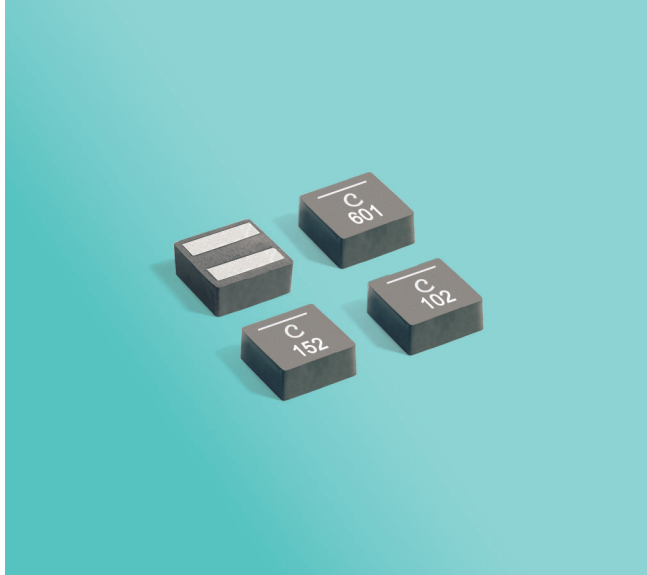


High Reliability Power Inductors MS433PYA



- 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

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 1000/7" 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 | | SRF (MHz) ⁴ | | Isat ⁵ (A) | Irms (A) ⁶ | |
|--------------------------|--------------------------------------|--------------------------|-------|------------------------|-----|--------------------------|-----------------------|-----------|
| | | typ | max | min | typ | | 20°C rise | 40°C rise |
| MS433PYA221MSZ | 0.22 | 5.81 | 6.40 | 153 | 191 | 18.7 | 9.0 | 12.6 |
| MS433PYA401MSZ | 0.4 | 7.55 | 8.30 | 116 | 145 | 12.5 | 7.5 | 10.5 |
| MS433PYA601MSZ | 0.6 | 9.50 | 10.45 | 85 | 106 | 10.4 | 5.9 | 8.7 |
| MS433PYA102MSZ | 1.0 | 13.25 | 14.60 | 63 | 79 | 8.7 | 5.0 | 7.2 |
| MS433PYA152MSZ | 1.5 | 21.45 | 23.60 | 51 | 64 | 7.1 | 3.9 | 5.6 |
| MS433PYA222MSZ | 2.2 | 35.20 | 38.70 | 42 | 52 | 5.6 | 3.0 | 4.1 |

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

MS433PYA222MSZ

Screening: Z = Unscreened

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

- Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc.
 - DCR measured on a micro-ohmmeter.
 - SRF measured using an Agilent/HP 4395A or equivalent.
 - DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.
 - Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
 - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

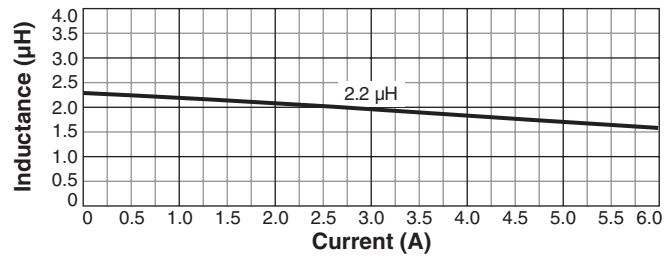
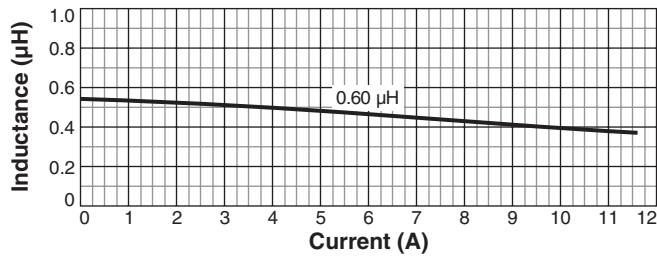
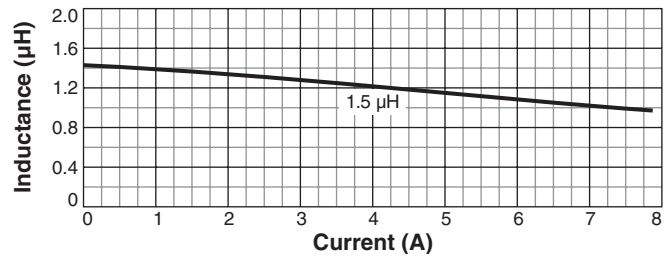
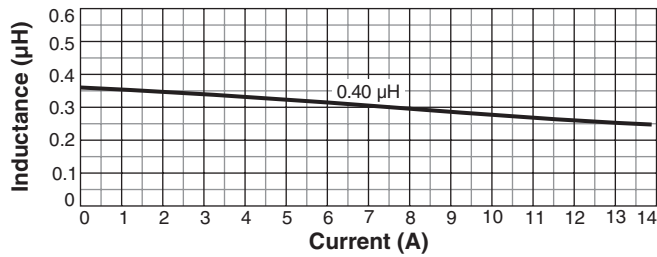
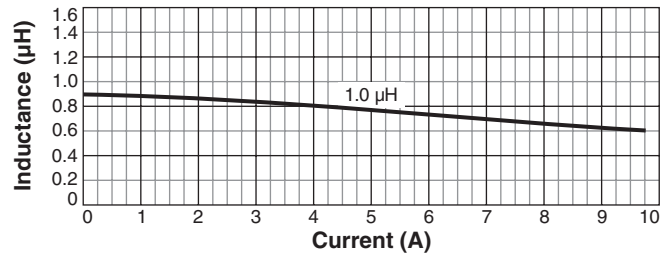
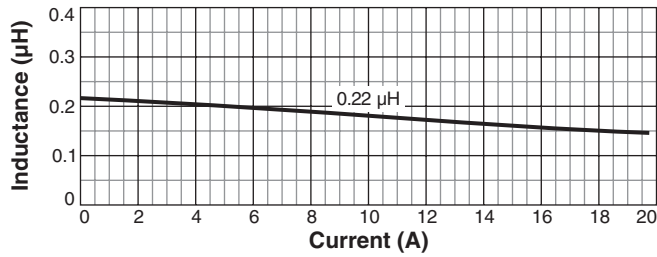
Irms Testing

Irms testing was performed on a 0.060" inch 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.

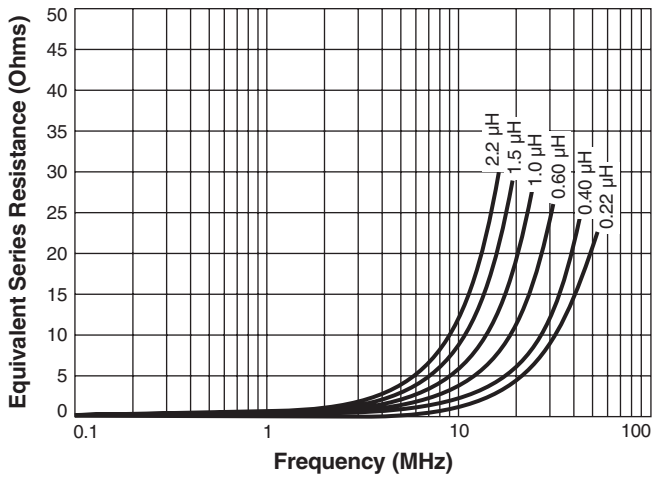
MS433PYA High Reliability Power Inductors

L vs Current

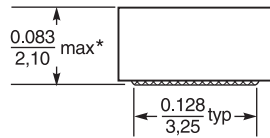
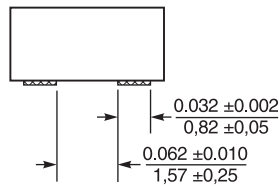
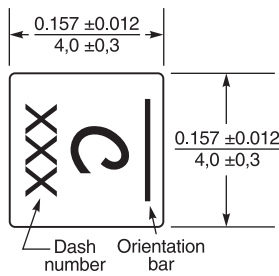
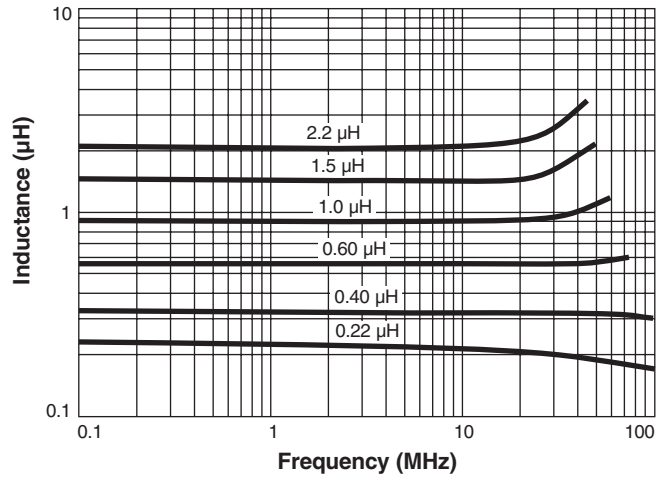


MS433PYA High Reliability Power Inductors

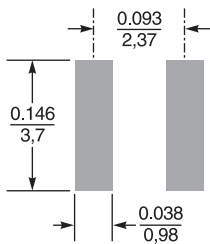
ESR vs Frequency



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.



Suggested Land Pattern

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



CRITICAL PRODUCTS & SERVICES

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