

Outgassing Compliant Power Inductors AE465PYA



- Exceptionally low DCR; soft saturation
- Passes NASA low outgassing specifications
- 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) terminations for the best possible board adhesion

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

Core material Composite

Weight 0.35 – 0.37 g

Ambient temperature –55°C to +115°C with Irms current, +115°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 500/7" reel
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 4.27 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
AE465PYA521MSZ	0.52	4.83	5.31	104	130	13.1	10.0	12.0
AE465PYA681MSZ	0.68	5.74	6.31	80	100	11.6	9.2	11.3
AE465PYA821MSZ	0.82	6.65	7.32	76	95	11.0	8.1	10.2
AE465PYA102MSZ	1.0	7.54	8.29	62	78	10.3	7.8	10.2
AE465PYA152MSZ	1.5	10.3	11.3	55	69	9.4	6.1	8.5
AE465PYA222MSZ	2.2	15.2	16.7	43	54	7.4	4.9	6.8
AE465PYA332MSZ	3.3	26.5	29.2	33	41	5.4	3.7	5.1
AE465PYA472MSZ	4.7	33.7	37.1	26	33	4.9	3.0	4.3
AE465PYA682MSZ	6.8	44.9	49.4	24	30	4.8	2.7	3.5
AE465PYA822MSZ	8.2	60.8	66.9	21	27	4.0	2.3	3.0
AE465PYA103MSZ	10	84.0	92.4	19	24	3.0	2.0	2.7
AE465PYA153MSZ	15	109	120	16	20	2.8	1.7	2.3

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

AE465PYA153MSZ

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.

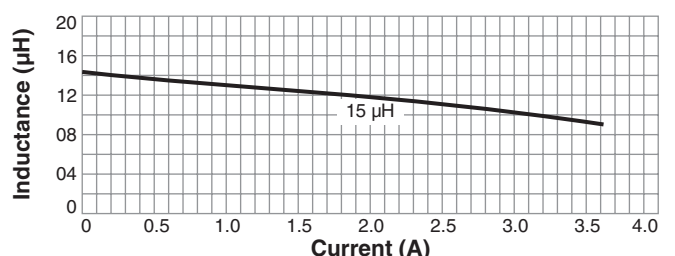
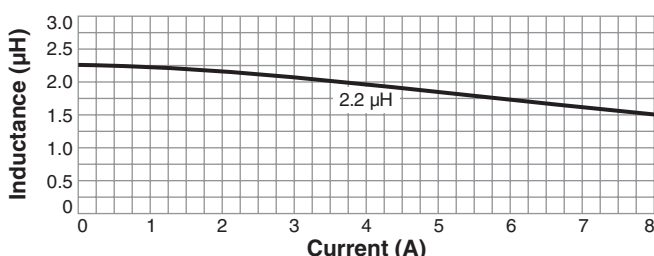
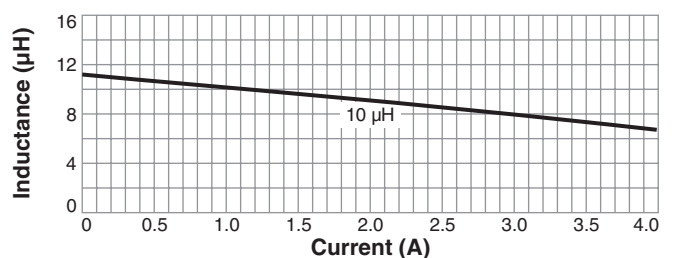
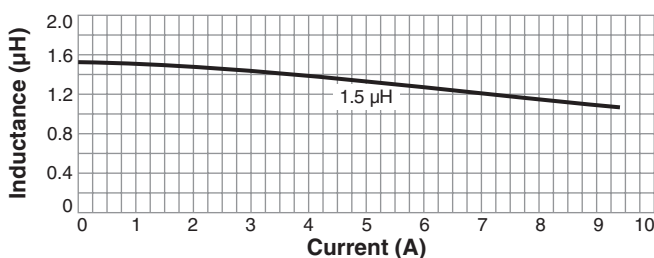
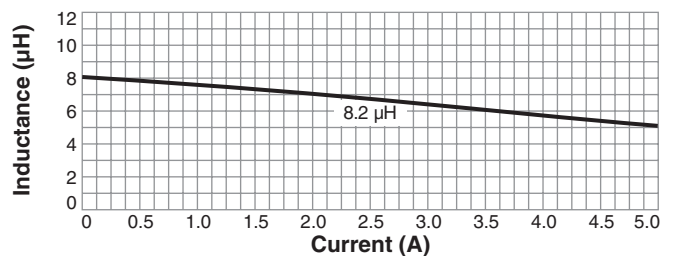
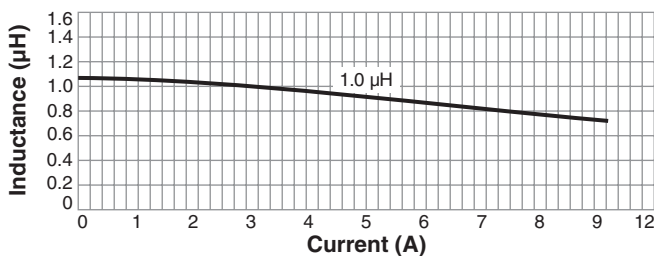
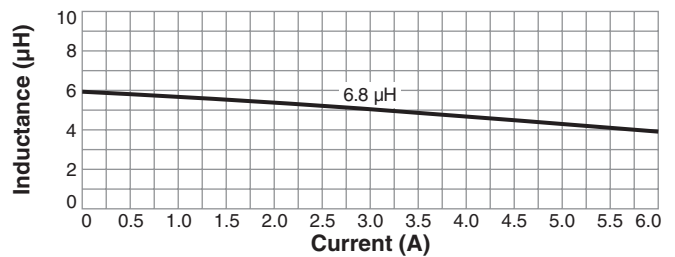
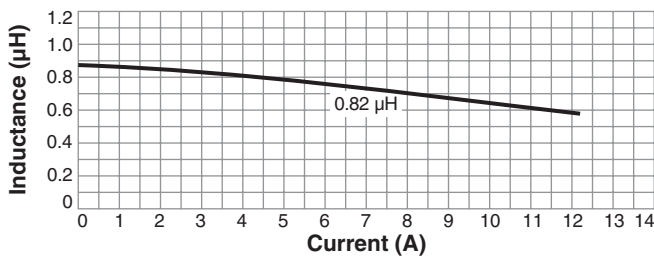
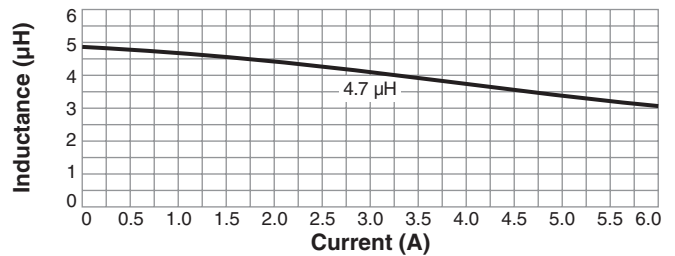
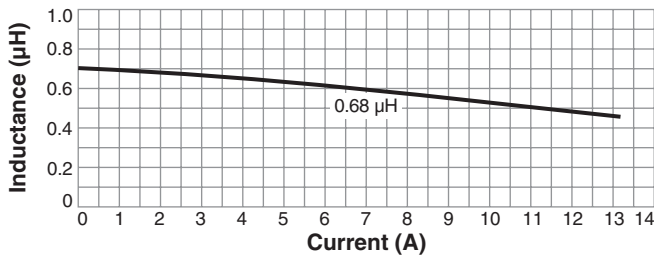
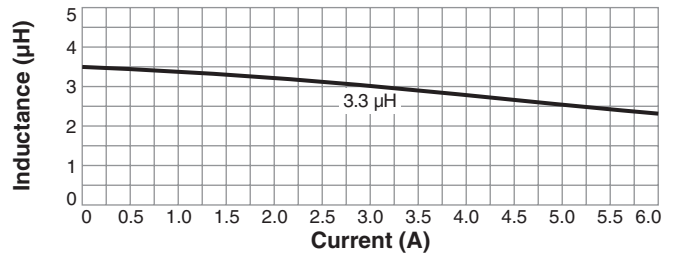
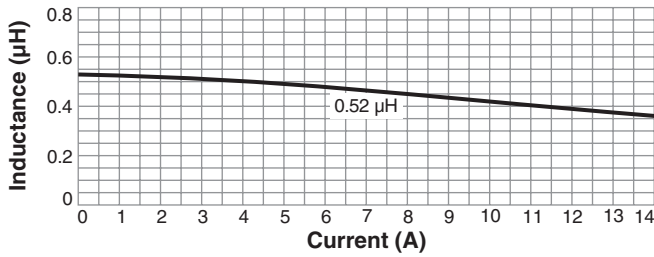
Irms Testing

Irms testing was performed in still air on a 0.060 inch thick pcb with 4 oz copper traces (0.321 inch wide) capable of carrying 22 Amps.

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.

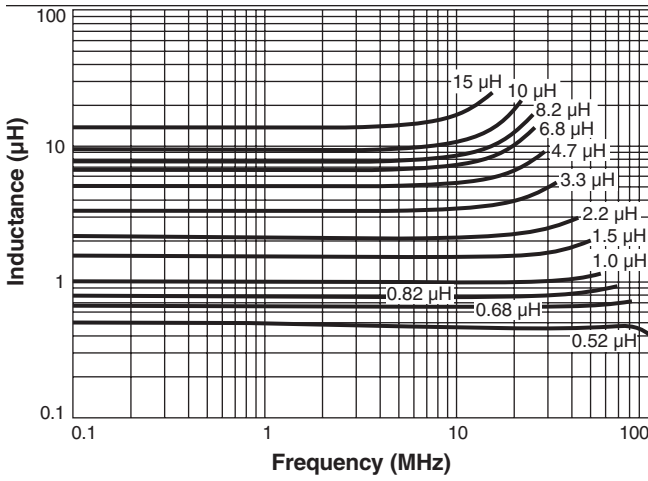
AE465PYA Series

L vs Current

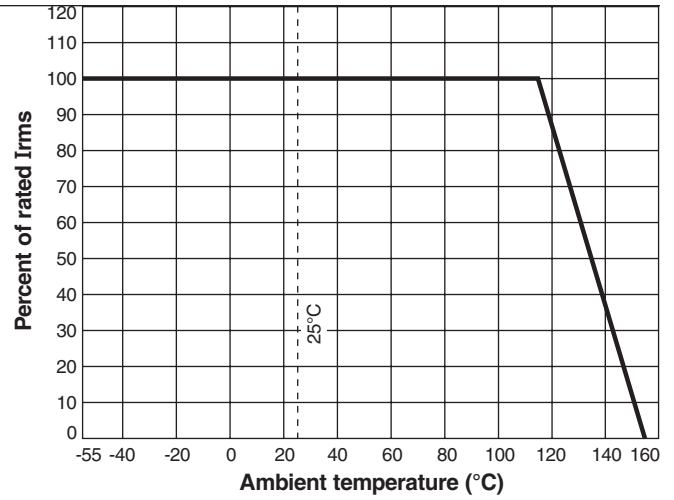


AE465PYA Series

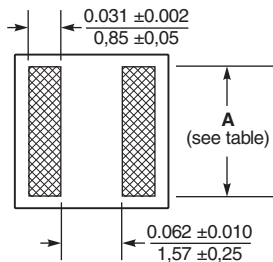
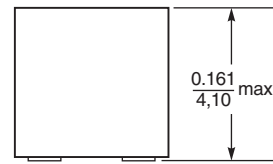
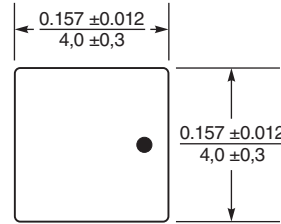
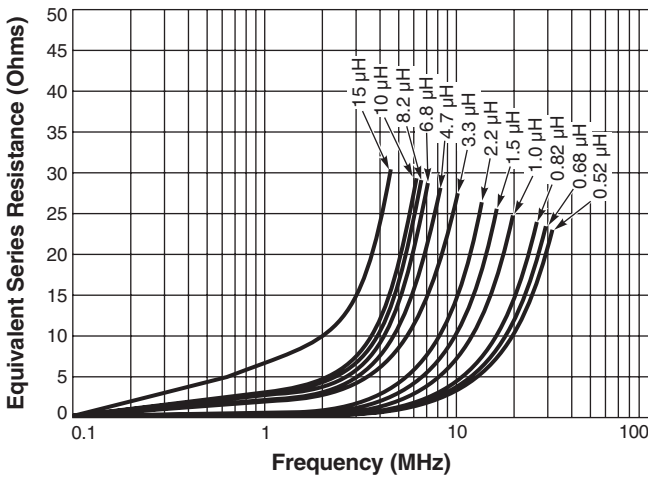
L vs Frequency



Irms Derating

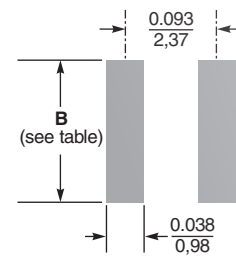


ESR vs Frequency



Dash number	A ±0.008 in ±0.20 mm (in / mm)	B (in / mm)
-521	0.142 / 3.6	0.15 / 3.80
-681	0.142 / 3.6	0.15 / 3.80
-821	0.142 / 3.6	0.15 / 3.80
-102	0.142 / 3.6	0.15 / 3.80
-152	0.142 / 3.6	0.15 / 3.80
-222	0.138 / 3.5	0.144 / 3.65
-332	0.134 / 3.4	0.138 / 3.50
-472	0.134 / 3.4	0.138 / 3.50
-682	0.134 / 3.4	0.138 / 3.50
-822	0.132 / 3.36	0.135 / 3.44
-103	0.131 / 3.32	0.133 / 3.38
-153	0.131 / 3.32	0.133 / 3.38

Suggested Land Pattern



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