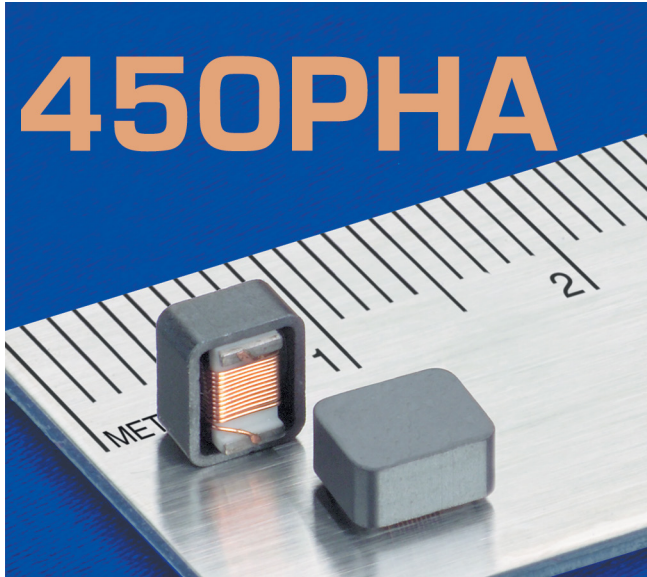


# Power Inductor for Critical Applications ST450PHA



- Shielded power inductors
- High inductance with tight tolerance
- Excellent current handling for a part this size; low DCR

**Core material** Ceramic/Ferrite

**Terminations** Silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 286–323 mg

**Ambient temperature** –40°C to +105°C with Irms current

**Maximum part temperature** +145°C (ambient + temp rise).

**Storage temperature** Component: –55°C to +145°C.  
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)

**Packaging** 600 per 7" reel Plastic tape: 12 mm wide, 0.25 mm thick, 4 mm pocket spacing

| Part number <sup>1</sup> | Inductance<br>±10% <sup>2</sup><br>(μH) | Q<br>min <sup>3</sup> | DCR<br>max <sup>4</sup><br>(Ohms) | SRF<br>typ <sup>5</sup><br>(MHz) | Isat <sup>6</sup><br>(A) | Irms <sup>7</sup><br>(A) |
|--------------------------|-----------------------------------------|-----------------------|-----------------------------------|----------------------------------|--------------------------|--------------------------|
| ST450PHA102KLZ           | 1.0                                     | 35                    | 0.05                              | 685                              | 2.50                     | 2.70                     |
| ST450PHA122KLZ           | 1.2                                     | 38                    | 0.06                              | 460                              | 2.00                     | 2.60                     |
| ST450PHA152KLZ           | 1.5                                     | 38                    | 0.06                              | 460                              | 2.00                     | 2.60                     |
| ST450PHA222KLZ           | 2.2                                     | 38                    | 0.07                              | 270                              | 1.70                     | 2.40                     |
| ST450PHA272KLZ           | 2.7                                     | 40                    | 0.08                              | 265                              | 1.40                     | 2.30                     |
| ST450PHA332KLZ           | 3.3                                     | 40                    | 0.09                              | 225                              | 1.40                     | 2.30                     |
| ST450PHA392KLZ           | 3.9                                     | 40                    | 0.11                              | 170                              | 1.20                     | 2.20                     |
| ST450PHA472KLZ           | 4.7                                     | 40                    | 0.11                              | 165                              | 1.15                     | 2.10                     |
| ST450PHA562KLZ           | 5.6                                     | 40                    | 0.12                              | 155                              | 1.10                     | 2.10                     |
| ST450PHA682KLZ           | 6.8                                     | 40                    | 0.13                              | 140                              | 1.00                     | 1.90                     |
| ST450PHA103KLZ           | 10                                      | 40                    | 0.17                              | 120                              | 0.90                     | 1.70                     |
| ST450PHA153KLZ           | 15                                      | 40                    | 0.26                              | 100                              | 0.70                     | 1.45                     |
| ST450PHA223KLZ           | 22                                      | 40                    | 0.33                              | 45                               | 0.54                     | 1.20                     |
| ST450PHA333KLZ           | 33                                      | 40                    | 0.40                              | 30                               | 0.46                     | 1.10                     |
| ST450PHA393KLZ           | 39                                      | 48                    | 0.56                              | 30                               | 0.40                     | 1.00                     |
| ST450PHA473KLZ           | 47                                      | 50                    | 0.87                              | 28                               | 0.35                     | 0.80                     |
| ST450PHA683KLZ           | 68                                      | 50                    | 1.08                              | 17                               | 0.32                     | 0.67                     |
| ST450PHA823KLZ           | 82                                      | 55                    | 1.25                              | 17                               | 0.28                     | 0.65                     |
| ST450PHA104KLZ           | 100                                     | 60                    | 1.32                              | 14                               | 0.27                     | 0.65                     |
| ST450PHA124KLZ           | 120                                     | 60                    | 1.45                              | 12                               | 0.23                     | 0.60                     |
| ST450PHA154KLZ           | 150                                     | 60                    | 2.20                              | 11                               | 0.20                     | 0.51                     |
| ST450PHA224KLZ           | 220                                     | 60                    | 2.65                              | 7                                | 0.17                     | 0.47                     |
| ST450PHA334KLZ           | 330                                     | 60                    | 4.85                              | 5.5                              | 0.15                     | 0.31                     |
| ST450PHA474KLZ           | 470                                     | 50                    | 5.85                              | 4.0                              | 0.12                     | 0.31                     |
| ST450PHA564KLZ           | 560                                     | 40                    | 6.10                              | 2.6                              | 0.11                     | 0.28                     |
| ST450PHA684KLZ           | 680                                     | 40                    | 6.60                              | 2.3                              | 0.10                     | 0.28                     |
| ST450PHA824KLZ           | 820                                     | 30                    | 7.35                              | 1.8                              | 0.09                     | 0.25                     |
| ST450PHA105KLZ           | 1000                                    | 28                    | 10.00                             | 1.8                              | 0.08                     | 0.22                     |

1. When ordering, please specify **termination** and **testing** codes:

**ST450PHA334KLZ**

**Termination:** L = Silver-palladium-platinum-glass frit.

Special order:

**T** = Tin-silver-copper (95.5/4/0.5) or

**S** = Tin-lead (63/37).

**Testing:** **Z** = Unscreened

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

- Inductance measured at 100 kHz, 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4263B impedance analyzer or equivalent.
- Q measured at 1 MHz on an Agilent/HP 4291 with an Agilent/HP 16193 test fixture.
- DCR measured on micro-ohmmeter and a Coilcraft CCF859 test fixture.
- SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft CCF1301 test fixture.
- DC current at which the inductance drops 10% (typ) from its value without current.
- Current that causes a 40°C 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.

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
MEASUREMENTS  
SEE WEB SITE **TEST FIXTURES**

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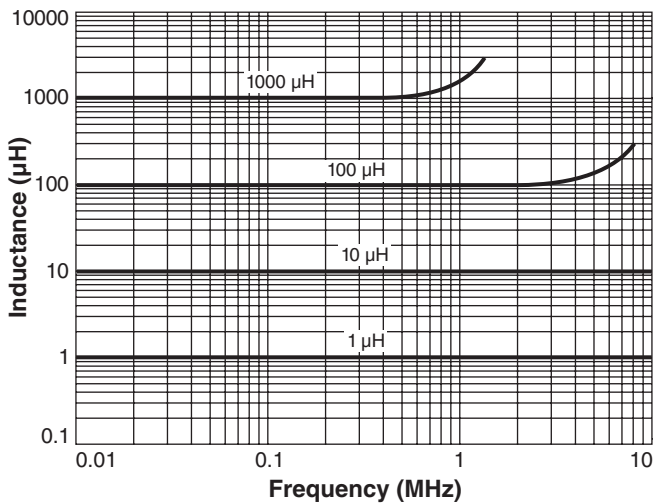
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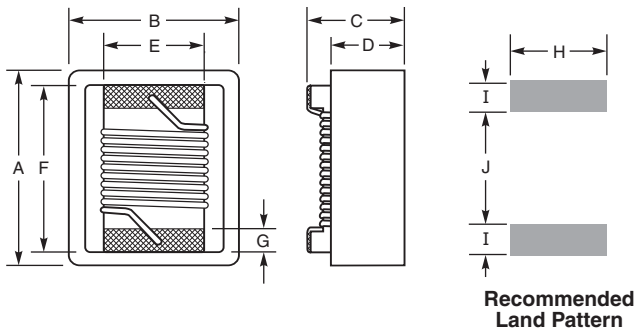
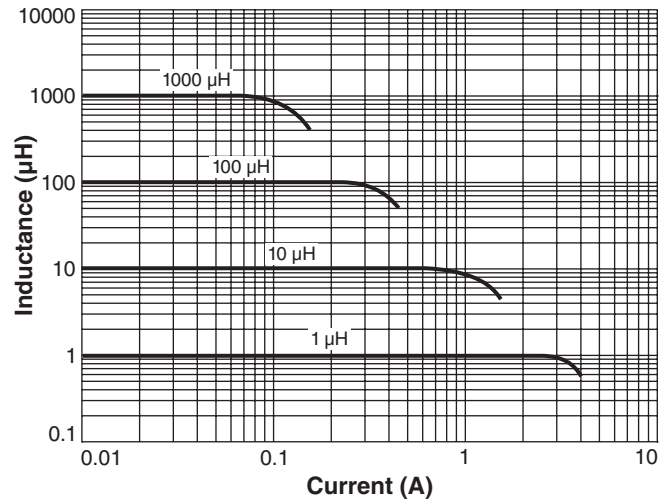
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# Power Inductors for Critical Applications ST450PHA

## Typical L vs Frequency



## Typical L vs Current



| A     | B     | C     | D     | E     | F     | G     | H     | I     | J     |        |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| max   | max   | max   | ref   | ref   | ref   |       |       |       |       | inches |
| 0.231 | 0.196 | 0.150 | 0.107 | 0.100 | 0.178 | 0.025 | 0.120 | 0.045 | 0.118 |        |
| 5,87  | 4,98  | 3,81  | 2,72  | 2,54  | 4,52  | 0,64  | 3,05  | 1,14  | 3,00  | mm     |

Note: Termination dimensions are before optional solder application.  
For maximum termination dimensions including solder, add  
0.006 in / 0,15 mm.

**S-Parameter files**  
ON OUR WEB SITE

**SPICE models**  
ON OUR WEB SITE