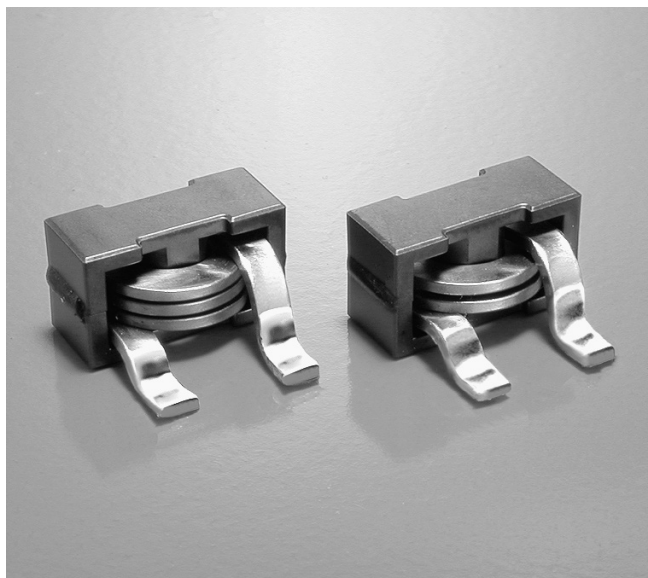


# Shielded Power Inductors – SER1590



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 <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR (mOhms) <sup>3</sup> |      | SRF typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |          |          | Irms <sup>6</sup><br>(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 A dc 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 which the inductance drops the specified amount from its value without current.
- Current that causes a 40°C temperature rise from 25°C ambient. 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](http://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 Irms current, +85°C to +125°C with derated current

**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 with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.



[www.coilcraft.com](http://www.coilcraft.com)

**US** +1-847-639-6400 [sales@coilcraft.com](mailto:sales@coilcraft.com)  
**UK** +44-1236-730595 [sales@coilcraft-europe.com](mailto:sales@coilcraft-europe.com)  
**Taiwan** +886-2-2264 3646 [sales@coilcraft.com.tw](mailto:sales@coilcraft.com.tw)  
**China** +86-21-6218 8074 [sales@coilcraft.com.cn](mailto:sales@coilcraft.com.cn)  
**Singapore** + 65-6484 8412 [sales@coilcraft.com.sg](mailto:sales@coilcraft.com.sg)

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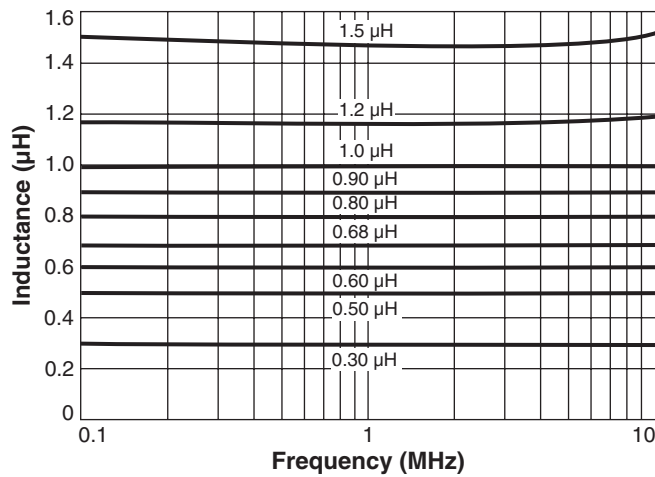
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

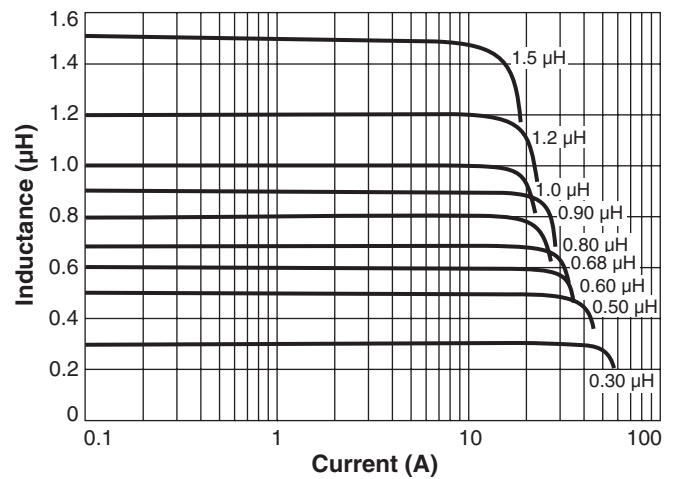


# Shielded Power Inductors – SER1590 Series

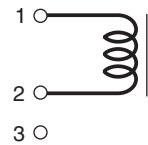
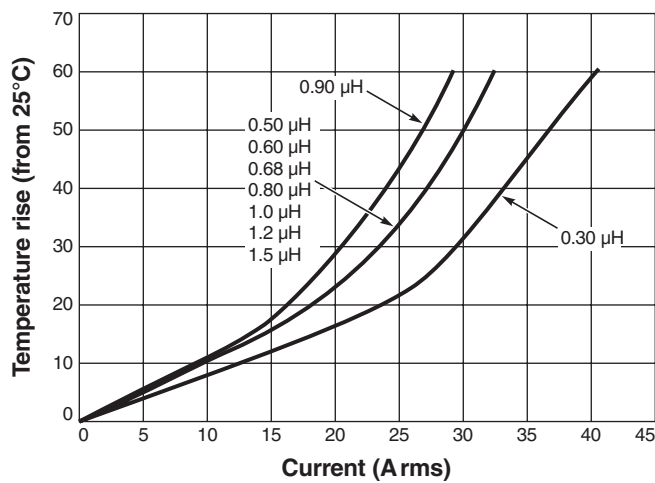
## L vs Frequency



## L vs Current

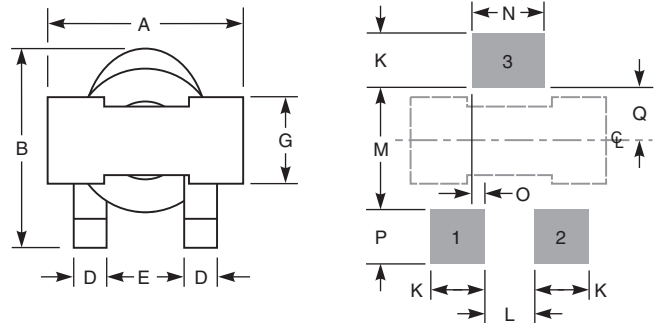


## Temperature Rise vs Current

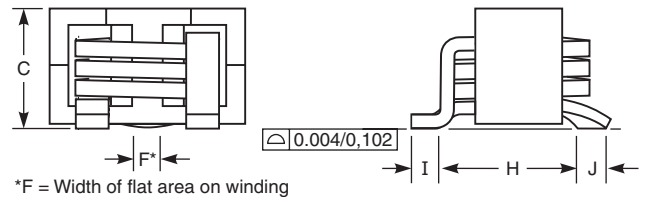
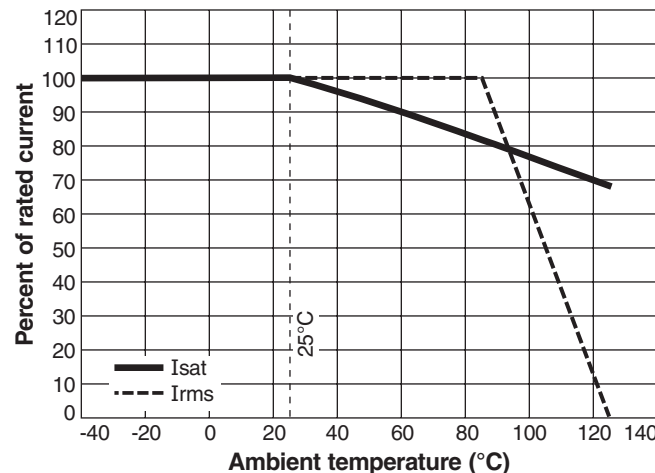


**Caution:**  
Terminal 3 is provided for mounting stability only. This terminal is connected to the winding of the inductor and must not be connected to ground or any circuitry.

## Recommended Land Pattern



## Current Derating



| A max | B max | C max | D    | E    | F    | G           | H     |      |
|-------|-------|-------|------|------|------|-------------|-------|------|
| 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  $\frac{\text{inches}}{\text{mm}}$



www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com  
UK +44-1236-730595 sales@coilcraft-europe.com  
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw  
China +86-21-6218 8074 sales@coilcraft.com.cn  
Singapore +65-6484 8412 sales@coilcraft.com.sg

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## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

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