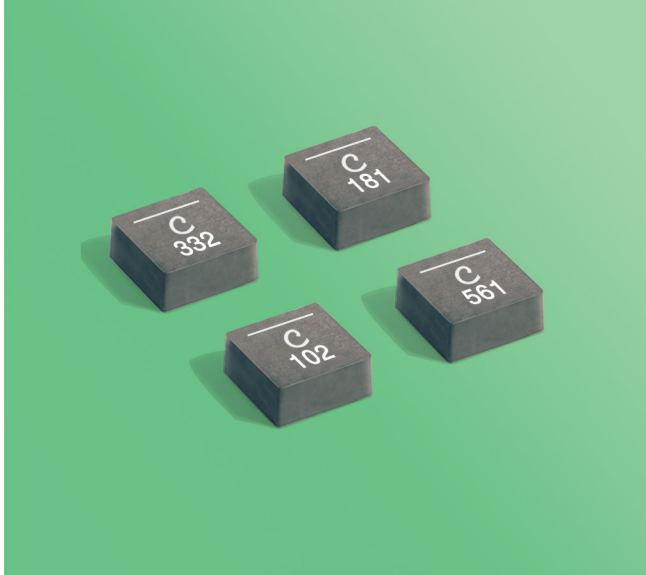


High Reliability Power Inductors MS512PYA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- Passes vibration testing to 80 G and shock testing to 1000 G
- Exceptionally low DCR; soft saturation

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

Core material Composite

Weight 0.6 – 0.7 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 400/7" reel

Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.12 mm pocket depth

Part number ¹	Inductance ² ±20% (µH)	DCR (mOhms) ³		SRF (MHz) ⁴		Isat (A) ⁵	Irms (A) ⁶	
		typ	max	min	typ		20°C rise	40°C rise
MS512PYA181MSZ	0.18	1.59	1.75	113	141	39	18.0	24.0
MS512PYA331MSZ	0.33	2.30	2.53	71	89	30	15.0	18.8
MS512PYA561MSZ	0.56	3.01	3.31	49	61	29	12.0	16.5
MS512PYA102MSZ	1.0	5.62	6.18	40	50	23	9.8	13.5
MS512PYA122MSZ	1.2	6.82	7.50	34	43	22	9.0	12.0
MS512PYA182MSZ	1.8	9.57	10.52	27	34	18.2	7.6	10.5
MS512PYA222MSZ	2.2	12.70	13.97	24	30	15.9	5.3	7.5
MS512PYA332MSZ	3.3	19.92	20.81	21	26	12.2	4.5	6.0

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

MS512PYA332MSZ

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, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an 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.

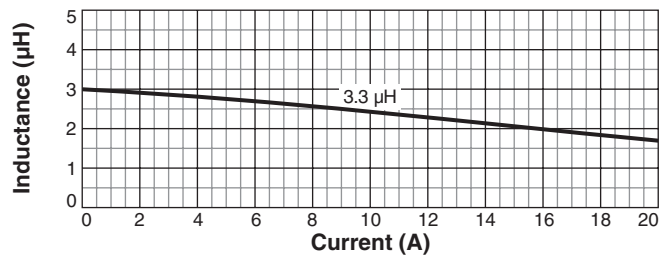
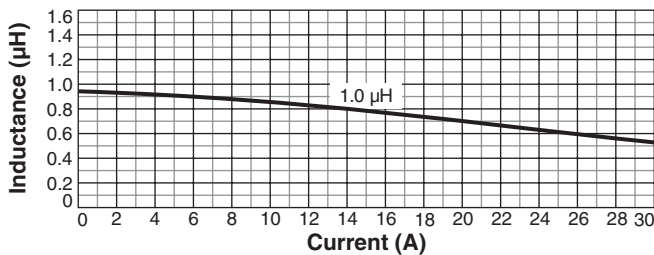
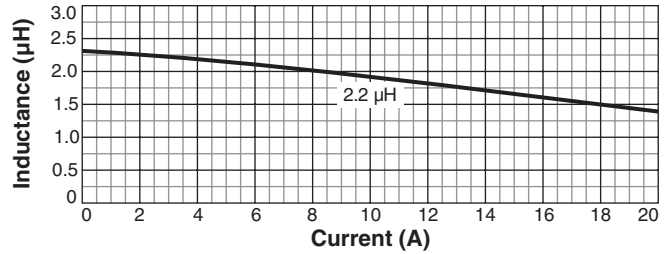
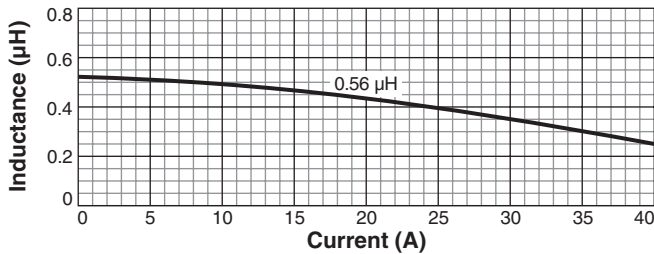
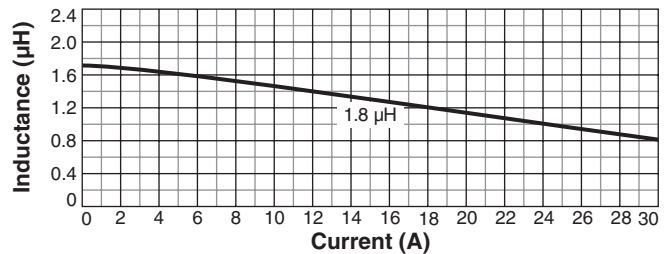
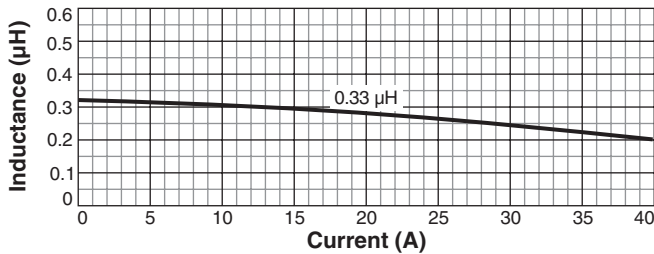
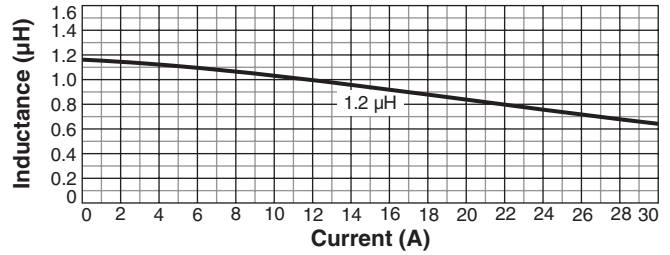
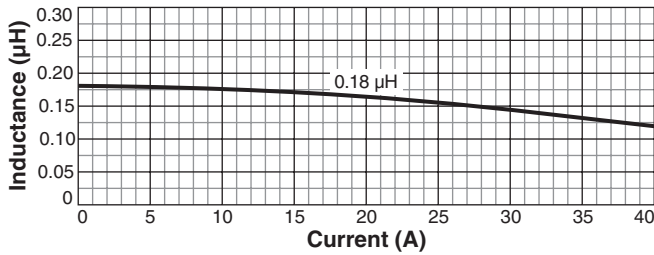
Irms Testing

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.

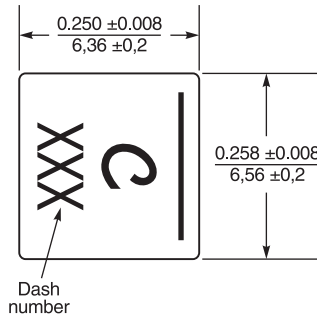
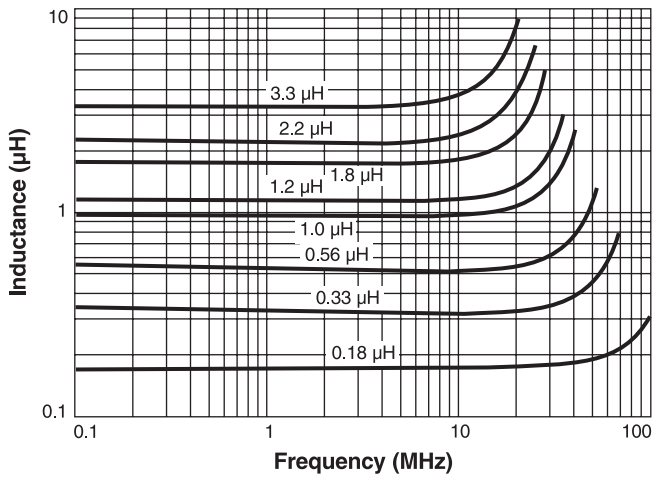
MS512PYA Series

L vs Current



MS512PYA Series

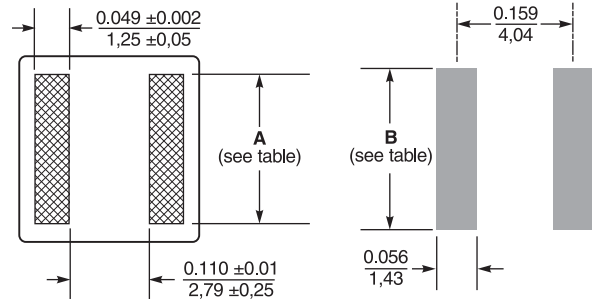
L vs Frequency



Dash number	A ±0.008 in ±0.20 mm (in / mm)	B (in / mm)
-181	0.213 / 5.42	0.224 / 5.69
-331	0.213 / 5.42	0.224 / 5.69
-561	0.213 / 5.42	0.224 / 5.69
-102	0.206 / 5.24	0.213 / 5.42
-122	0.206 / 5.24	0.213 / 5.42
-182	0.204 / 5.18	0.210 / 5.33
-222	0.201 / 5.12	0.206 / 5.24
-332	0.200 / 5.08	0.204 / 5.18



Suggested Land Pattern



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

* Height dimension shown is for the mounted part after reflow. Dimension before mounting can be an additional 0.008 inch / 0.2 mm.