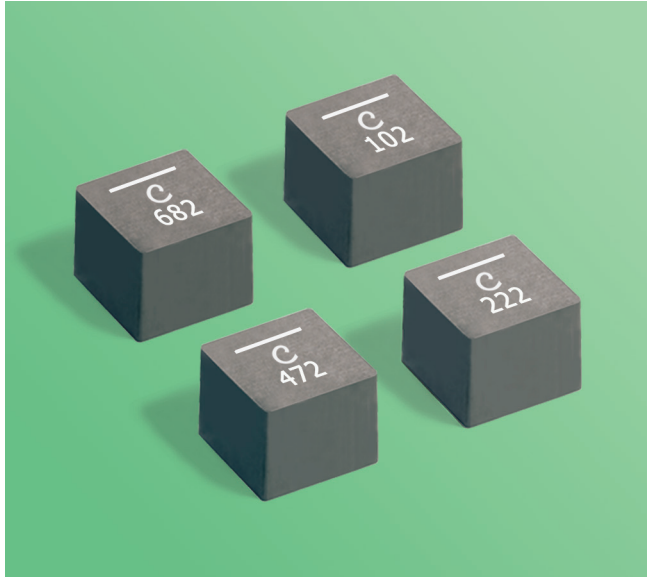


High-Reliability Power Inductors ST541PYA



- High current and very low DCR
- Soft saturation makes them ideal for VRM/VRD applications.
- High temperature materials allow operation in ambient temperatures up to 165°C

Core material Composite

Terminations Tin-silver (96.5/3.5) over copper.

Weight 1.9 – 2.3 g

Ambient temperature –40°C to +125°C with Irms current

Maximum part temperature +165°C (ambient + temp rise).

Storage temperature Component: –55°C to +165°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 150 per 7" reel

Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 7.21 mm pocket depth

Part number ¹	Inductance ² ±20% (µH)	DCR (mOhms) ³		SRF typ (MHz) ⁴	Isat ⁵ (A)	Irms (A) ⁶	
		typ	max			20°C rise	40°C rise
ST541PYA161MLZ	0.16	0.75	0.83	207	78.0	22.9	27.1
ST541PYA301MLZ	0.30	1.06	1.17	135	55.6	19.6	25.1
ST541PYA551MLZ	0.55	1.42	1.56	89	43.0	17.6	21.8
ST541PYA651MLZ	0.65	1.75	1.93	74	40.0	15.8	19.9
ST541PYA801MLZ	0.80	2.08	2.29	67	37.8	15.6	19.4
ST541PYA102MLZ	1.0	2.55	2.81	64	34.8	15.0	18.8
ST541PYA122MLZ	1.2	3.10	3.41	43	31.2	12.2	16.2
ST541PYA182MLZ	1.8	4.05	4.46	43	25.0	11.9	15.8
ST541PYA222MLZ	2.2	5.73	6.33	35	19.6	9.9	13.4
ST541PYA332MLZ	3.3	8.56	9.42	32	19.4	8.7	11.3
ST541PYA472MLZ	4.7	12.96	14.26	26	15.2	7.9	10.2
ST541PYA562MLZ	5.6	13.67	15.03	21	13.0	6.4	8.6
ST541PYA682MLZ	6.8	17.84	19.62	20	12.8	5.1	6.9
ST541PYA103MLZ	10	17.54	20.17	11.5	7.5	5.0	6.8
ST541PYA123MLZ	12	19.33	22.23	11.2	7.4	4.5	6.2
ST541PYA153MLZ	15	25.67	29.52	9.7	7.0	4.1	5.6
ST541PYA183MLZ	18	28.54	32.82	8.9	6.3	3.8	5.1
ST541PYA223MLZ	22	34.51	39.69	8.1	5.6	3.5	4.9
ST541PYA333MLZ	33	53.98	62.08	6.7	4.4	2.7	3.7
ST541PYA473MLZ	47	84.41	97.07	5.7	4.2	2.3	3.1

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.

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

ST541PYA473MLZ

Screening: Z = Unscreened

Y = Unscreened (SLDC Option A)

W = Unscreened (SLDC Option B)

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

G = Coilcraft CP-SA-10001 Group A (SLDC Option A)

D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

All screening performed to the document's latest revision
Custom screening also available

2. Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4192A.

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.

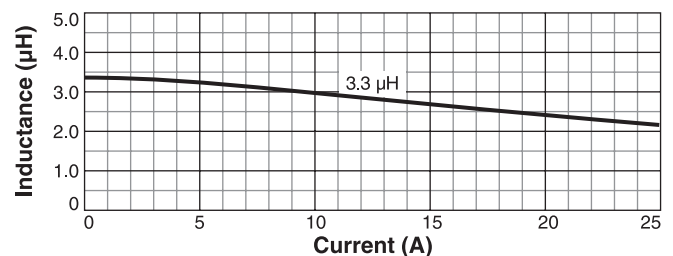
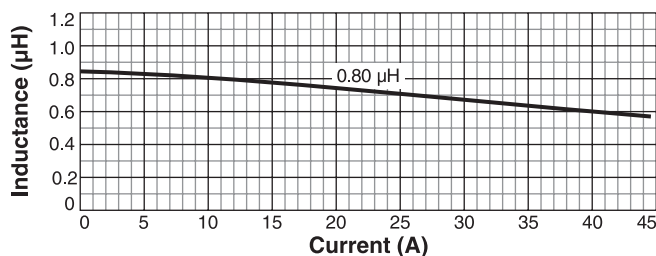
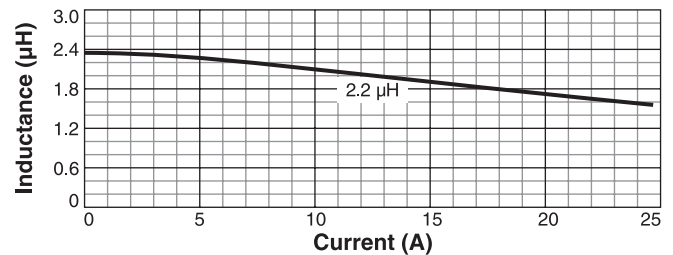
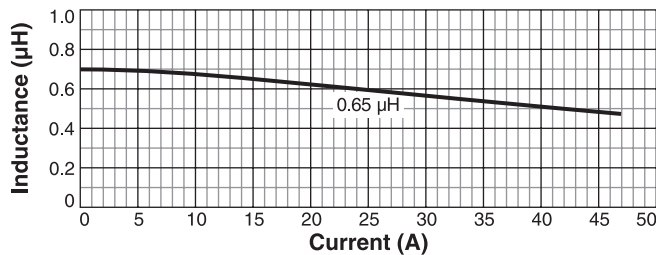
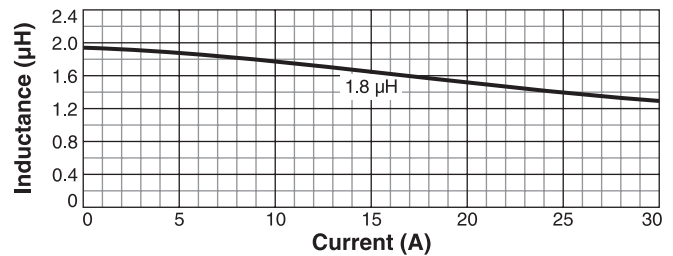
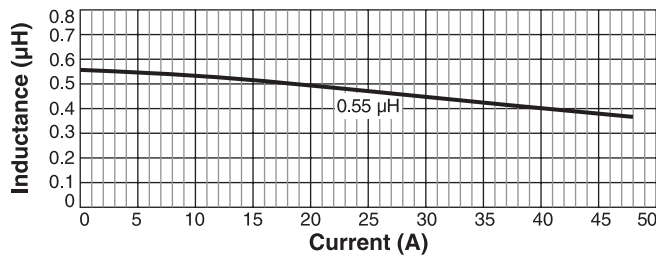
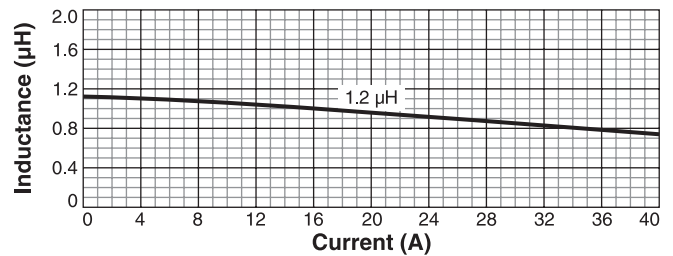
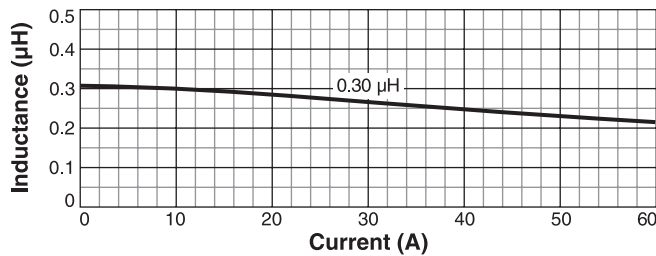
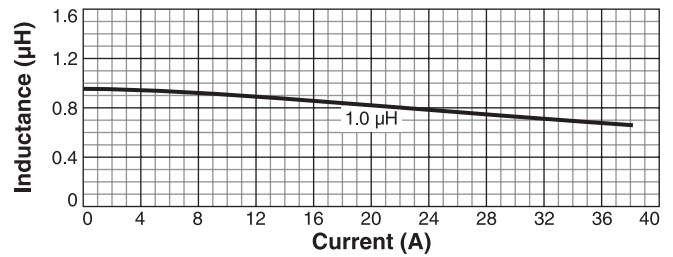
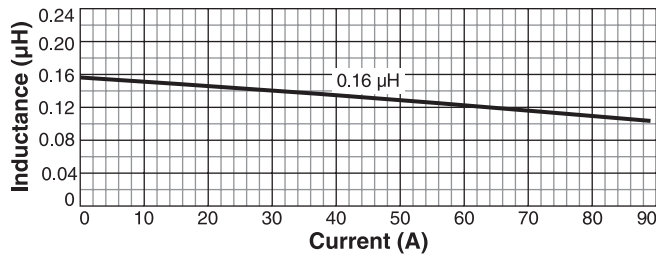
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

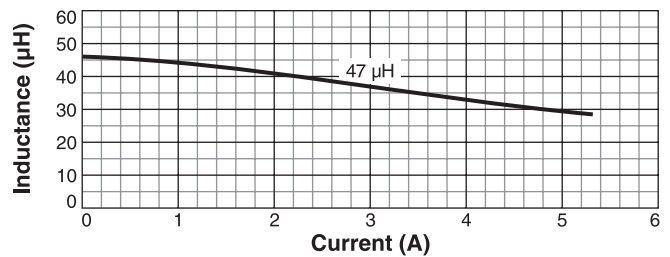
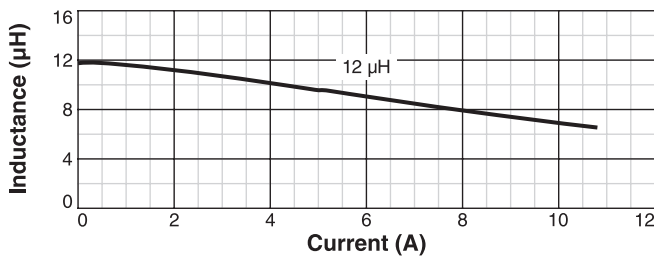
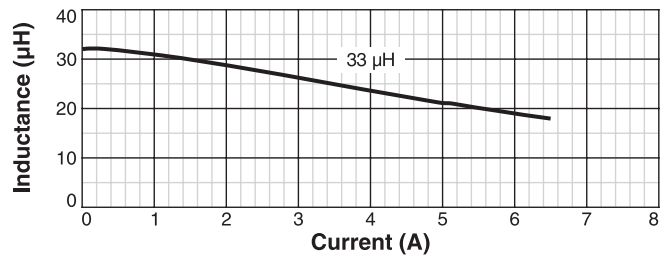
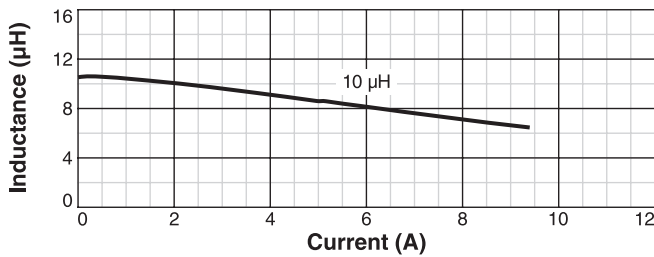
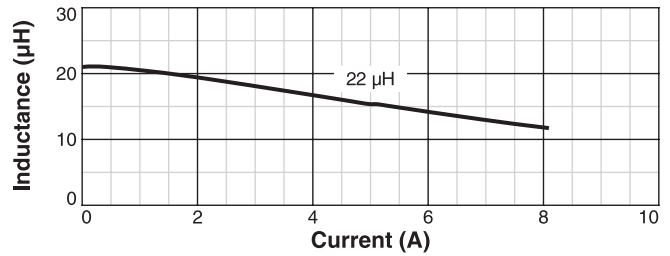
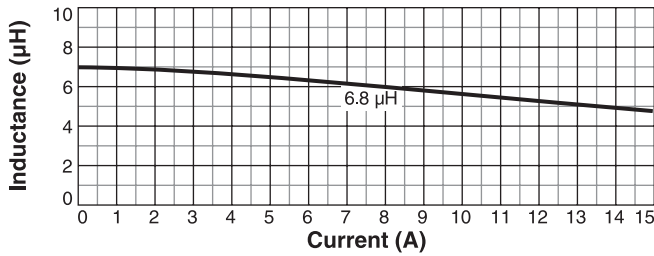
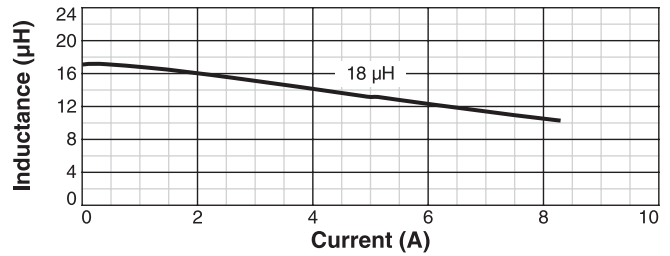
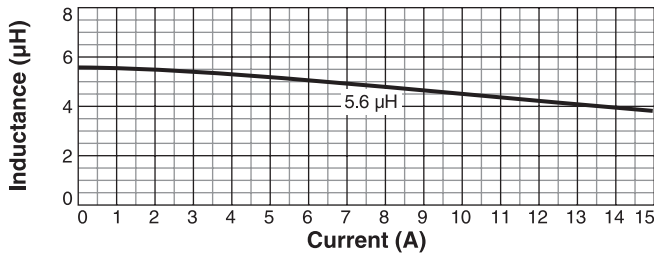
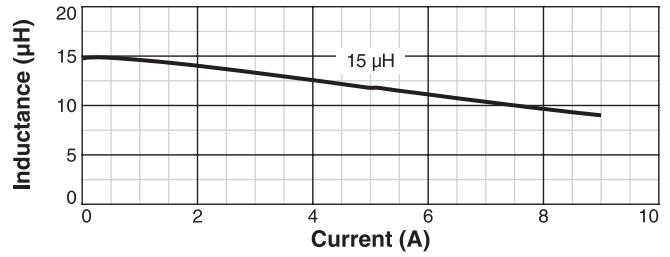
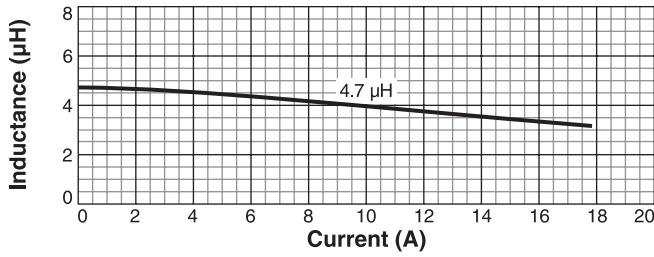
ST541PYA Series (7070)

L vs Current



ST541PYA Series (7070)

L vs Current



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Cary, IL 60013
Phone 800-981-0363

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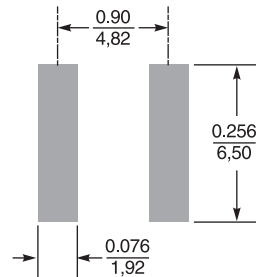
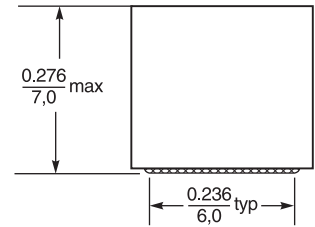
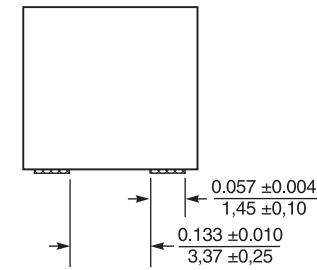
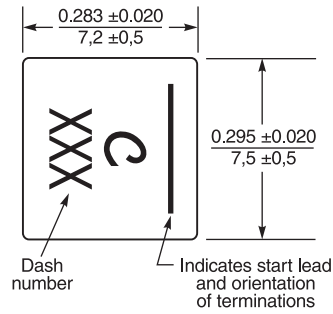
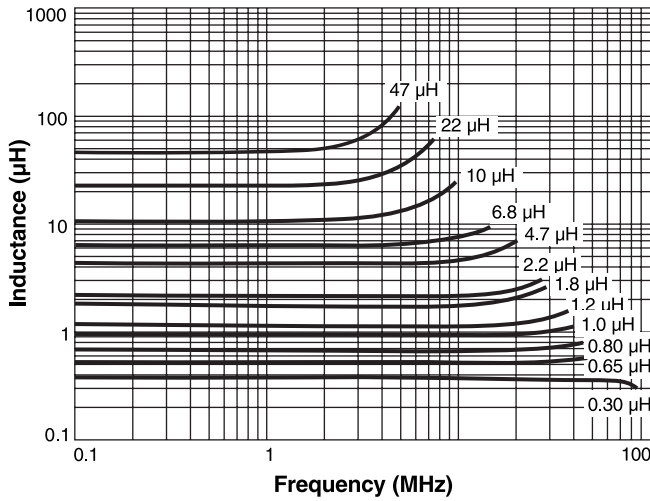
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Email cps@coilcraft.com
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Document ST856-3 Revised 05/03/23

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.

ST541PYA Series (7070)

Typical L vs Frequency



Suggested Land Pattern

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



CRITICAL PRODUCTS & SERVICES

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Document ST856-4 Revised 05/03/23

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