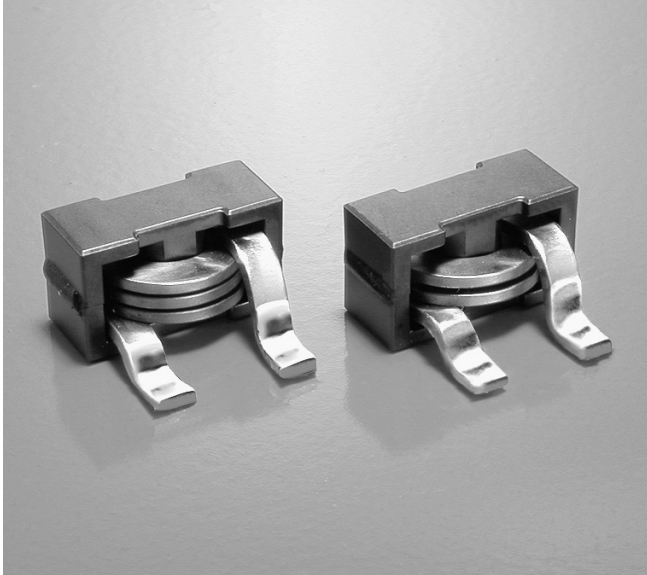


Shielded Power Inductors - SER1590



Designed for high current, low voltage power supply applications, the SER1590 Series offers unmatched electrical performance in an extremely robust package.

With their heavy flat wire windings, these inductors have exceptionally low DC resistance and offer saturation current ratings up to 50 Amps. Winding to core isolation is 300 Vrms.

SPICE models ON OUR WEB SITE

| Part number ¹ | Inductance ² ±20% (µH) | DCR (mOhms) ³ | | SRF typ ⁴ (MHz) | Isat (A) ⁵ | | | Irms ⁶ (A) |
|--------------------------|--------------------------------------|--------------------------|------|-------------------------------|-----------------------|----------|----------|--------------------------|
| | | typ | max | | 10% drop | 20% drop | 30% drop | |
| SER1590-301ML_ | 0.30 | 0.66 | 0.72 | 260 | 53 | 56 | 57 | 32 |
| SER1590-501ML_ | 0.50 | 0.87 | 0.94 | 202 | 39 | 42 | 44 | 27 |
| SER1590-601ML_ | 0.60 | 0.87 | 0.94 | 182 | 33 | 35 | 36 | 27 |
| SER1590-681ML_ | 0.68 | 0.87 | 0.94 | 160 | 30 | 32 | 33 | 27 |
| SER1590-801ML_ | 0.80 | 0.87 | 0.94 | 123 | 25 | 26 | 27 | 27 |
| SER1590-901ML_ | 0.90 | 1.08 | 1.15 | 160 | 27 | 28 | 29 | 22 |
| SER1590-102ML_ | 1.0 | 0.87 | 0.94 | 115 | 20 | 22 | 23 | 27 |
| SER1590-122ML_ | 1.2 | 1.08 | 1.15 | 90 | 20 | 22 | 23 | 22 |
| SER1590-152ML_ | 1.5 | 1.08 | 1.15 | 73 | 17 | 18 | 19 | 22 |

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

SER1590-102MLD

Termination: L = RoHS compliant tin-silver over copper.

Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

Packaging: D = 13" machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.

- Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent.
- DCR measured on a Keithley 580 micro-ohmmeter.
- SRF measured using an Agilent/HP 8753D network analyzer and Coilcraft SMD-D test fixture.
- DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)
- 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. [Click for temperature derating information.](#) When Irms is greater than Isat, Isat is the more critical specification, and Irms is shown in gray type. See Temperature Rise vs Current curve on next page.
- Electrical specifications at 25°C. Refer to Doc 362 "Soldering Surface Mount Components" before soldering

Designer's Kit C366 contains 4 of each value

Core material Ferrite

Core and winding loss See www.coilcraft.com/coreloss

Terminations RoHS tin silver (96.5/3.5) over copper. Other terminations available at additional cost.

Weight 4.14 – 5.2 g

Ambient temperature -40°C to +85°C with (40°C rise) Irms current.

Maximum part temperature +125°C (ambient + temp rise). [Derating.](#)

Storage temperature Component: -40°C to +125°C.

Tape and reel packaging: -40°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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

Packaging 250 per 13" reel; Plastic tape: 32 mm wide, 0.4 mm thick, 32 mm pocket spacing, 10.4 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).



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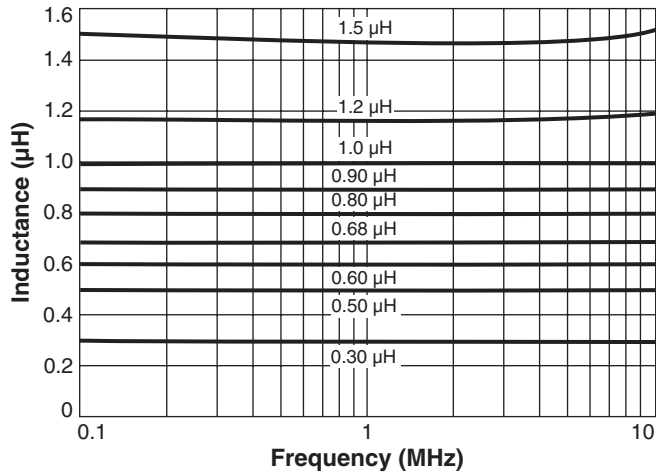
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

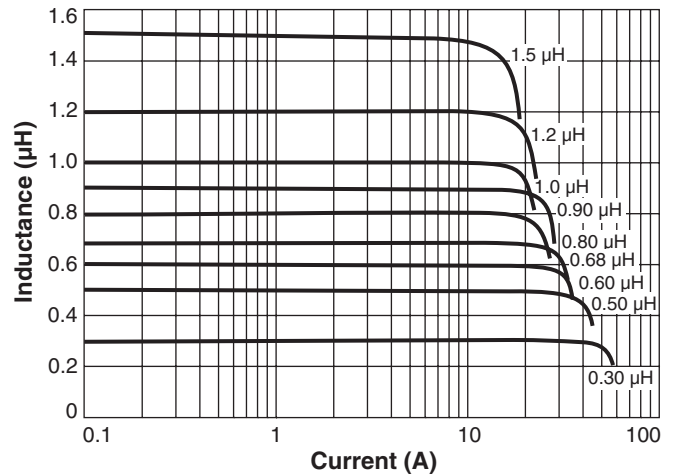


Shielded Power Inductors – SER1590 Series

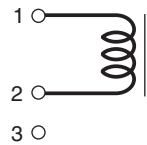
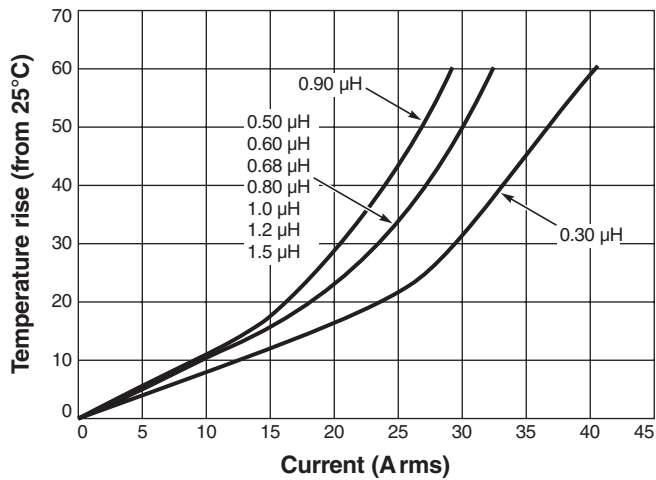
L vs Frequency



L vs Current

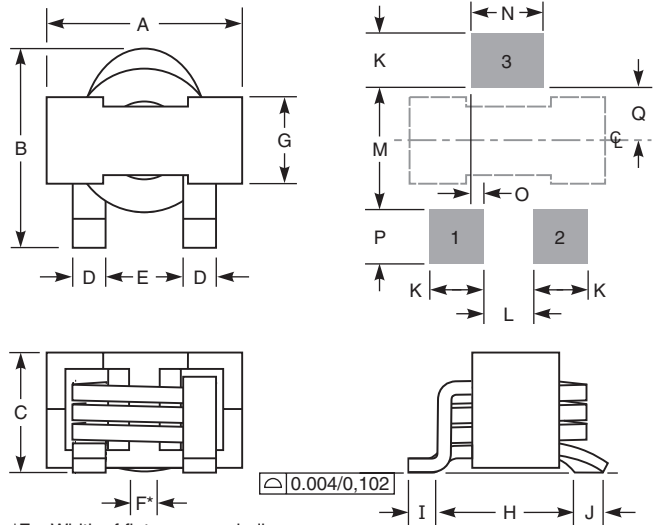


Temperature Rise vs Current



Caution:
Terminal 3 is provided for mounting stability only. This terminal is connected to the winding of the inductor and must not be connected to ground or any circuitry.

Recommended Land Pattern



| A | B | C | D | E | F | G | H | |
|-------|-------|-------|------|------|------|-------------|-------|------|
| max | max | max | | | | | | |
| 0.62 | 0.64 | 0.40 | 0.10 | 0.23 | 0.09 | 0.260±0.006 | 0.45 | |
| 15,75 | 16,26 | 10,16 | 2,54 | 5,84 | 2,29 | 6,60±0,15 | 11,43 | |
| I | J | K | L | M | N | O | P | Q |
| 0.08 | 0.10 | 0.15 | 0.18 | 0.35 | 0.25 | 0.035 | 0.16 | 0.15 |
| 2,03 | 2,54 | 3,81 | 4,57 | 8,89 | 6,35 | 0,89 | 4,06 | 3,81 |

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



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