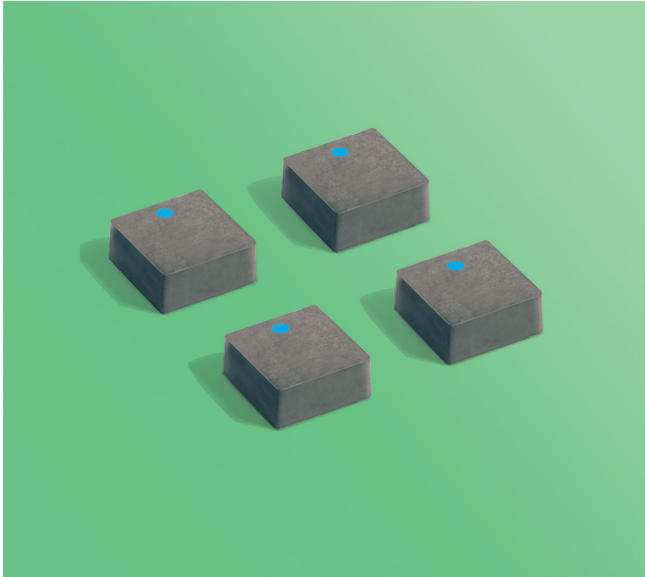


# Outgassing Compliant Power Inductors AE512PYA



- 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
- 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 <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
AE512PYA181MSZ	0.18	1.59	1.75	113	141	39	18.0	24.0
AE512PYA331MSZ	0.33	2.30	2.53	71	89	30	15.0	18.8
AE512PYA561MSZ	0.56	3.01	3.31	49	61	29	12.0	16.5
AE512PYA102MSZ	1.0	5.62	6.18	40	50	23	9.8	13.5
AE512PYA122MSZ	1.2	6.82	7.50	34	43	22	9.0	12.0
AE512PYA182MSZ	1.8	9.57	10.52	27	34	18.2	7.6	10.5
AE512PYA222MSZ	2.2	12.70	13.97	24	30	15.9	5.3	7.5
AE512PYA332MSZ	3.3	19.92	20.81	21	26	12.2	4.5	6.0

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

**AE512PYA332MSZ**

**Testing:** Z = Unscreened

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

T = Screening per MIL-STD-981

U = Screening per EEE-INST-002

F = Screening per ESCC 3201

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 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.

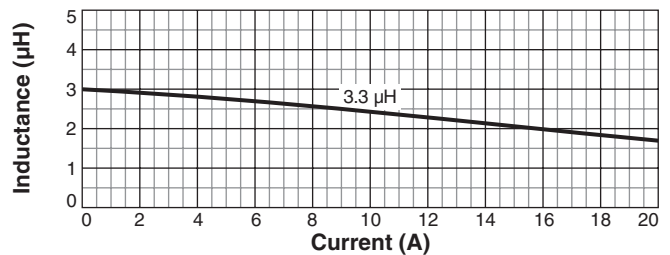
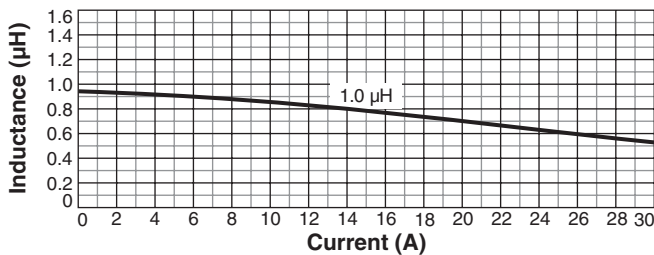
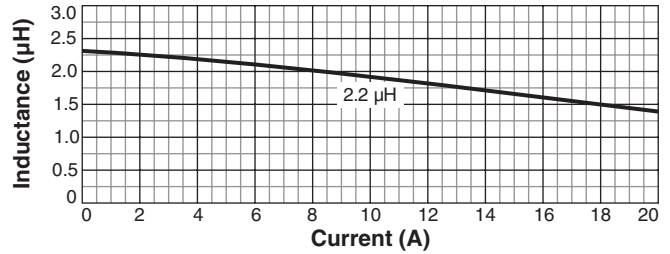
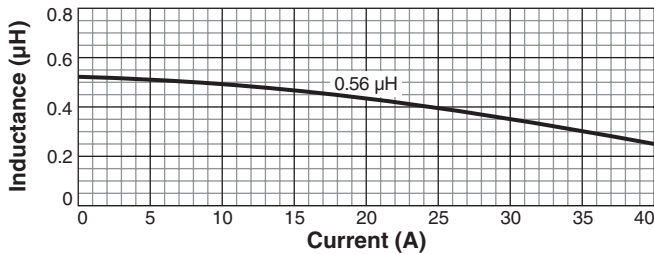
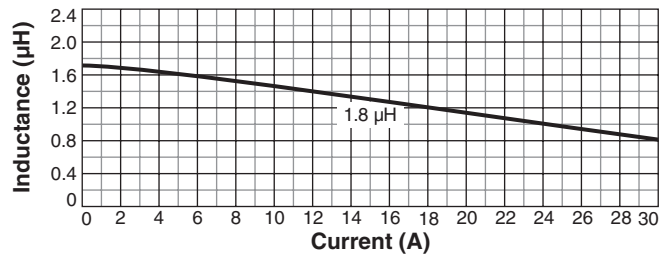
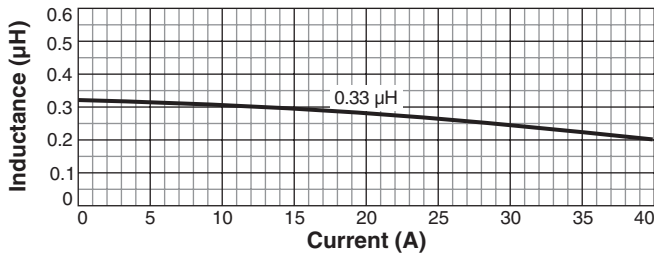
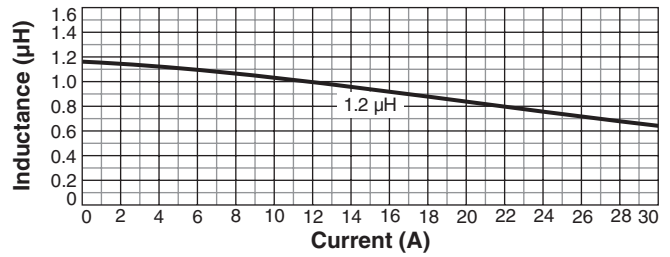
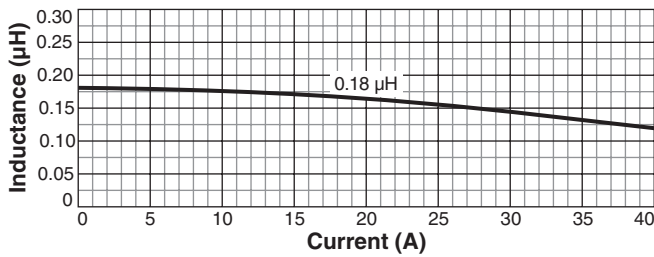
## Irms Testing

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.

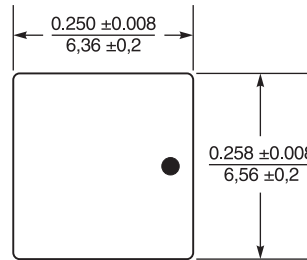
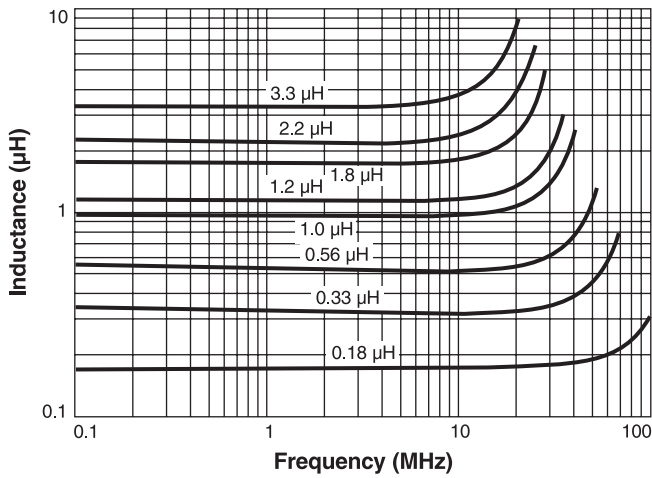
# AE512PYA Series

## L vs Current



# AE512PYA Series

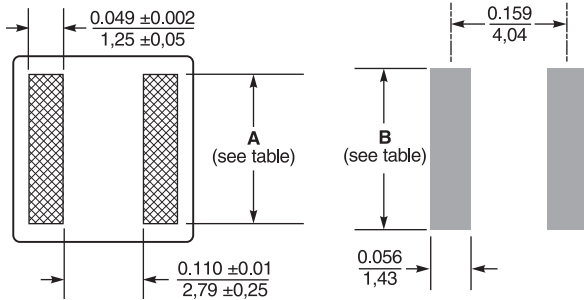
## L vs Frequency



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.