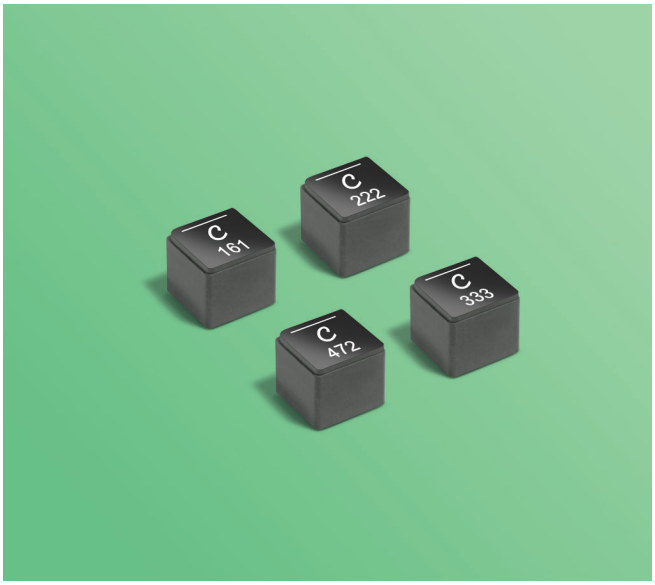
High-Reliability Power Inductors MS541PYA



- 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) 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 1.9 – 2.3 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 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] typ	DCR (mOhms)[3] max	SRF (MHz)[4] min	SRF (MHz)[4] typ	Isat[5] (A)	Irms (A)[6] 20°C rise	Irms (A)[6] 40°C rise
MS541PYA161MSZ	0.16	0.75	0.83	166	207	78.0	22.9	27.1
MS541PYA301MSZ	0.30	1.06	1.17	108	135	55.6	19.6	25.1
MS541PYA551MSZ	0.55	1.42	1.56	71	89	43.0	17.6	21.8
MS541PYA651MSZ	0.65	1.75	1.93	59	74	40.0	15.8	19.9
MS541PYA801MSZ	0.80	2.08	2.29	54	67	37.8	15.6	19.4
MS541PYA102MSZ	1.0	2.55	2.81	51	64	34.8	15.0	18.8
MS541PYA122MSZ	1.2	3.10	3.41	34	43	31.2	12.2	16.2
MS541PYA182MSZ	1.8	4.05	4.46	34	43	25.0	11.9	15.8
MS541PYA222MSZ	2.2	5.73	6.33	28	35	19.6	9.9	13.4
MS541PYA332MSZ	3.3	8.56	9.42	26	32	19.4	8.7	11.3
MS541PYA472MSZ	4.7	12.96	14.26	21	26	15.2	7.9	10.2
MS541PYA562MSZ	5.6	13.67	15.03	17	21	13.0	6.4	8.6
MS541PYA682MSZ	6.8	17.84	19.62	16	20	12.8	5.1	6.9

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:

MS541PYA682MSZ

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.

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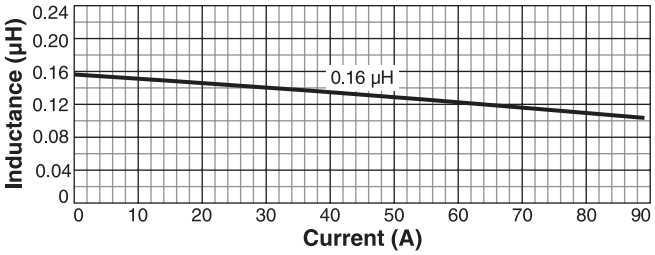
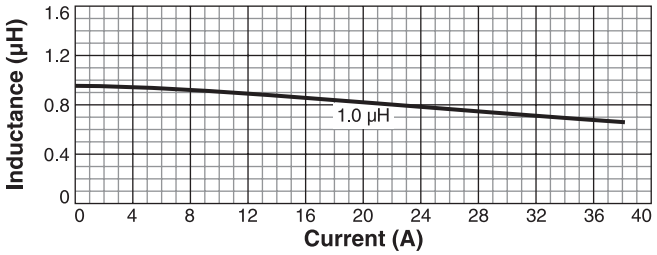
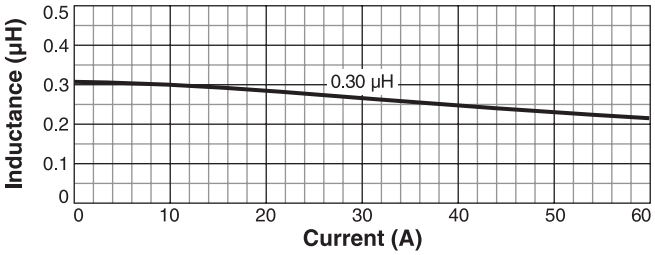
Document MS856-1 Revised 01/02/24

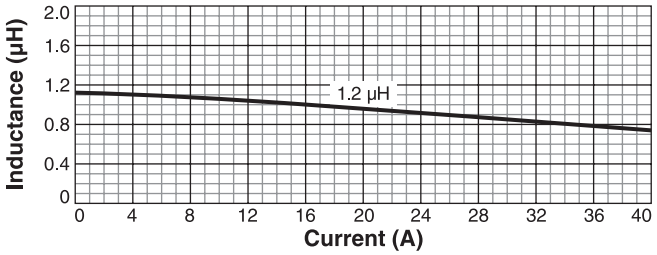
MS541PYA Series (7070)

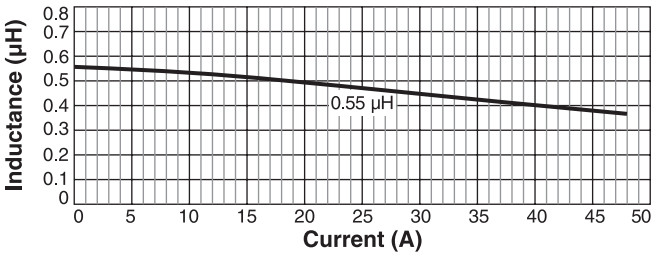
L vs Current

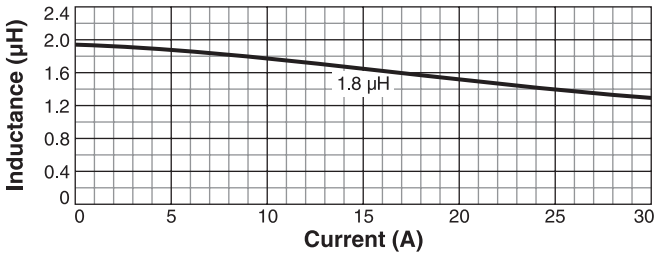


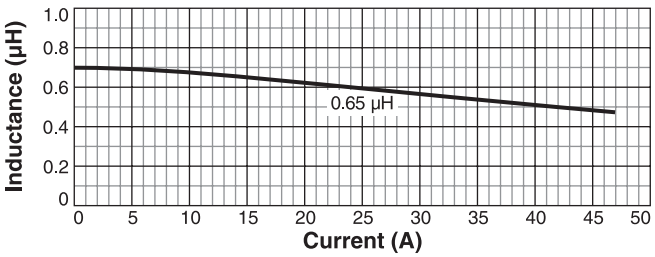


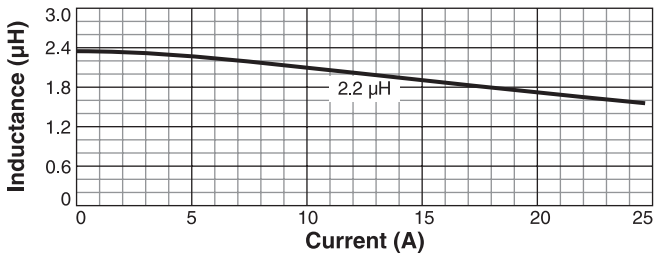


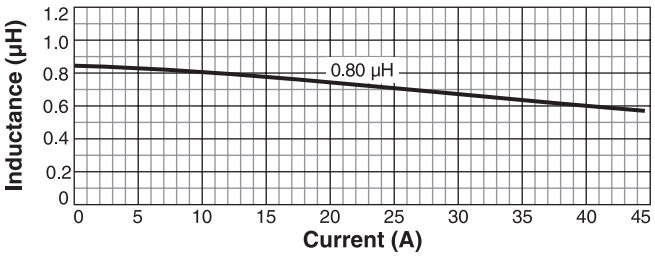


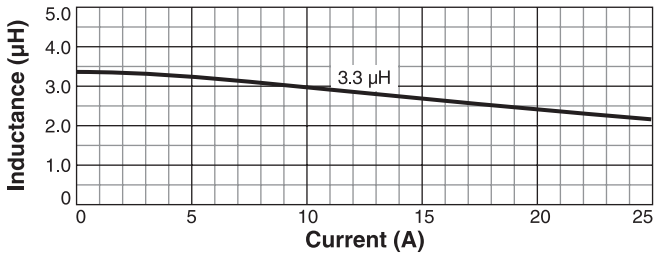












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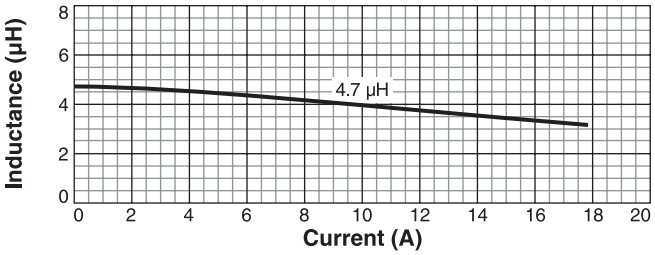
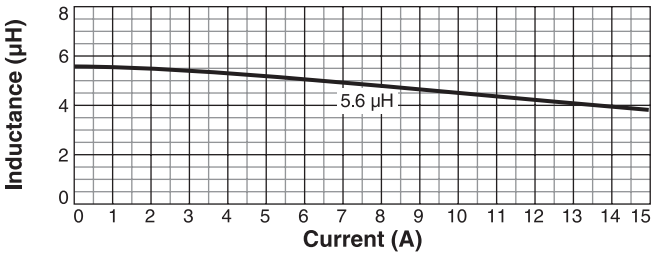
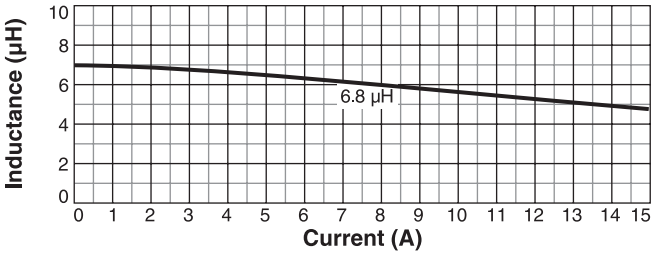
Document MS856-2 Revised 01/02/24

MS541PYA Series (7070)

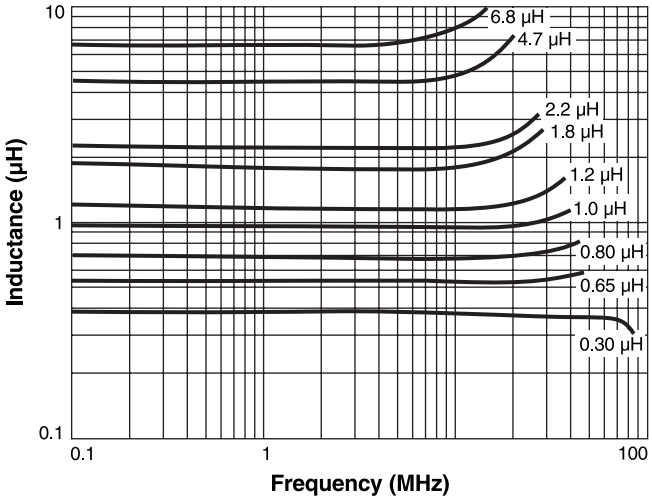
L vs Current

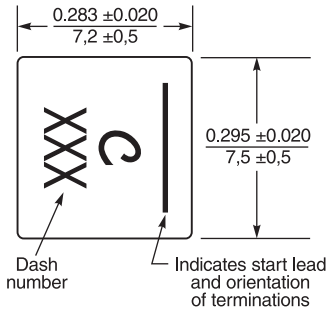


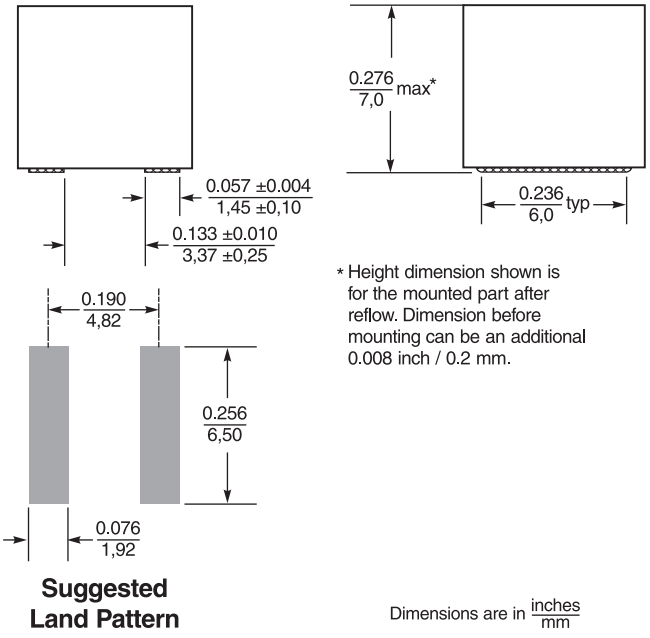




Typical L vs Frequency







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

Dimensions are in inches / mm

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