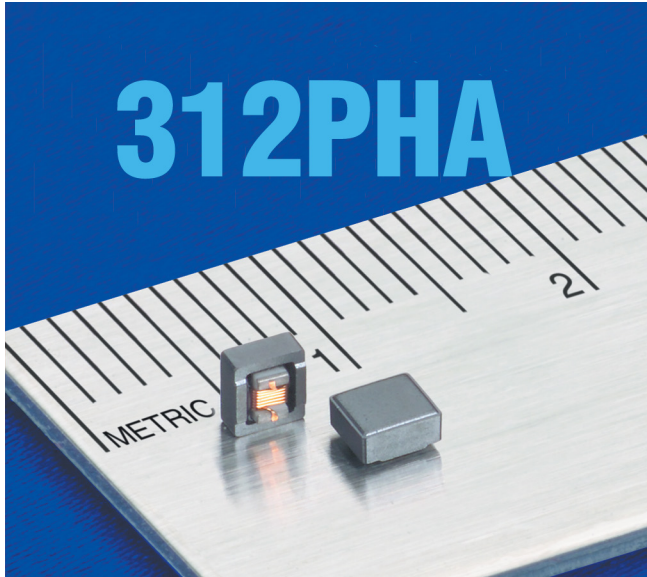


Power Inductor for Critical Applications ST312PHA



- Shielded power inductors
- 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 26.4– 27.9 mg

Ambient temperature –40°C to +65°C with Irms current

Maximum part temperature +105°C (ambient + temp rise).

Storage temperature Component: –55°C to +105°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 2000/7" reel; 7500/13" reel Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.8 mm pocket depth

| Part number ¹ | L ±10% ² (µH) | Q min ³ at 1 MHz | DCR ⁴ max (Ohms) | SRF ⁵ typ (MHz) | Isat ⁶ (A) | Irms ⁷ (A) |
|--------------------------|-----------------------------|--------------------------------|-----------------------------------|----------------------------------|--------------------------|--------------------------|
| ST312PHA781KLZ | 0.78 | 15 | 0.24 | 475 | 0.55 | 1.30 |
| ST312PHA102KLZ | 1.0 | 15 | 0.26 | 390 | 0.40 | 1.00 |
| ST312PHA182KLZ | 1.8 | 15 | 0.54 | 155 | 0.39 | 0.70 |
| ST312PHA222KLZ | 2.2 | 15 | 0.75 | 245 | 0.33 | 0.60 |
| ST312PHA272KLZ | 2.7 | 15 | 0.75 | 127 | 0.33 | 0.55 |
| ST312PHA332KLZ | 3.3 | 15 | 0.88 | 72 | 0.32 | 0.50 |
| ST312PHA392KLZ | 3.9 | 15 | 1.00 | 72 | 0.27 | 0.48 |
| ST312PHA472KLZ | 4.7 | 15 | 1.08 | 64 | 0.26 | 0.47 |
| ST312PHA562KLZ | 5.6 | 15 | 1.23 | 51 | 0.25 | 0.41 |
| ST312PHA682KLZ | 6.8 | 15 | 1.37 | 39 | 0.23 | 0.40 |
| ST312PHA822KLZ | 8.2 | 20 | 1.43 | 30 | 0.22 | 0.39 |
| ST312PHA103KLZ | 10 | 20 | 1.60 | 30 | 0.21 | 0.38 |
| ST312PHA153KLZ | 15 | 20 | 1.92 | 22 | 0.16 | 0.35 |
| ST312PHA223KLZ | 22 | 20 | 2.96 | 16 | 0.13 | 0.27 |
| ST312PHA333KLZ | 33 | 20 | 5.63 | 12 | 0.10 | 0.20 |
| ST312PHA473KLZ | 47 | 20 | 5.69 | 12 | 0.10 | 0.18 |

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

ST312PHA473KLZ

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

All screening performed to the document's latest revision

Custom screening also available

2. Inductance measured at 100 kHz, 0.1 Vrms, using a Coilcraft SMD-A fixture in Agilent/HP 4263B LCR meter.
 3. Q measured on an Agilent/HP 4291 with an Agilent/HP 16193 test fixture.
 4. DCR measured on a micro-ohmmeter and a Coilcraft CCF840 test fixture.
 5. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
 6. DC current at 25°C that causes a 10% (typ) inductance drop from its value without current.
 7. 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.
 8. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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

Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

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

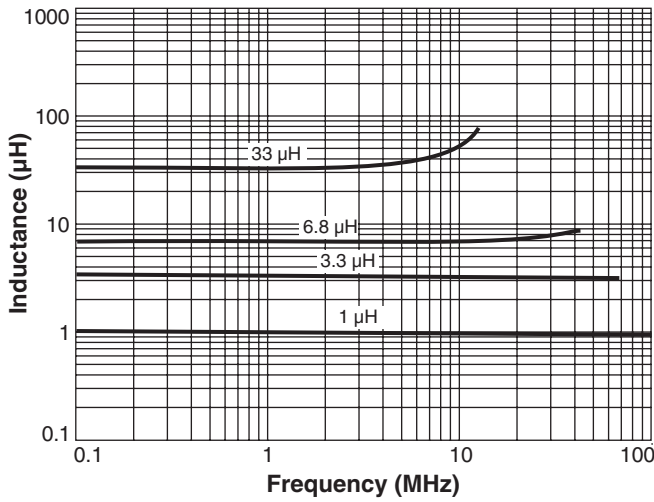
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

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.

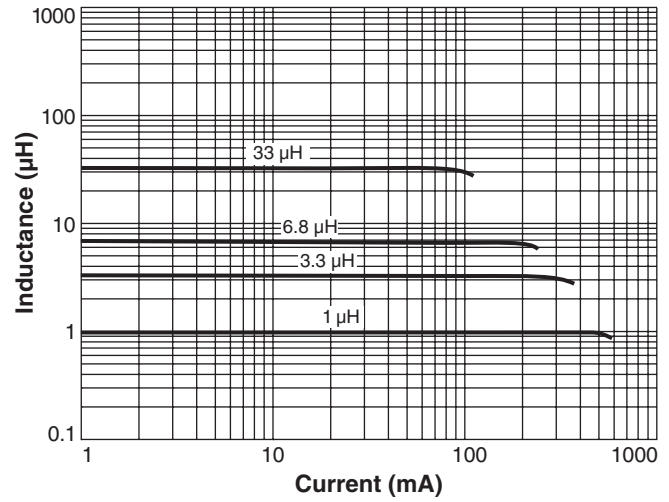
S-Parameter files
ON OUR WEB SITE
SPICE models
ON OUR WEB SITE

Power Inductor for Critical Applications – ST312PHA

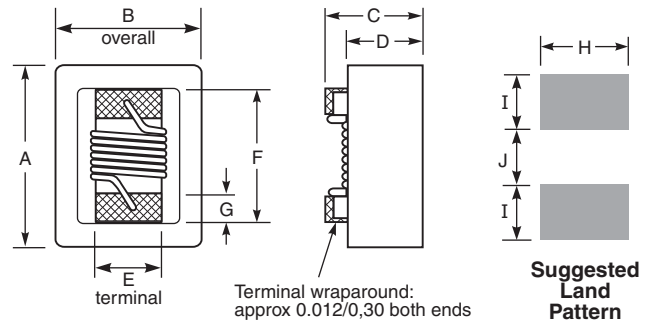
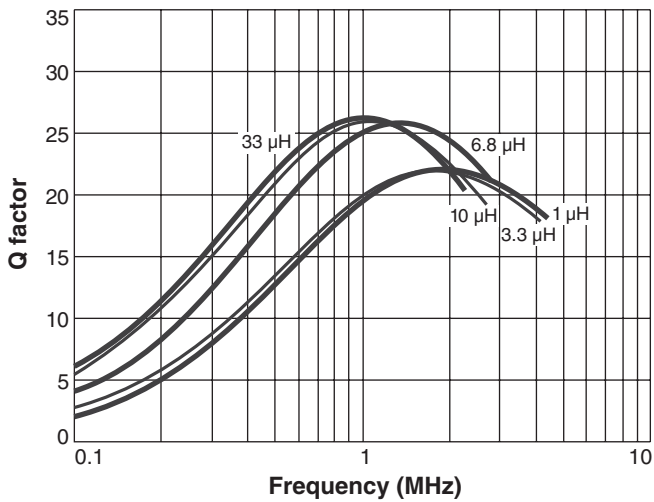
Typical L vs Frequency



Typical L vs Current



Typical Q vs Frequency



| A | B | C | D | E | F | G | H | I | J | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| max | max | max | | | | | | | | inches |
| 0.102 | 0.082 | 0.071 | 0.049 | 0.030 | 0.060 | 0.013 | 0.040 | 0.025 | 0.025 | |
| 2,59 | 2,08 | 1,80 | 1,24 | 0,76 | 1,52 | 0,33 | 1,02 | 0,64 | 0,64 | mm |

Note: Height dimension is before optional solder application. For maximum height including solder, add 0.006 in / 0,15 mm.



CRITICAL PRODUCTS & SERVICES

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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.