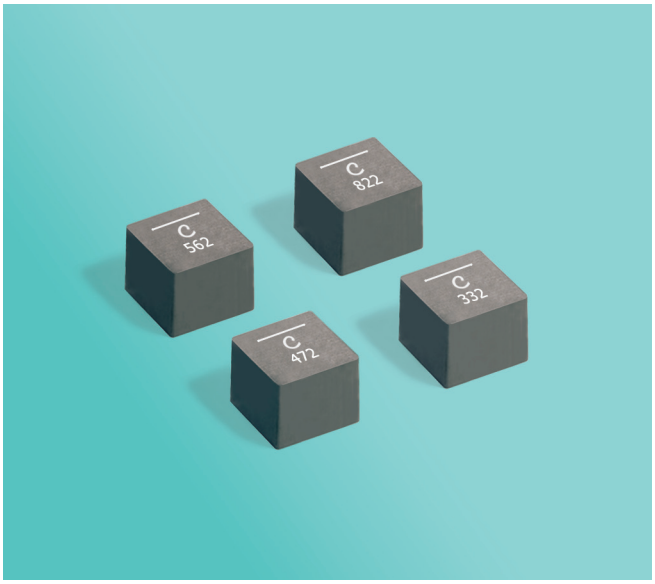
High-Reliability Power Inductors MS515PYA



- 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 102 – 107 mg

Ambient temperature –55°C to +105°C with Irms current, +105°C to +155°C with derated current

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[1]	Inductance[2] ±20% (µH)	DCR (mOhms)[3] typ	DCR (mOhms)[3] max	SRF (MHz)[4] min	SRF (MHz)[4] typ	Isat (A)[5]	Irms (A)[6] 20°C rise	Irms (A)[6] 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 = COTS
   H = Screening per Coilcraft CP-SA-10001
   N = Screening per Coilcraft CP-SA-10004
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. Typical dc current at which the inductance drops 30% from its value without current.
6. Typical current that causes the specified temperature rise from 25°C ambient.
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.

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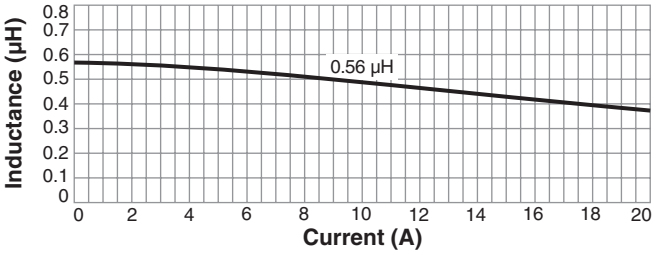
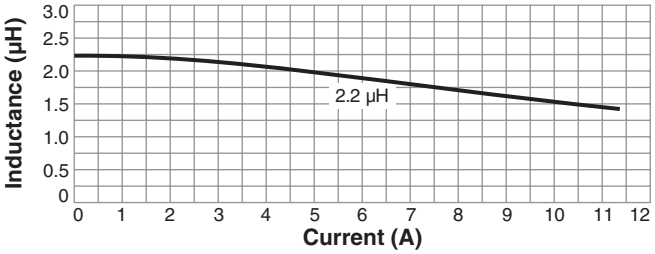
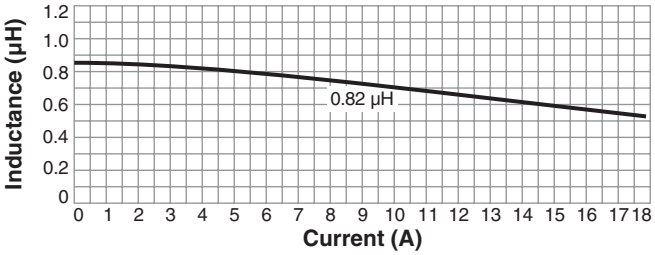
Document MS793-1 Revised 07/20/12

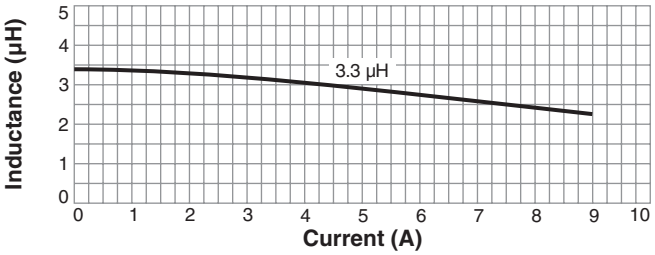
MS515PYA Series (5050)

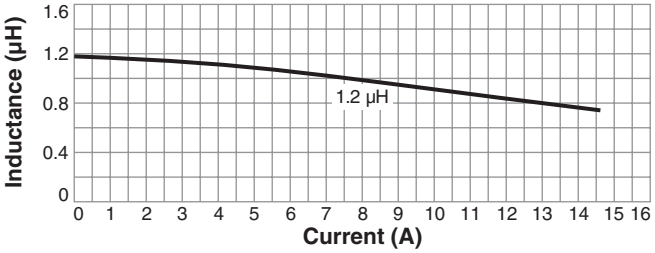
Typical L vs Current

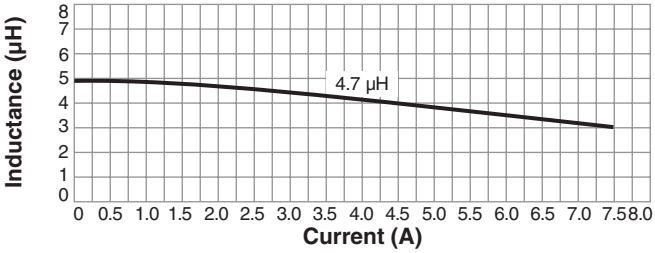


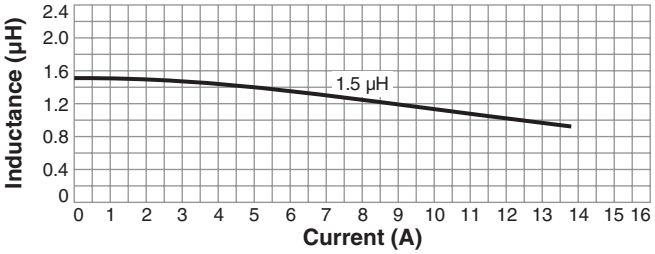


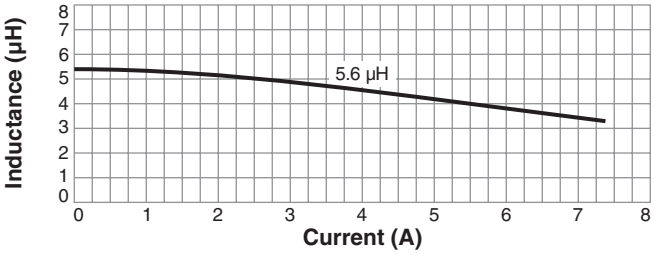












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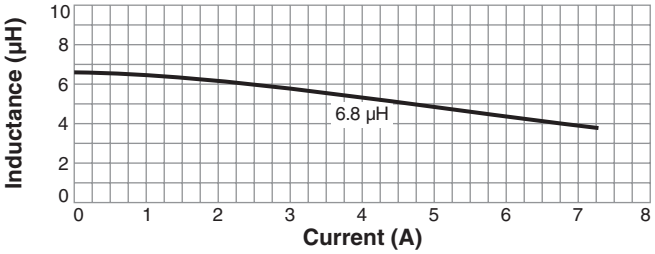
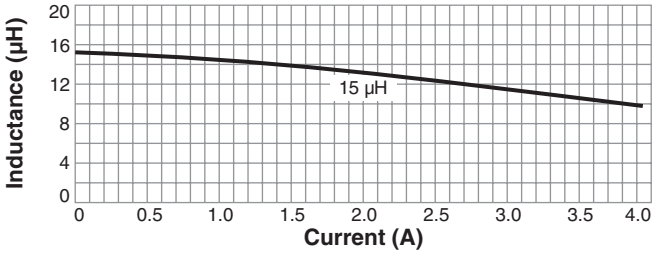
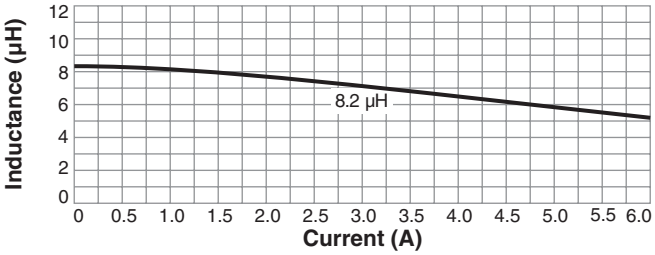
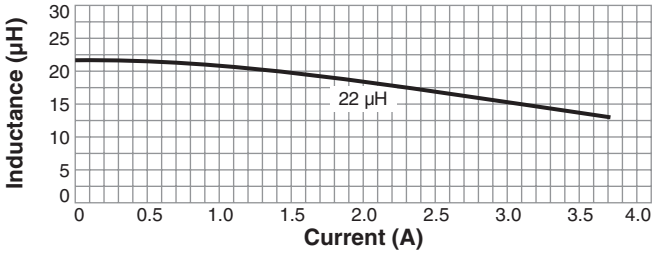
MS515PYA Series (5050)

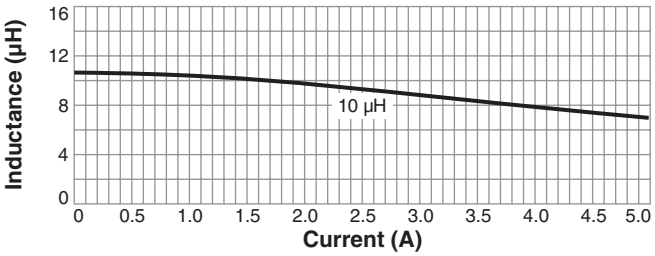
Typical L vs Current











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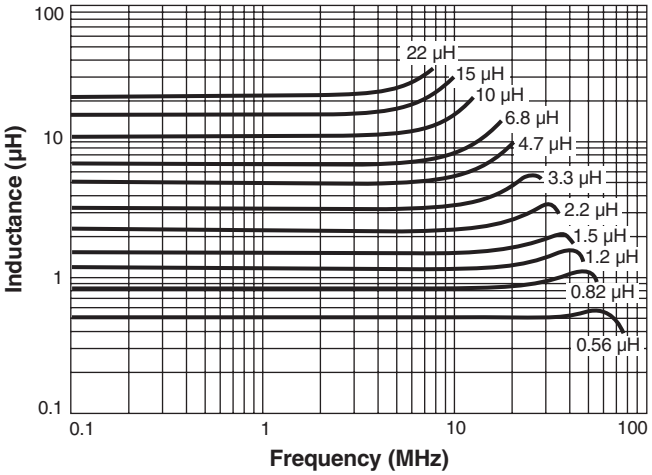
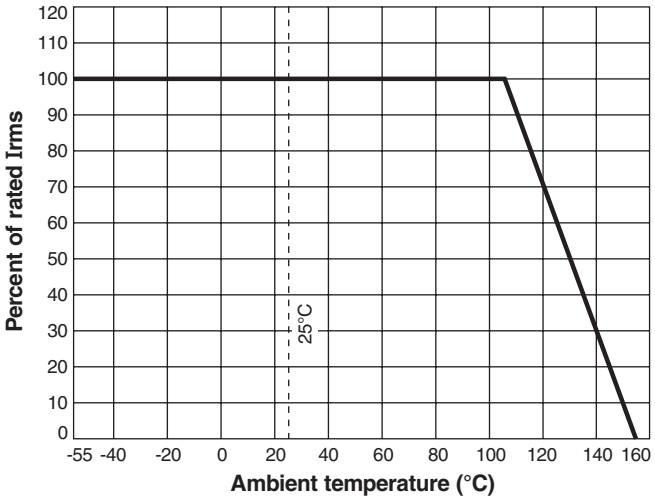
MS515PYA Series (5050)

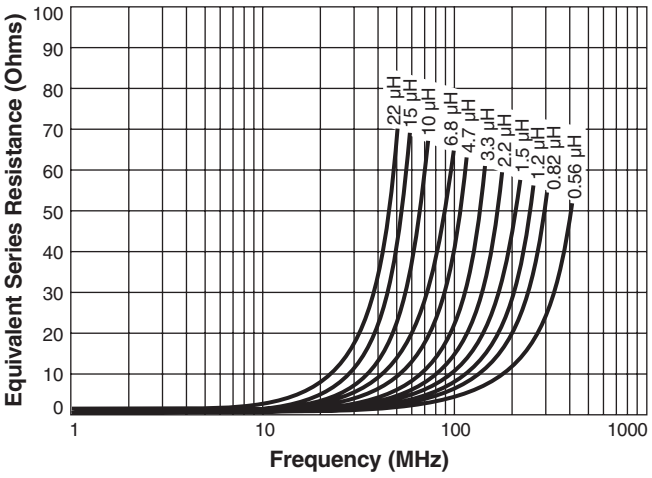
Typical L vs Frequency

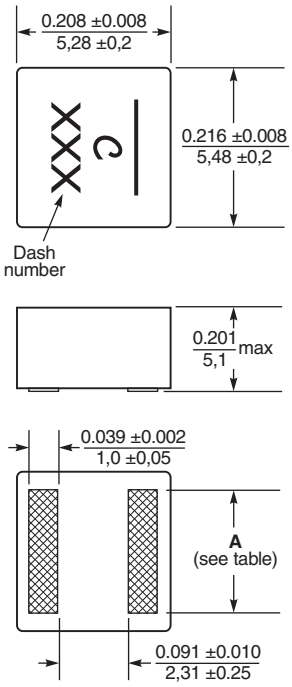


Irms Derating

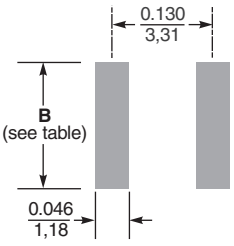


Typical ESR vs Frequency





Dash number	A ±0.008 in ±0,20 mm (in / mm)	B (in / mm)
-561	0.175 / 4.44	0.183 / 4.64
-821	0.175 / 4.44	0.183 / 4.64
-122	0.175 / 4.44	0.183 / 4.64
-152	0.175 / 4.44	0.183 / 4.64
-222	0.175 / 4.44	0.183 / 4.64
-332	0.168 / 4.28	0.173 / 4.40
-472	0.168 / 4.28	0.173 / 4.40
-562	0.168 / 4.28	0.173 / 4.40
-682	0.168 / 4.28	0.173 / 4.40
-822	0.168 / 4.28	0.173 / 4.40
-103	0.167 / 4.24	0.171 / 4.34
-153	0.165 / 4.18	0.167 / 4.25
-223	0.165 / 4.18	0.167 / 4.25



Suggested Land Pattern

Dimensions are in inches / mm

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