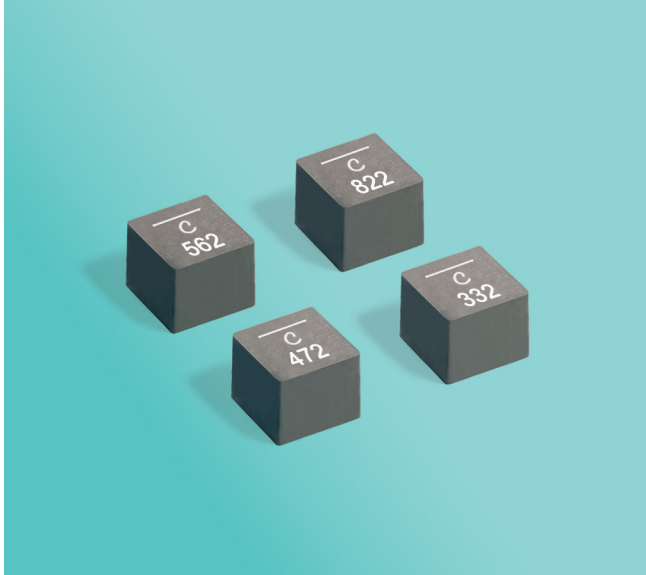


# High-Reliability Power Inductors MS515PYA



- 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** 0.55 – 0.84 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** 250 per 7" reel  
Plastic tape: 16 mm wide, 0.3 mm thick, 8 mm pocket spacing, 5.21 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 (A) <sup>5</sup>	Irms (A) <sup>6</sup>	
		typ	max	min	typ		20°C rise	40°C rise
MS515PYA561MSZ	0.56	4.15	4.56	77	96	18.1	10.7	14.3
MS515PYA821MSZ	0.82	5.15	5.66	50	63	14.8	8.9	12.4
MS515PYA122MSZ	1.2	6.16	6.76	43	54	12.9	8.7	11.9
MS515PYA152MSZ	1.5	7.10	7.80	38	48	11.5	8.4	11.6
MS515PYA222MSZ	2.2	9.05	9.95	33	41	9.5	6.8	9.5
MS515PYA332MSZ	3.3	16.90	18.60	27	34	7.4	5.3	7.0
MS515PYA472MSZ	4.7	21.95	24.15	23	29	6.3	4.6	6.2
MS515PYA562MSZ	5.6	23.45	25.80	20	25	5.7	4.0	5.4
MS515PYA682MSZ	6.8	26.75	29.45	17	21	5.4	3.5	4.8
MS515PYA822MSZ	8.2	31.75	34.95	14	18	5.1	3.4	4.6
MS515PYA103MSZ	10	40.90	45.00	12	15	4.6	2.7	3.7
MS515PYA153MSZ	15	69.70	76.70	10	13	3.5	2.2	2.9
MS515PYA223MSZ	22	90.60	99.65	9	11	2.8	1.9	2.6

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

**MS515PYA223MSZ**

**Testing: Z** = Unscreened

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

All screening performed to the document's latest revision

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

3. DCR measured on a micro-ohmmeter.

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

5. DC current at 25°C that causes a 30% (typ) inductance drop 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.

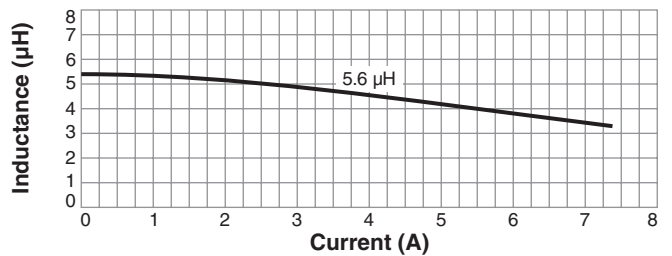
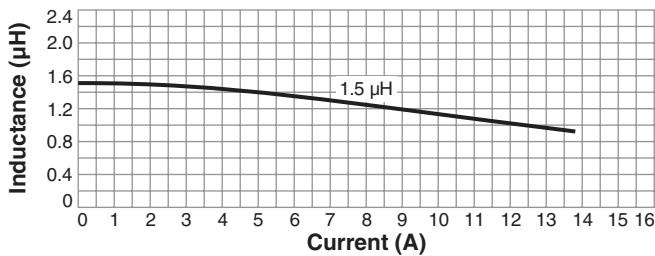
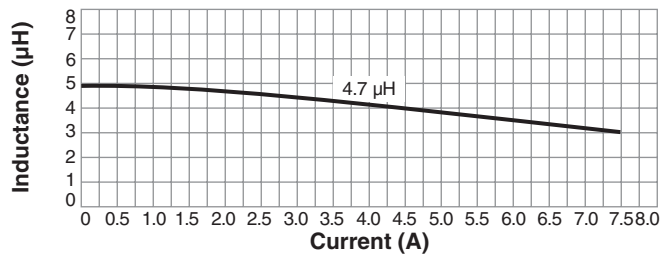
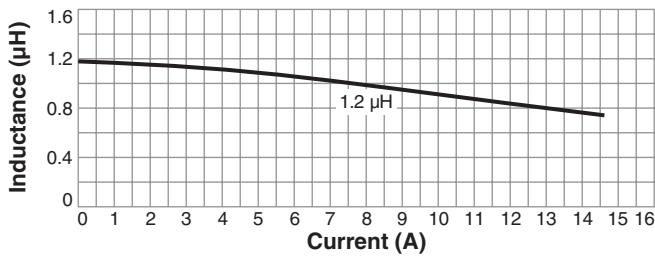
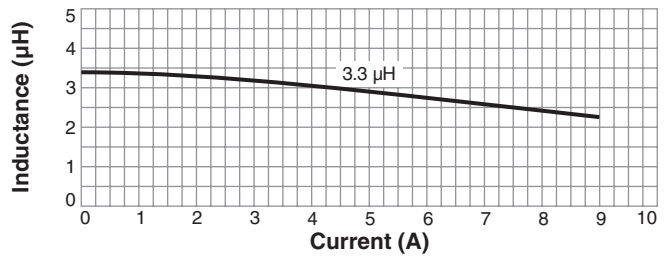
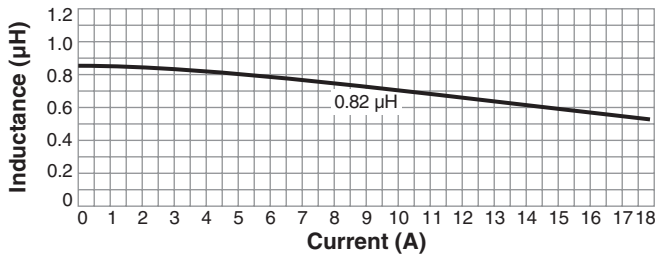
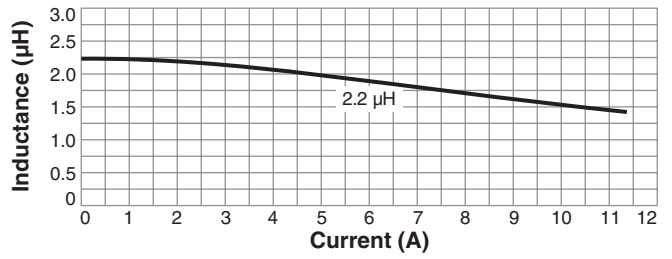
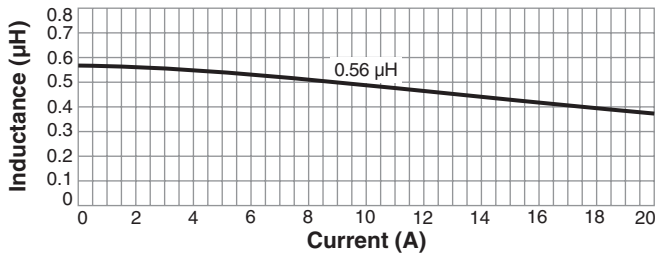
## Irms Testing

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.

# MS515PYA Series (5050)

## Typical L vs Current



CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

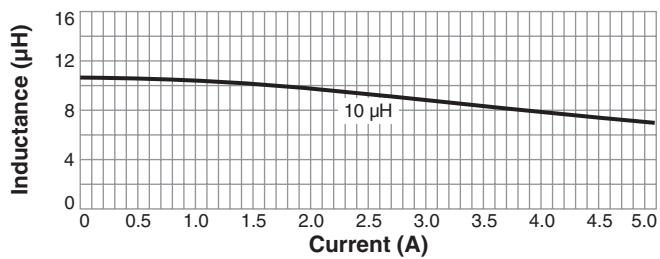
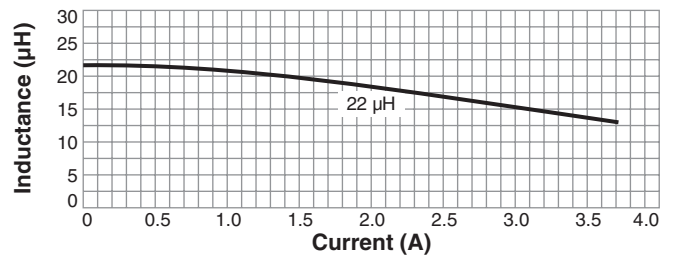
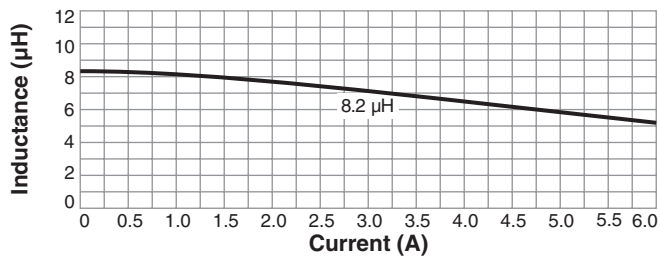
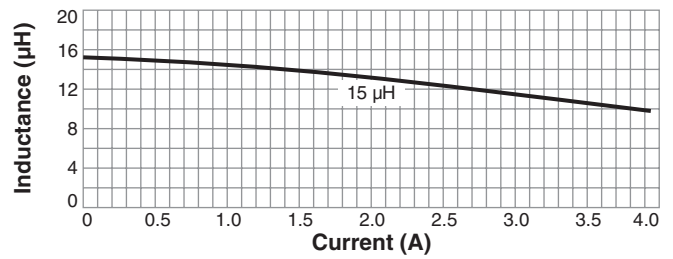
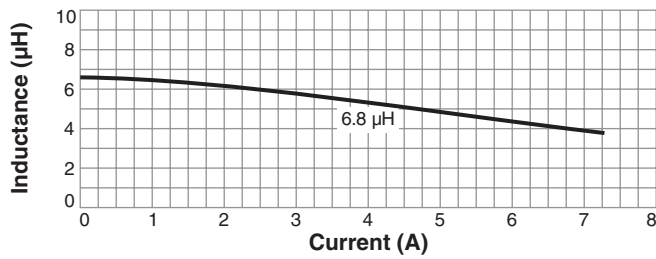
Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

Document MS793-2 Revised 09/05/17

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.

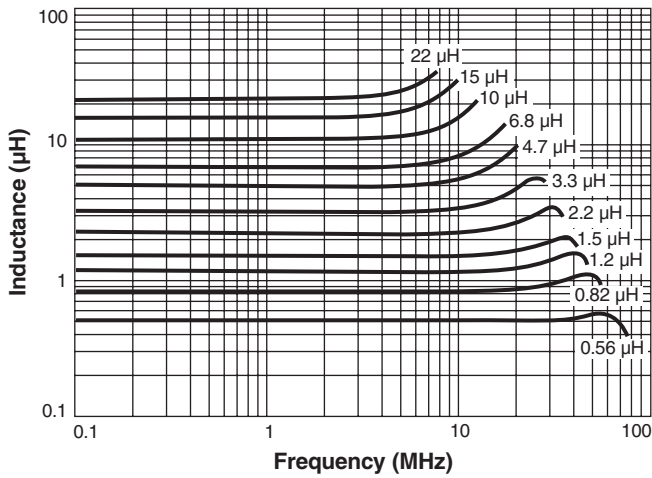
# MS515PYA Series (5050)

## Typical L vs Current

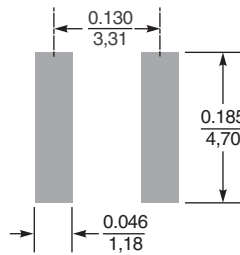
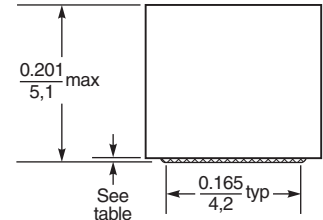
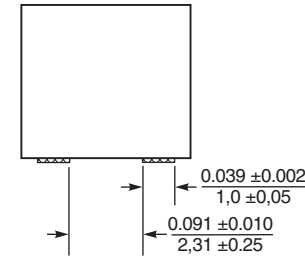
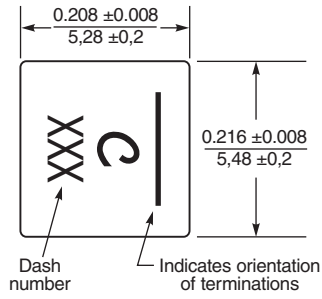
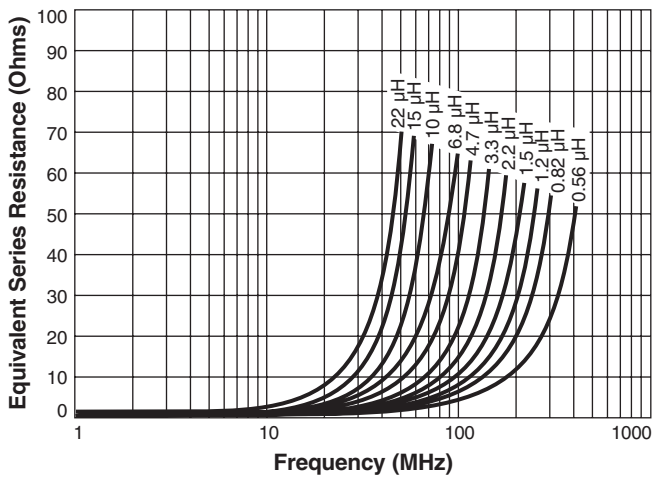


# MS515PYA Series (5050)

## Typical L vs Frequency



## Typical ESR vs Frequency



**Suggested Land Pattern**

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

Dash number	Terminal thickness (typ) (in / mm)
-561	0.0079 / 0.20
-821	0.0079 / 0.20
-122	0.0079 / 0.20
-152	0.0079 / 0.20
-222	0.0079 / 0.20
-332	0.0047 / 0.12
-472	0.0047 / 0.12
-562	0.0047 / 0.12
-682	0.0047 / 0.12
-822	0.0047 / 0.12
-103	0.0039 / 0.10
-153	0.0028 / 0.07
-223	0.0028 / 0.07



1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

© Coilcraft, Inc. 2017

Fax 847-639-1508  
Email cps@coilcraft.com  
www.coilcraft-cps.com

Document MS793-4 Revised 09/05/17

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.