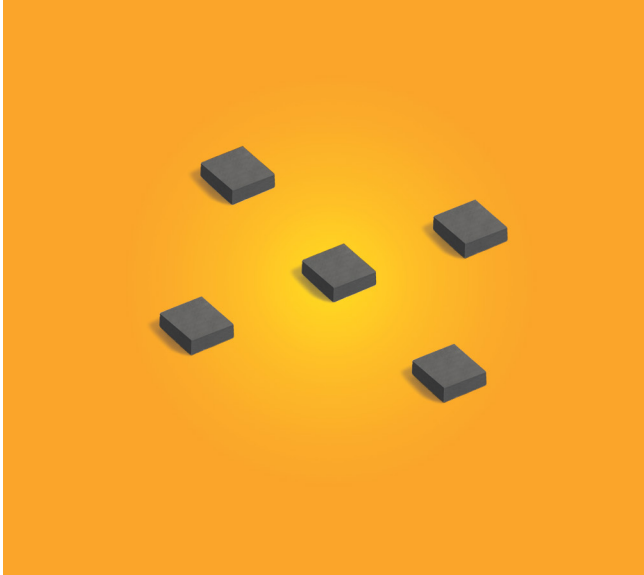


# High-Reliability Power Inductors MS319PZA



- High temperature material allows operation in ambient temperatures up to 155°C
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- Lowest profile, ultra-miniature, magnetically shielded power inductor; only 0.5 mm high, 2 mm × 2 mm footprint
- Soft saturation makes them ideal for VRM/VRD applications.
- Special construction allows it to pass vibration testing to 80 G and shock testing to 1000 G.

**Core material** Composite

**Terminations** Tin-lead (63/37) over tin over nickel over silver-platinum.

**Weight** 8.4 mg

**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** 2000/7" reel

Plastic tape: 8 mm wide, 0.28 mm thick, 4 mm pocket spacing, 0.76 mm pocket depth

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR (Ohms) <sup>3</sup> |       | SRF typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |          |          | Irms (A) <sup>6</sup> |           |
|--------------------------|--------------------------------------|-------------------------|-------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|
|                          |                                      | nom                     | max   |                               | 10% drop              | 20% drop | 30% drop | 20°C rise             | 40°C rise |
| MS319PZA151MSZ           | 0.15                                 | 0.085                   | 0.098 | 590                           | 1.05                  | 1.55     | 1.90     | 1.25                  | 1.60      |
| MS319PZA221MSZ           | 0.22                                 | 0.111                   | 0.128 | 480                           | 0.72                  | 1.20     | 1.50     | 1.13                  | 1.48      |
| MS319PZA331MSZ           | 0.33                                 | 0.144                   | 0.166 | 380                           | 0.65                  | 1.05     | 1.30     | 1.00                  | 1.30      |
| MS319PZA471MSZ           | 0.47                                 | 0.177                   | 0.204 | 275                           | 0.60                  | 0.97     | 1.20     | 0.95                  | 1.25      |
| MS319PZA681MSZ           | 0.68                                 | 0.215                   | 0.247 | 220                           | 0.50                  | 0.75     | 0.95     | 0.80                  | 1.05      |

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

**MS319PZA681MSZ**

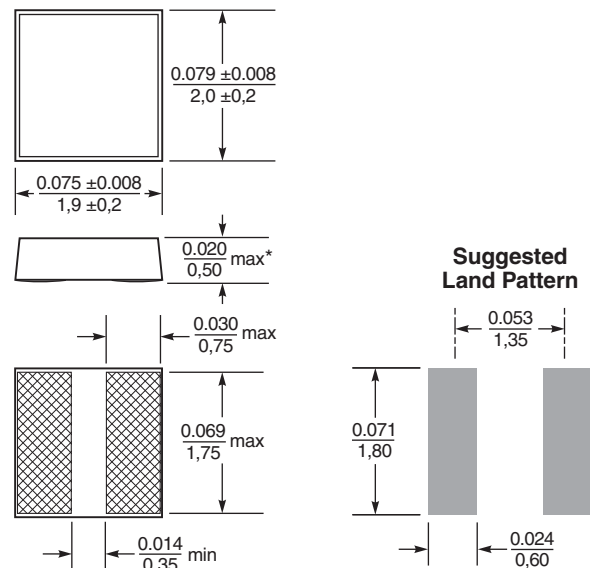
**Testing:** Z = Unscreened

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

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 Agilent/HP 4395A or equivalent.
- DC current at 25°C that causes the specified inductance drop 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.



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

\* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

**Coilcraft CPS**  
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Phone 800-981-0363

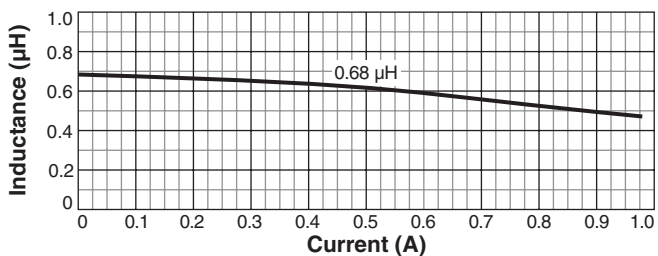
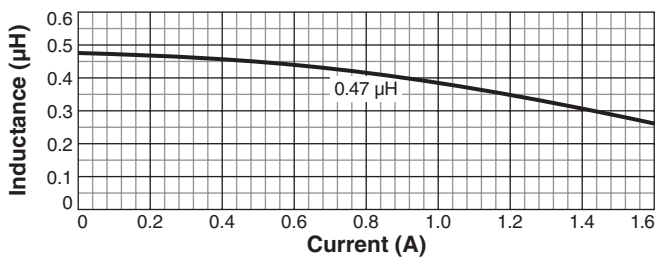
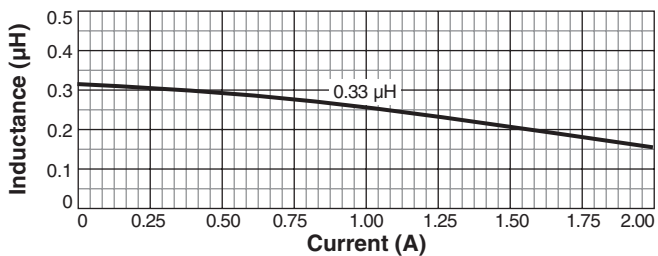
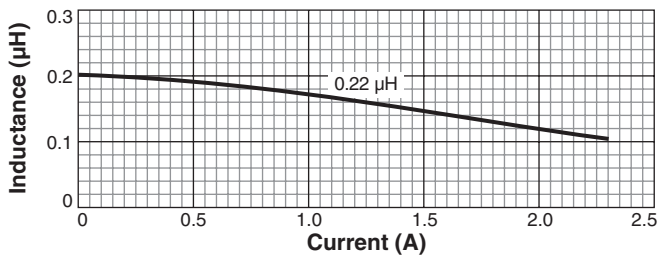
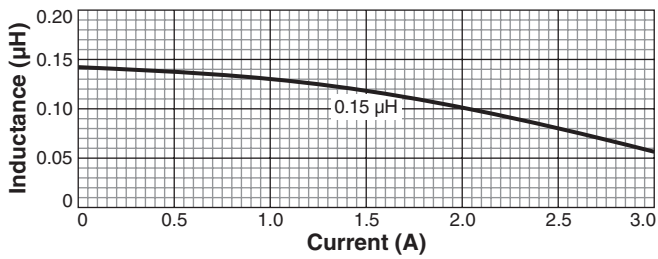
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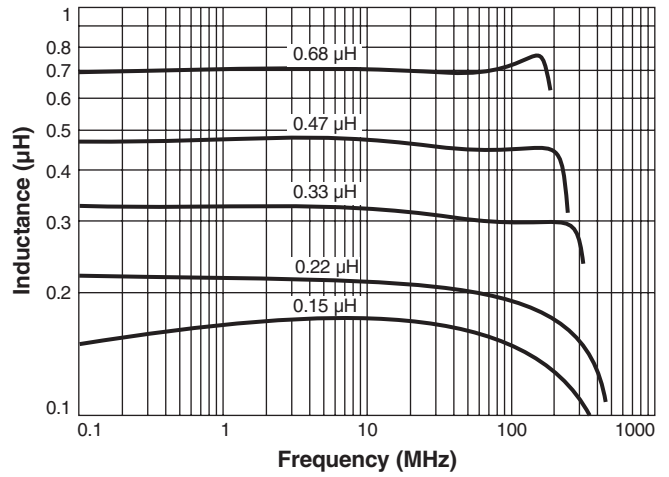
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# MS319PZA Series (2005)

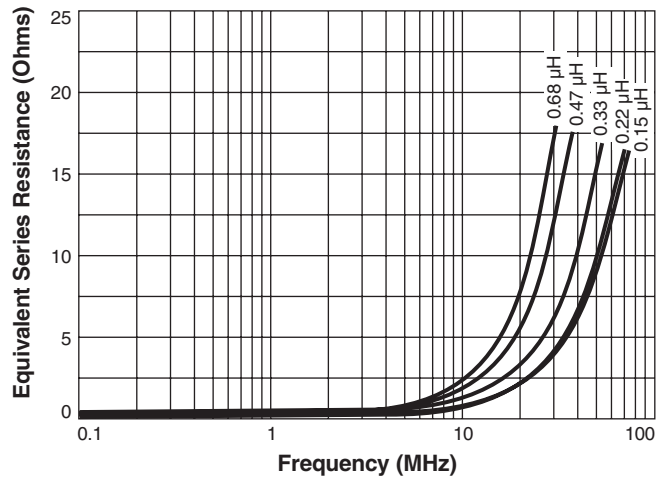
## L vs Current



## L vs Frequency



## ESR vs Frequency



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