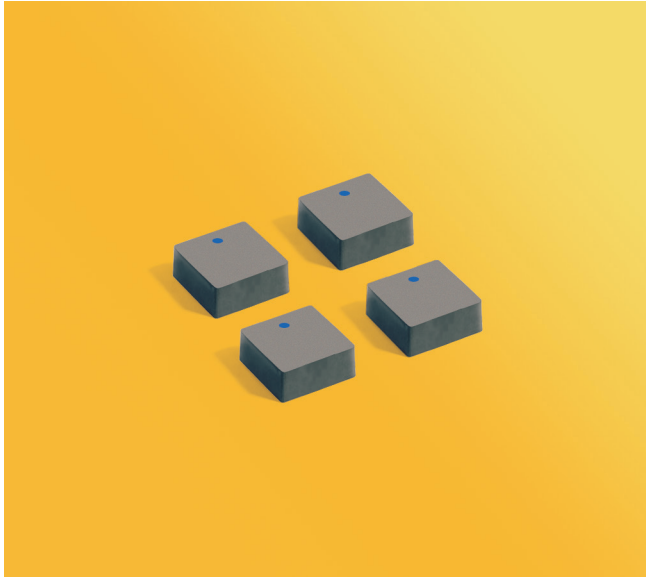


# Outgassing Compliant Power Inductors AE433PZA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Passes NASA low outgassing specifications
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- Exceptionally low DCR; soft saturation
- Passes vibration testing to 30 G and shock testing to 500 G

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

**Core material** Composite

**Weight** 134 – 187 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** 1000/7" reel

Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 2.3 mm pocket depth

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR (mOhms) <sup>3</sup> |       | SRF (MHz) <sup>4</sup> |     | Isat (A) <sup>5</sup> |          |          | Irms (A) <sup>6</sup> |           |
|--------------------------|--------------------------------------|--------------------------|-------|------------------------|-----|-----------------------|----------|----------|-----------------------|-----------|
|                          |                                      | typ                      | max   | min                    | typ | 10% drop              | 20% drop | 30% drop | 20°C rise             | 40°C rise |
| AE433PZA102MSZ           | 1.0                                  | 10.80                    | 11.90 | 51                     | 64  | 4.5                   | 5.1      | 5.4      | 6.0                   | 8.3       |
| AE433PZA152MSZ           | 1.5                                  | 14.40                    | 15.80 | 47                     | 59  | 4.1                   | 4.4      | 4.6      | 5.0                   | 6.8       |
| AE433PZA222MSZ           | 2.2                                  | 21.35                    | 23.50 | 30                     | 38  | 3.1                   | 3.5      | 3.7      | 4.5                   | 6.0       |
| AE433PZA332MSZ           | 3.3                                  | 34.80                    | 38.30 | 26                     | 33  | 2.7                   | 2.8      | 2.9      | 2.9                   | 3.9       |
| AE433PZA472MSZ           | 4.7                                  | 52.20                    | 57.40 | 21                     | 26  | 2.0                   | 2.5      | 2.7      | 2.7                   | 3.6       |

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

**AE433PZA472MSZ**

**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)  
**N** = Group A screening per Coilcraft CP-SA-10004  
 All screening performed to the document's latest revision  
 Custom screening also available

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. DC current at 25°C that causes the specified 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.

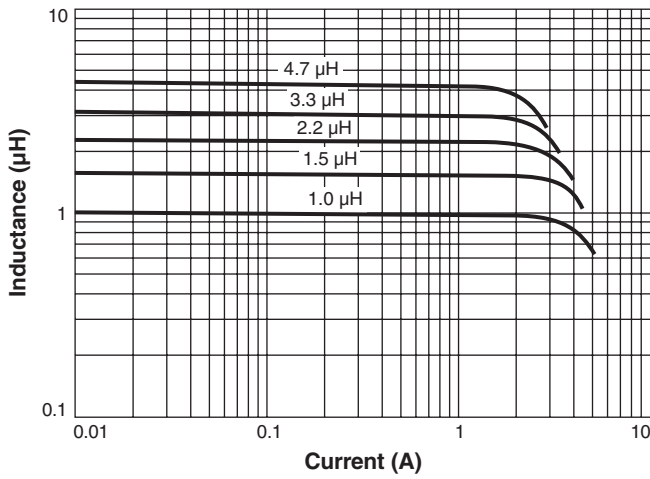
## Irms Testing

Irms testing was performed on a 0.060" thick pcb with 4 oz. copper traces optimized to minimize additional temperature rise.

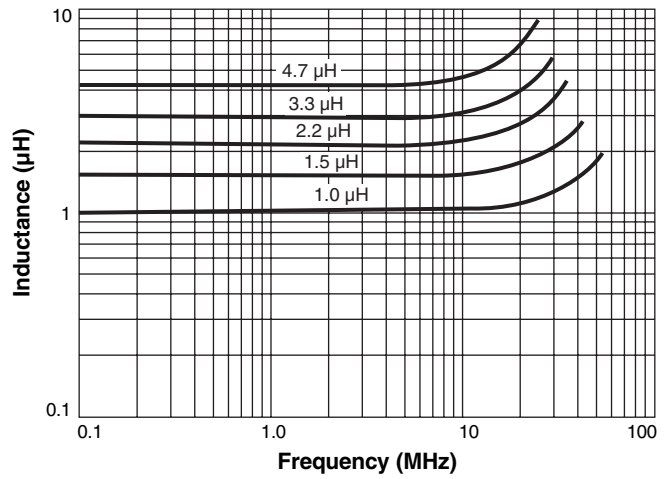
Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

# AE433PZA Series

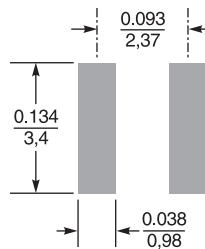
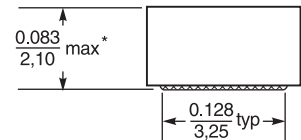
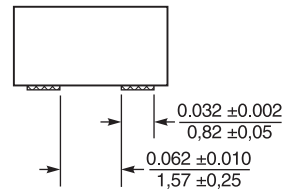
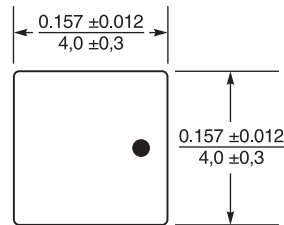
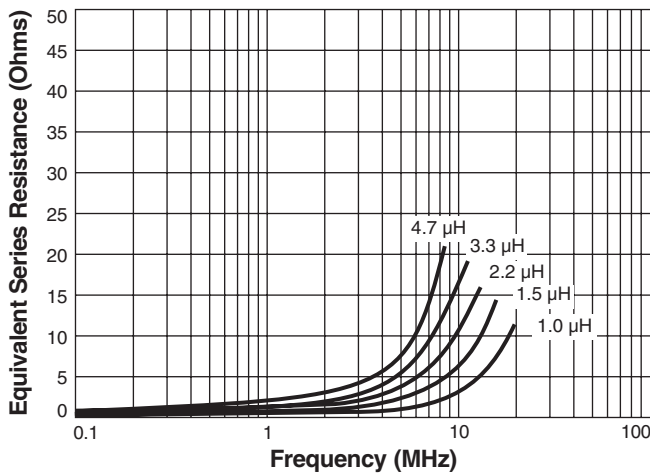
## L vs Current



## L vs Frequency



## ESR vs Frequency



**Suggested Land Pattern**

\* 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  $\frac{\text{inches}}{\text{mm}}$



CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

© Coilcraft, Inc. 2023

Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

Document AE745-2 Revised 04/12/23

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.