

High Reliability Power Inductors MS611PYA



- High temperature materials allow operation in ambient temperatures up to 155°C
- 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 5.7 – 6.3 g

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 300/13" reel
Plastic tape: 24 mm wide, 0.4 mm thick, 16 mm pocket spacing, 10.21 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
MS611PYA221MSZ	0.22	0.33	0.37	92	115	98.8	30.8	41.6
MS611PYA451MSZ	0.45	0.60	0.66	53	66	70.5	30.0	39.8
MS611PYA102MSZ	1.0	1.00	1.10	34	42	55.0	24.0	32.6
MS611PYA152MSZ	1.5	1.60	1.76	26	33	36.6	23.3	30.4
MS611PYA222MSZ	2.2	2.55	2.80	18	22	34.0	18.4	24.0
MS611PYA332MSZ	3.3	3.70	4.10	17	21	27.4	13.7	18.8
MS611PYA472MSZ	4.7	5.20	5.70	15	19	25.4	13.1	18.0
MS611PYA562MSZ	5.6	6.30	6.93	13	16	23.6	11.8	15.9
MS611PYA682MSZ	6.8	8.10	8.90	11	14	21.8	10.5	13.9
MS611PYA822MSZ	8.2	11.70	12.90	9	12	18.3	9.7	12.8
MS611PYA103MSZ	10	13.40	14.75	8	11	17.5	8.6	11.6
MS611PYA153MSZ	15	16.90	18.60	7	9	15.5	7.4	10.4

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

MS611PYA682MSZ

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, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an 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.

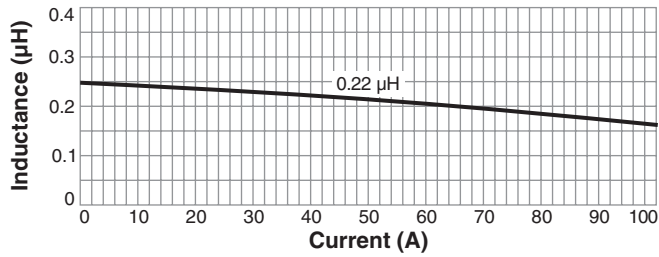
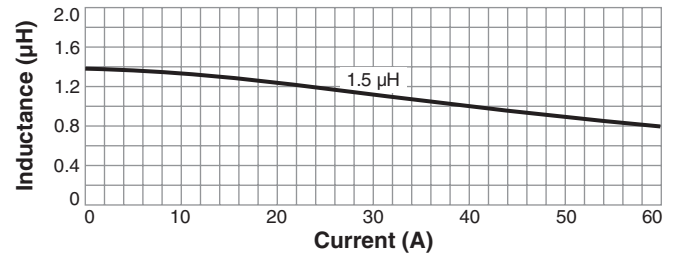
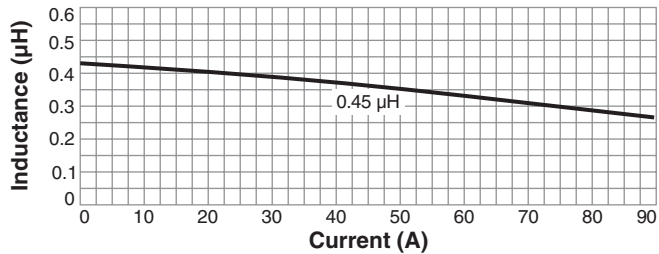
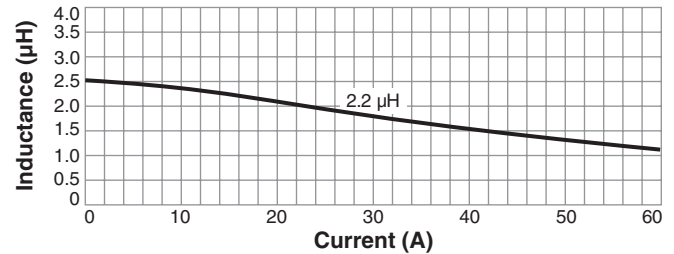
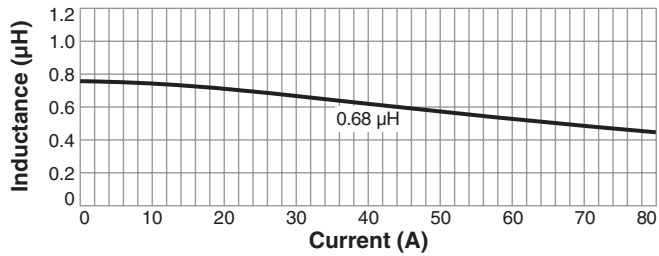
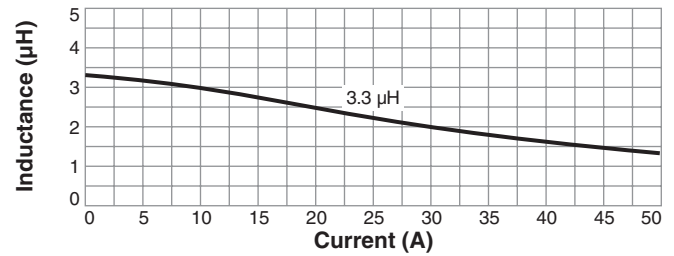
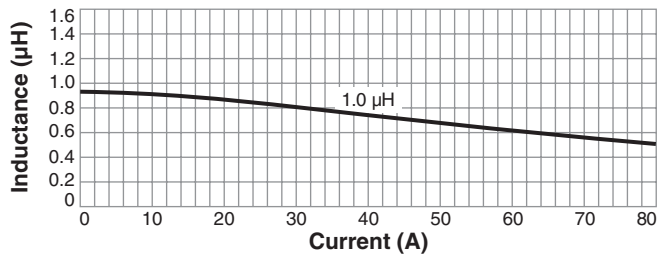
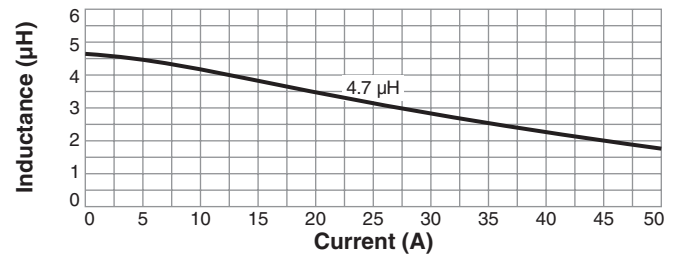
Irms Testing

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.

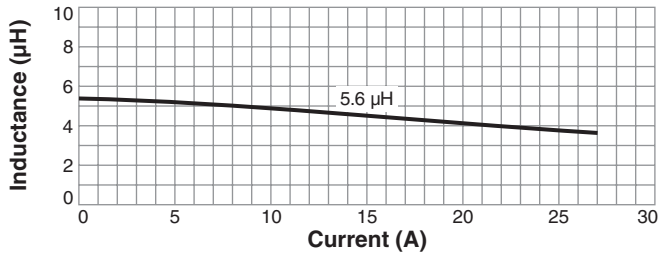
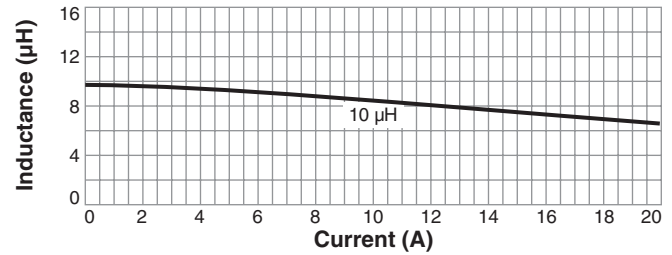
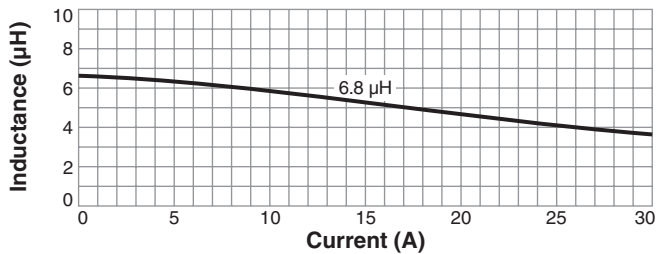
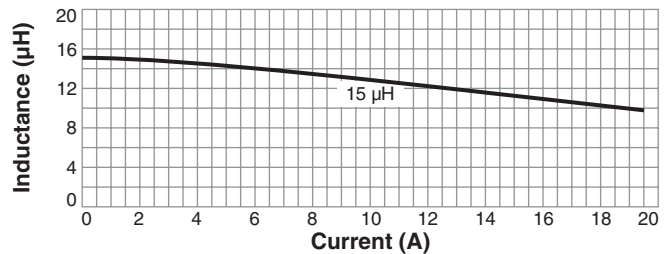
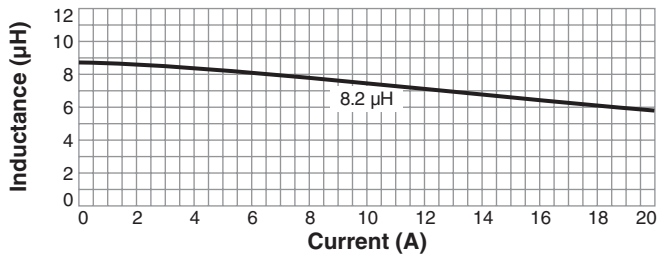
MS611PYA Series (1010)

Typical L vs Current



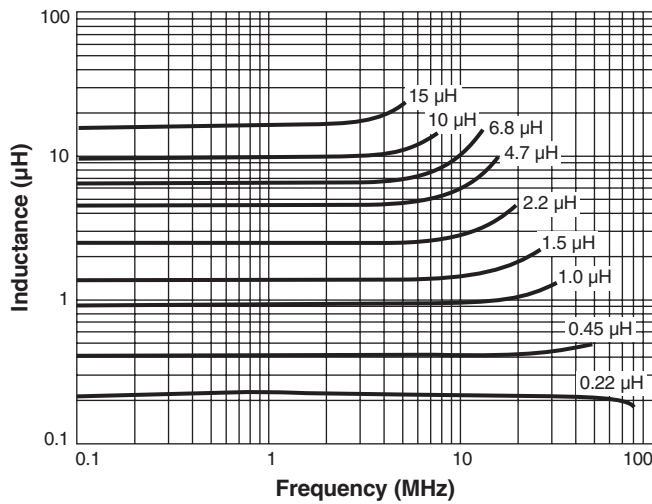
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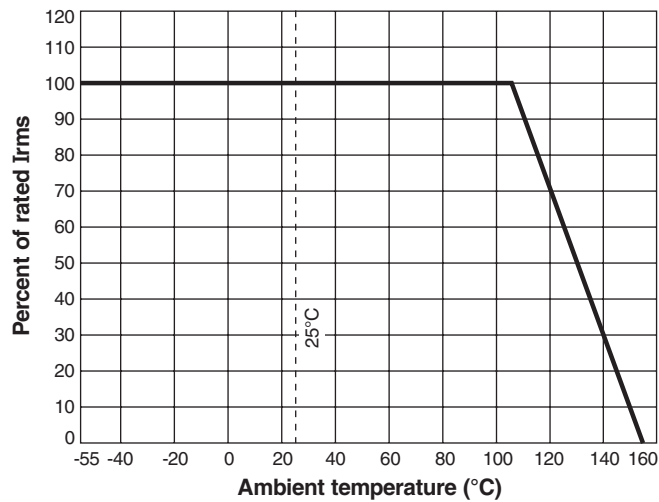
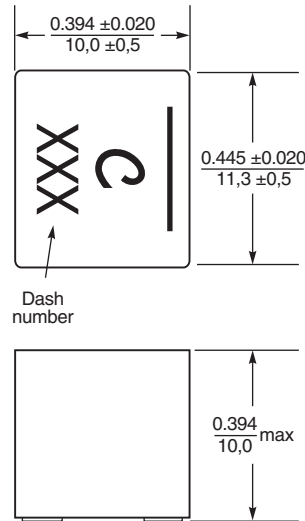


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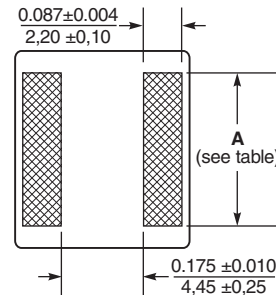
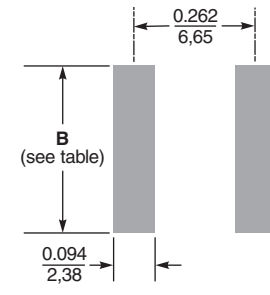
Typical L vs Frequency



Irms Derating



Dash number	A ± 0.008 in ± 0.20 mm (in / mm)	B (in / mm)
-221	0.406 / 10.31	0.445 / 11.31
-451	0.406 / 10.31	0.445 / 11.31
-681	0.406 / 10.31	0.445 / 11.31
-102	0.406 / 10.31	0.445 / 11.31
-152	0.390 / 9.91	0.421 / 10.71
-222	0.374 / 9.51	0.398 / 10.11
-332	0.358 / 9.11	0.374 / 9.51
-472	0.358 / 9.11	0.374 / 9.51
-562	0.358 / 9.11	0.374 / 9.51
-682	0.351 / 8.91	0.362 / 9.21
-822	0.343 / 8.71	0.351 / 8.91
-103	0.343 / 8.71	0.351 / 8.91
-153	0.343 / 8.71	0.351 / 8.91



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

Suggested Land Pattern