

**Screening:** Z = Unscreened

Y = Unscreened (SLDC Option A)

W = Unscreened (SLDC Option B)

H = Group A screening per Coilcraft CP-SA-10001

G = Coilcraft CP-SA-10001 Group A (SLDC Option A)

D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

All screening performed to the document's latest revision

Custom screening also available

2. Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4192A.

3. DCR measured using a micro-ohmmeter.

4. SRF measured using an Agilent/HP 4395A or equivalent.

5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.

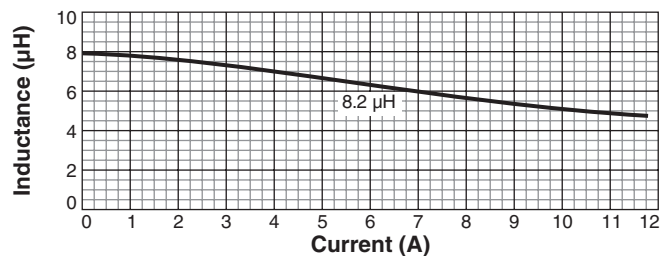
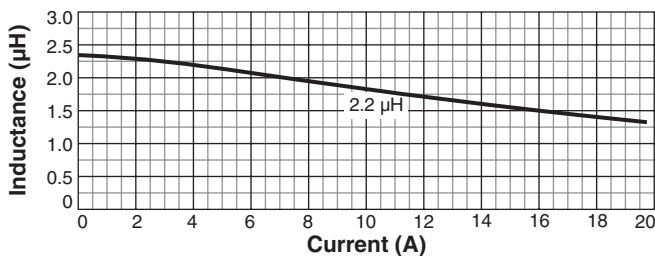
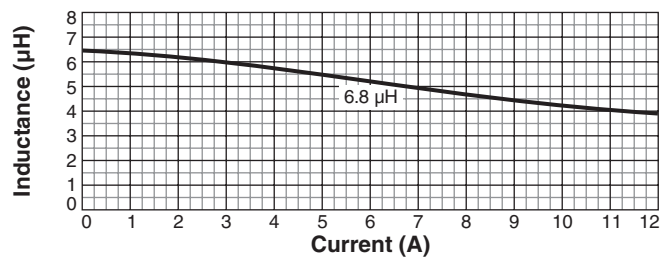
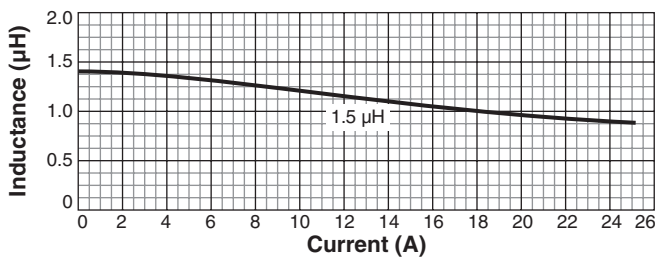
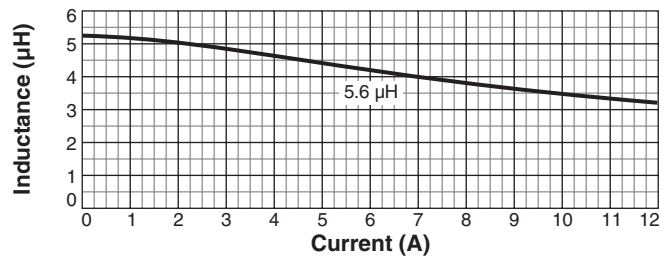
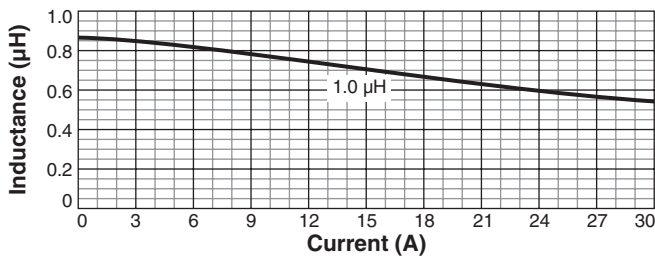
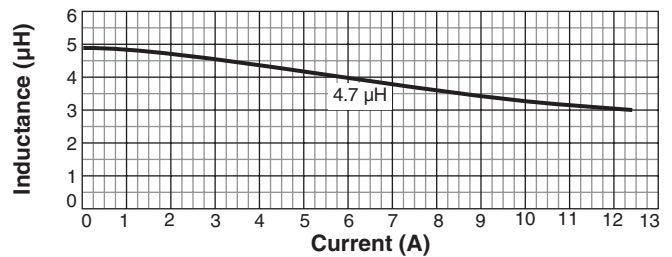
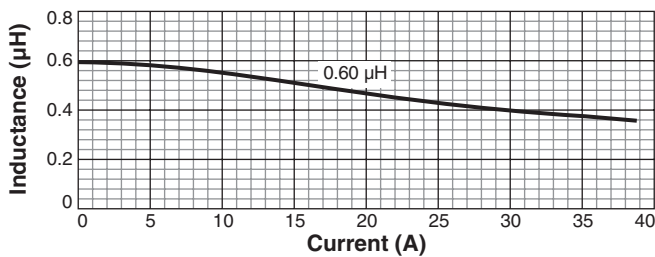
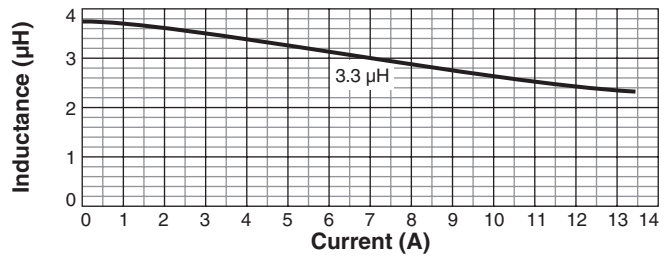
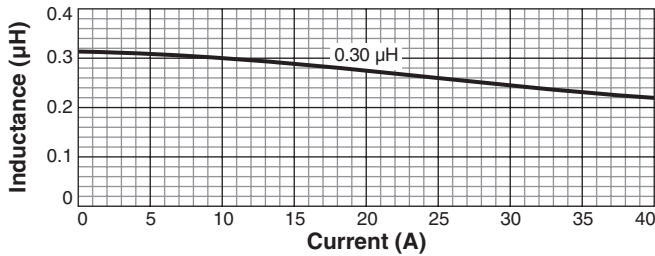
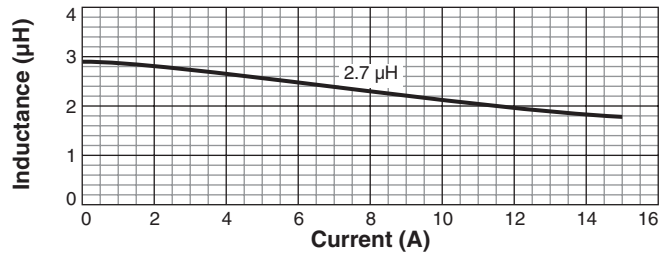
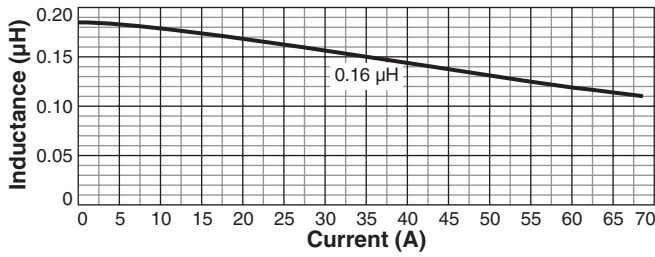
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings

7. Electrical specifications at 25°C.

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

# MS514PYA Series (7030)

## L vs Current



CRITICAL PRODUCTS & SERVICES

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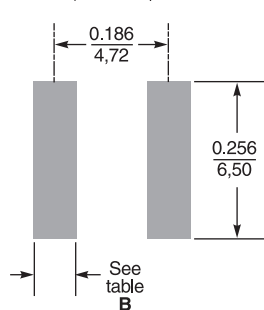
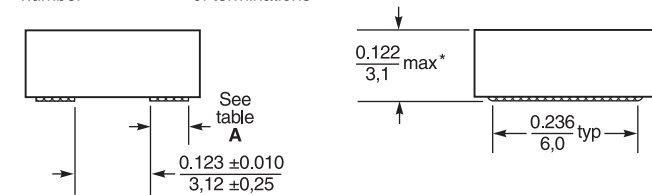
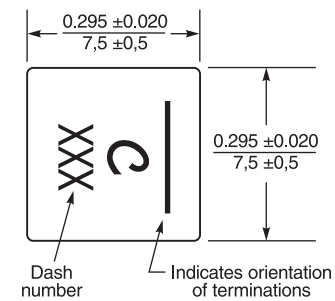
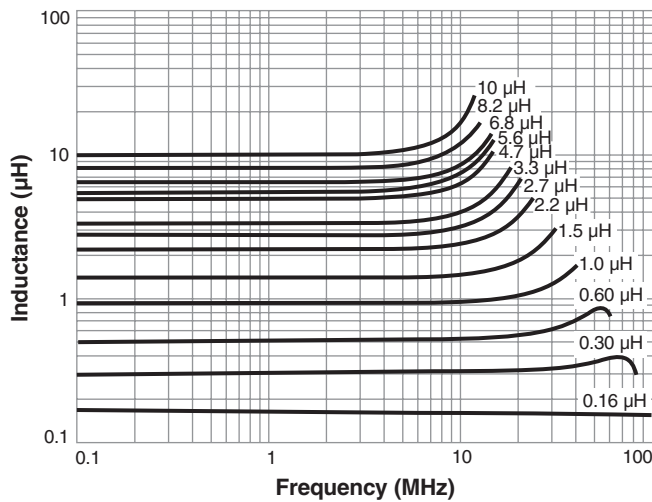
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# MS514PYA Series (7030)

## Typical L vs Frequency



### Suggested Land Pattern

Dash number	A		B	
	Terminal width ±0.004 / ±0,10 (in / mm)	Land pattern width (in / mm)	Terminal width ±0.004 / ±0,10 (in / mm)	Land pattern width (in / mm)
-161	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-301	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-601	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-102	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-152	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-222	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-272	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-332	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-472	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-562	0.063 / 1,60	0.070 / 1.78	0.063 / 1,60	0.070 / 1.78
-682	0.055 / 1,40	0.062 / 1.58	0.055 / 1,40	0.062 / 1.58
-822	0.055 / 1,40	0.062 / 1.58	0.055 / 1,40	0.062 / 1.58

\* Height dimension shown is for the mounted part after reflow.  
Dimension before mounting can be an additional 0.008 inch / 0,2 mm.

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