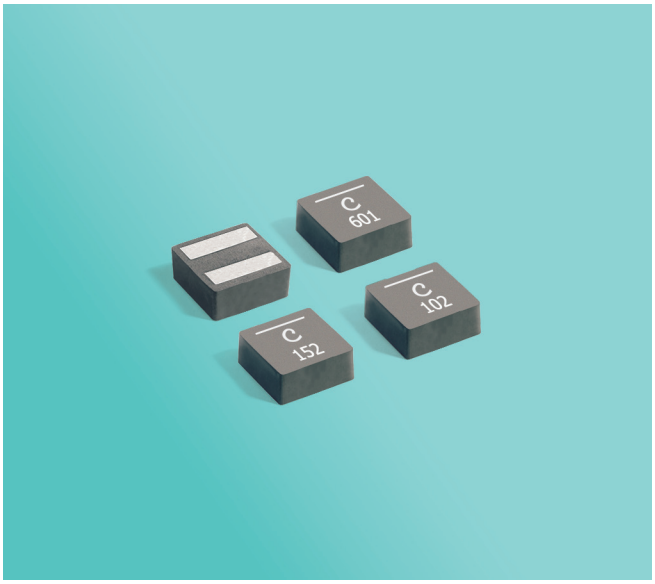
High Reliability Power Inductors MS433PYA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- Exceptionally low DCR – 5.81 mOhm
- Soft saturation makes them ideal for VRM/VRD applications.

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

Core material Composite

Weight 0.17 – 0.18 g

Ambient temperature –55°C to +105°C with Irms current, +105°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 1000/7″reel; 3500/13″ reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 2.3 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
MS433PYA221MSZ	0.22	5.81	6.40	153	191	18.7	12.0	16.8
MS433PYA401MSZ	0.40	7.55	8.30	116	145	12.5	10.0	14.0
MS433PYA601MSZ	0.60	9.50	10.45	85	106	10.4	7.9	11.7
MS433PYA102MSZ	1.0	13.25	14.60	63	79	8.7	6.7	9.6
MS433PYA152MSZ	1.5	21.45	23.60	51	64	7.1	5.2	7.5
MS433PYA222MSZ	2.2	35.20	38.70	42	52	5.6	4.0	5.5

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

   MS433PYA222MSZ

   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 on 0.75 inch wide × 0.25 inch thick copper traces in still air.

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.

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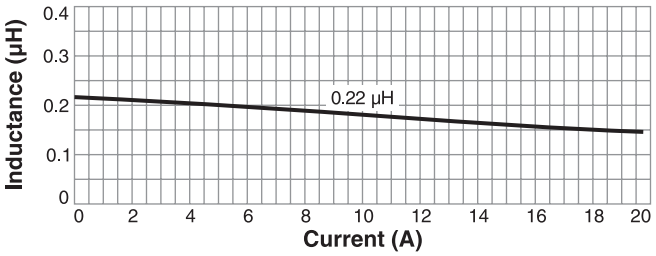
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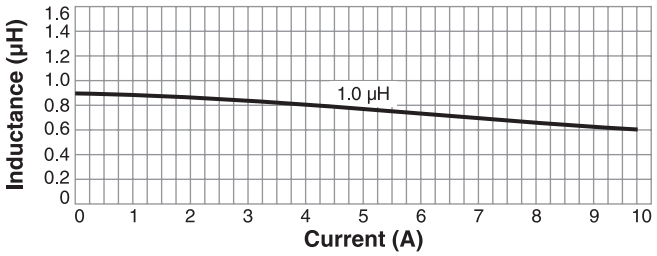
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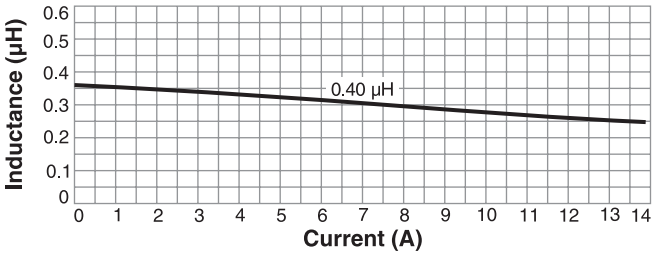
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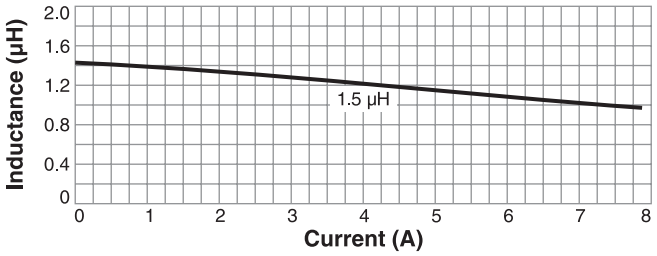
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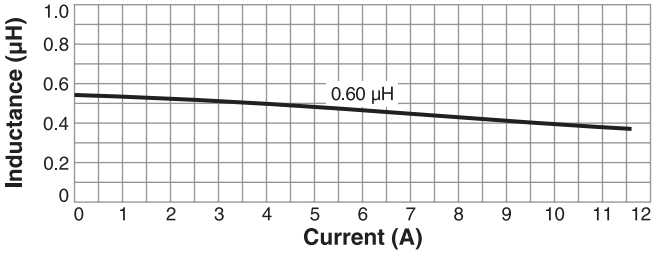
L vs Current

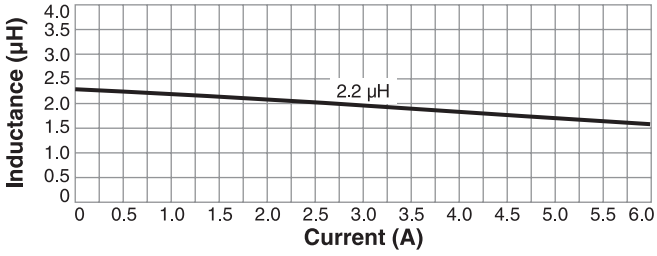












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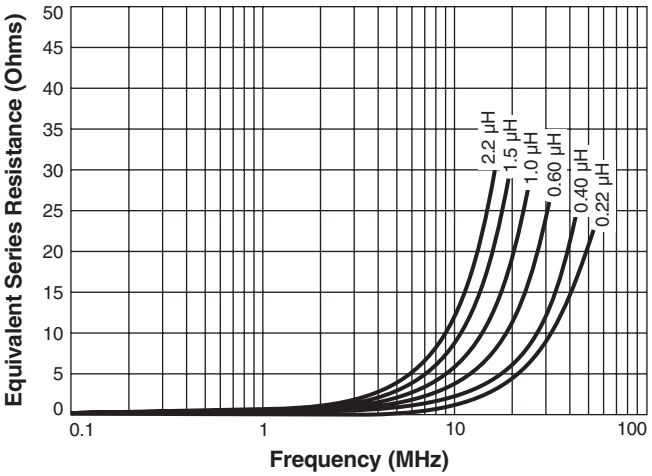
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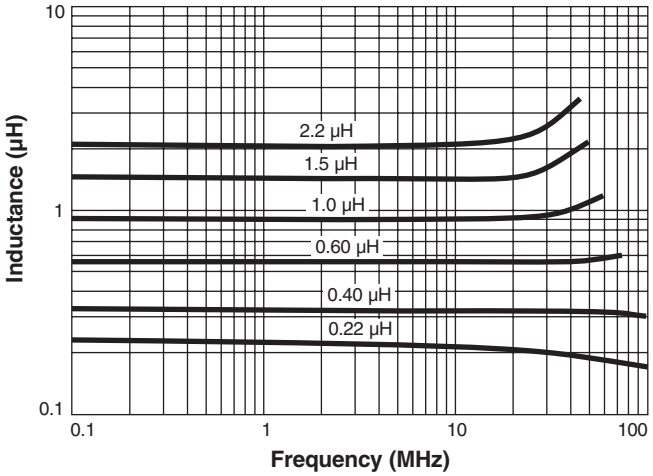
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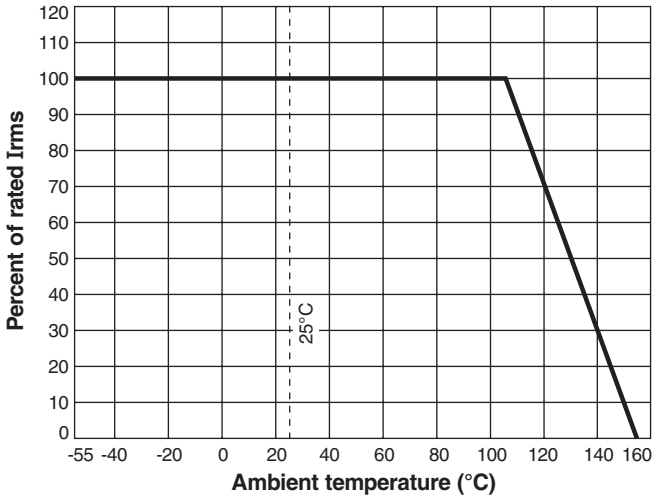
ESR vs Frequency

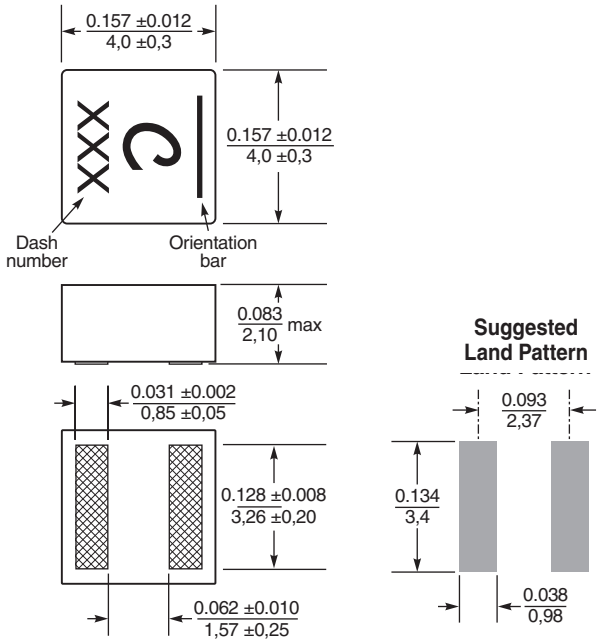


L vs Frequency



Irms Derating





Dimensions are in inches / mm

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