

# Outgassing Compliant Power Inductors AE611PYA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Passes NASA low outgassing specifications
- 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** 5.2 – 7.0 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** 300/13" reel  
Plastic tape: 24 mm wide, 0.4 mm thick, 16 mm pocket spacing, 10.21 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
AE611PYA221MSZ	0.22	0.45	0.50	92	115	98.8	30.8	41.6
AE611PYA451MSZ	0.45	0.65	0.72	53	66	70.5	30.0	39.8
AE611PYA681MSZ	0.68	0.87	0.96	42	53	62.0	28.5	37.5
AE611PYA102MSZ	1.0	1.00	1.10	34	42	55.0	24.0	32.6
AE611PYA152MSZ	1.5	1.60	1.76	26	33	36.6	23.3	30.4
AE611PYA222MSZ	2.2	2.55	2.80	18	22	34.0	18.4	24.0
AE611PYA332MSZ	3.3	3.70	4.10	17	21	27.4	13.7	18.8
AE611PYA472MSZ	4.7	5.20	5.70	15	19	25.4	13.1	18.0
AE611PYA562MSZ	5.6	6.30	6.93	13	16	23.6	11.8	15.9
AE611PYA682MSZ	6.8	8.10	8.90	11	14	21.8	10.5	13.9
AE611PYA822MSZ	8.2	11.70	12.90	9	12	18.3	9.7	12.8
AE611PYA103MSZ	10	13.40	14.75	8	11	17.5	8.6	11.6
AE611PYA153MSZ	15	16.90	18.60	7	9	15.5	7.4	10.4

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

**AE611PYA682MSZ**

**Testing:** Z = Unscreened  
H = Group A screening per Coilcraft CP-SA-10001  
All screening performed to the document's latest revision  
Custom screening also available

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 an inductance drop of 30% (typ) from its value without current..
6. Current that causes a 30°C 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.

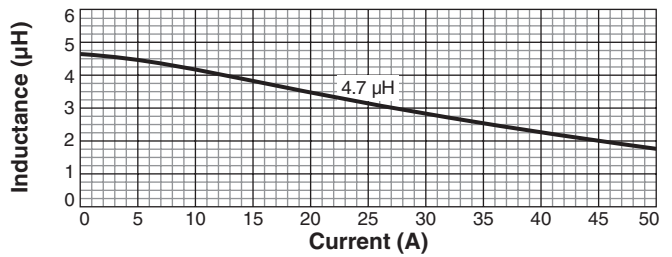
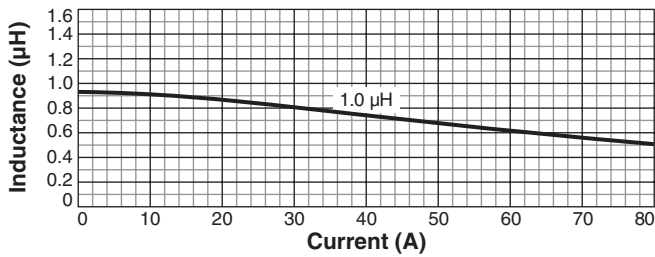
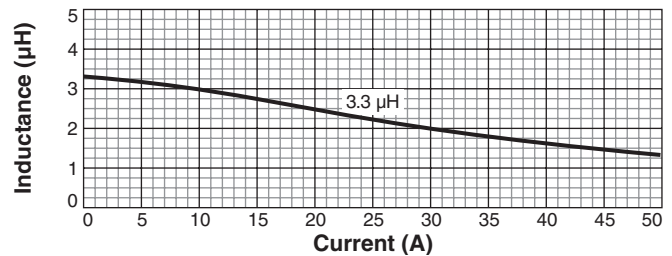
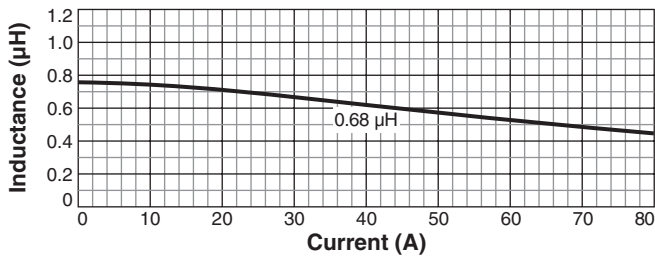
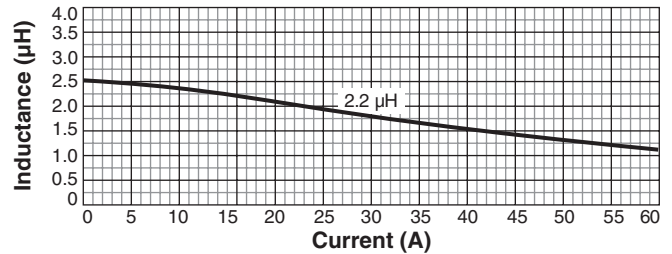
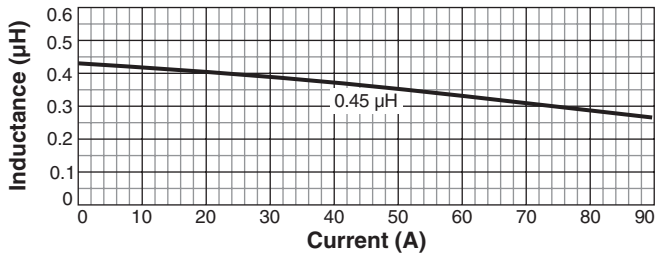
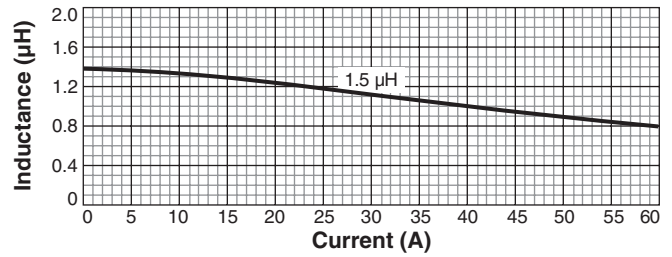
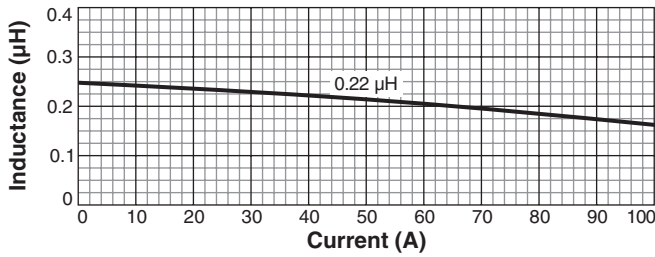
## Irms Testing

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.

# AE611PYA Series (1010)

## Typical L vs Current



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

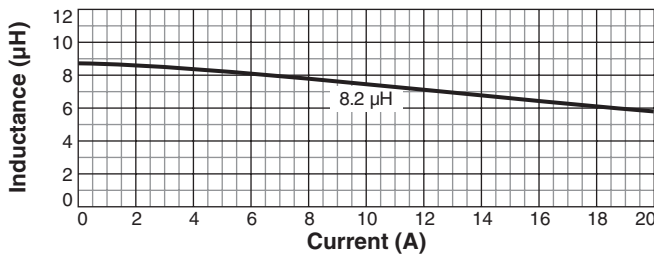
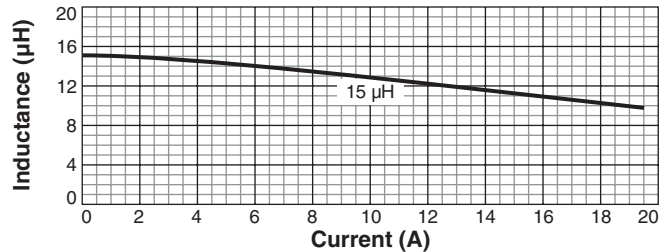
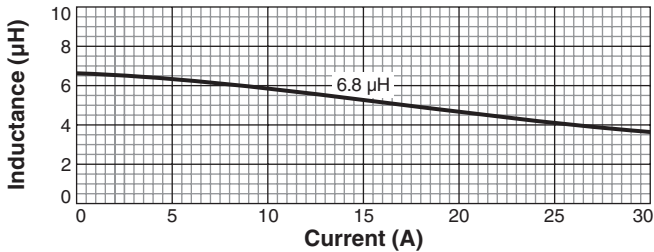
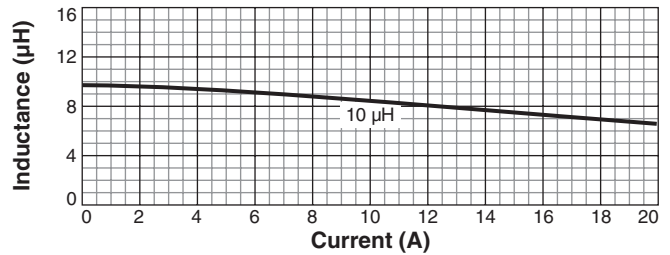
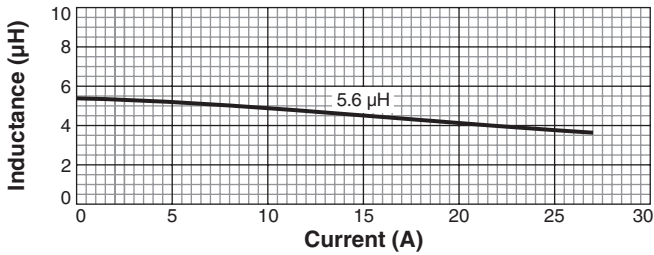
Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

Document AE804-2 Revised 08/09/17

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.

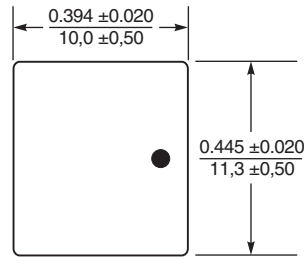
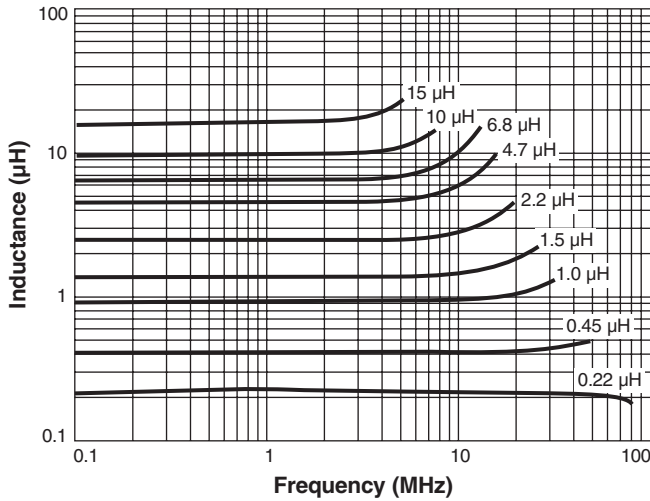
# AE611PYA Series (1010)

## Typical L vs Current

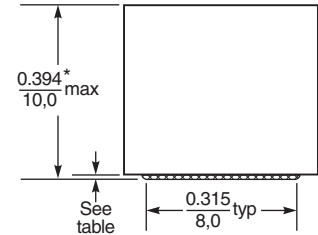
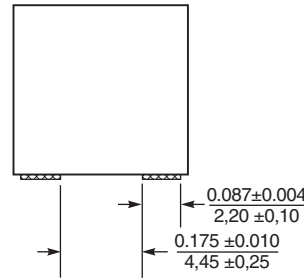


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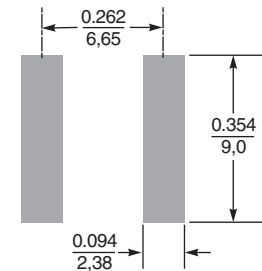
## Typical L vs Frequency



Value	Terminal thickness typ (in / mm)
-221	0.0394 / 1.0
-451	0.0394 / 1.0
-681	0.0394 / 1.0
-102	0.0394 / 1.0
-152	0.0315 / 0.80
-222	0.0236 / 0.60
-332	0.0157 / 0.40
-472	0.0157 / 0.40
-562	0.0157 / 0.40
-682	0.0118 / 0.30
-822	0.0079 / 0.20
-103	0.0079 / 0.20
-153	0.0079 / 0.20



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



**Recommended Land Pattern**

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