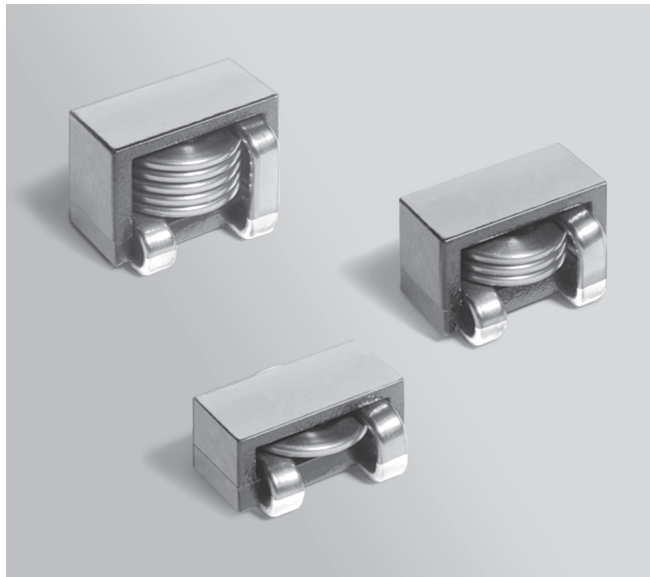




# Shielded Power Inductors – SER1400



- Designed for high current power supply applications
- Flat wire windings provide exceptionally low DCR
- Specially formed terminations provide small footprint
- Isat ratings as high as 105.9 A!
- Other inductance, DCR, height combinations are possible

**Designer's Kit C427** contains 3 each of all values

**Core material** Ferrite

**Environment** RoHS compliant, halogen free

**Terminations** RoHS compliant tin-silver over copper. Other terminations available at additional cost.

**Ambient temperature** –40°C to +125°C with Irms current, +125°C to +165°C with derated current

**Storage temperature** Component: –40°C to +125°C.

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

**PCB washing** Only pure water or alcohol recommended

## High Isat for high peak current applications

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR typ <sup>3</sup><br>(mOhms) | DCR max <sup>3</sup><br>(mOhms) | SRF typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |          |          | Irms (A) <sup>6</sup> |           | Height max<br>(inches / mm) |
|--------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|-----------------------------|
|                          |                                      |                                 |                                 |                               | 10% drop              | 20% drop | 30% drop | 20°C rise             | 40°C rise |                             |
| SER1412-301ME_           | 0.30                                 | 1.30                            | 1.43                            | 154                           | 87.0                  | 92.8     | 105.9    | 30                    | 37        | 0.498 / 12,66               |
| SER1412-501ME_           | 0.50                                 | 1.30                            | 1.43                            | 122                           | 56.1                  | 59.3     | 62.5     | 30                    | 37        | 0.498 / 12,66               |
| SER1412-681ME_           | 0.68                                 | 1.30                            | 1.43                            | 100                           | 41.2                  | 43.5     | 45.8     | 30                    | 37        | 0.498 / 12,66               |
| SER1412-102ME_           | 1.0                                  | 1.30                            | 1.43                            | 78                            | 28.9                  | 31.0     | 32.2     | 30                    | 37        | 0.498 / 12,66               |
| SER1412-152ME_           | 1.5                                  | 1.30                            | 1.43                            | 62                            | 21.8                  | 23.6     | 24.6     | 30                    | 37        | 0.498 / 12,66               |
| SER1412-202ME_           | 2.0                                  | 1.30                            | 1.43                            | 50                            | 16.9                  | 18.5     | 19.4     | 30                    | 37        | 0.498 / 12,66               |
| SER1412-362ME_           | 3.6                                  | 1.30                            | 1.43                            | 35                            | 9.6                   | 11.2     | 12.1     | 30                    | 37        | 0.498 / 12,66               |

## Low DCR for high average current applications

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR typ <sup>3</sup><br>(mOhms) | DCR max <sup>3</sup><br>(mOhms) | SRF typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |          |          | Irms (A) <sup>6</sup> |           | Height max<br>(inches / mm) |
|--------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|-----------------------------|
|                          |                                      |                                 |                                 |                               | 10% drop              | 20% drop | 30% drop | 20°C rise             | 40°C rise |                             |
| SER1408-301ME_           | 0.30                                 | 0.48                            | 0.55                            | 140                           | 43.2                  | 49.6     | 53.0     | 38                    | 42        | 0.325 / 8,26                |
| SER1408-501ME_           | 0.50                                 | 0.48                            | 0.55                            | 83                            | 25.8                  | 29.6     | 31.4     | 38                    | 42        | 0.325 / 8,26                |
| SER1408-681ME_           | 0.68                                 | 0.48                            | 0.55                            | 63                            | 18.8                  | 21.6     | 23.2     | 38                    | 42        | 0.325 / 8,26                |
| SER1408-102ME_           | 1.0                                  | 0.48                            | 0.55                            | 48                            | 12.1                  | 14.2     | 16.1     | 38                    | 42        | 0.325 / 8,26                |
| SER1410-152ME_           | 1.5                                  | 0.90                            | 0.99                            | 53                            | 16.8                  | 18.9     | 20.3     | 33                    | 39        | 0.416 / 10,56               |
| SER1410-202ME_           | 2.0                                  | 0.90                            | 0.99                            | 45                            | 12.1                  | 13.9     | 15.0     | 33                    | 39        | 0.416 / 10,56               |

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

**SER1410-202MED**

**Termination:** E = 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.

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.

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.

3. DCR measured on a Keithley 580 micro-ohmmeter or equivalent.

4. SRF measured using an Agilent/HP 4395A network analyzer and an Agilent/HP 16193A test fixture.

5. DC current at which the inductance drops the specified amount from its value without current.

6. Current that causes the specified temperature rise from 25°C ambient.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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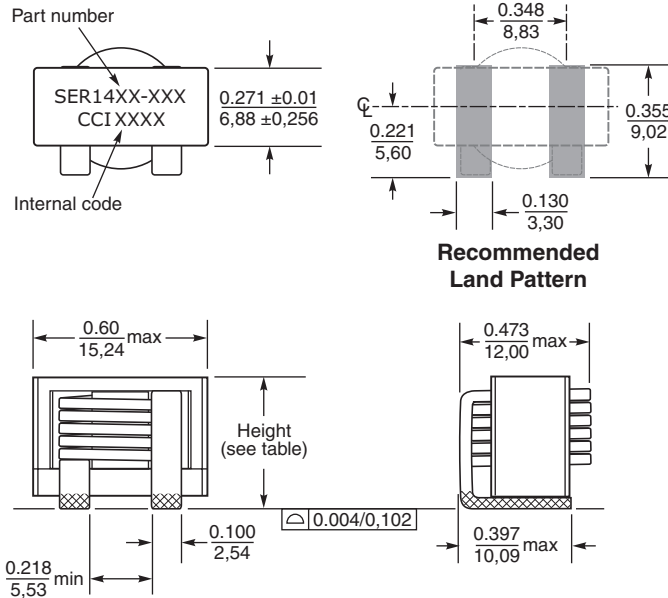
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# Shielded Power Inductors – SER1400 Series



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

| Series  | Height max<br>(inches/ mm) | Weight      |
|---------|----------------------------|-------------|
| SER1408 | 0.325 / 8.26               | 3.5 – 3.8 g |
| SER1410 | 0.416 / 10.56              | 4.8 – 5.2 g |
| SER1412 | 0.498 / 12.66              | 6.1 – 6.7 g |

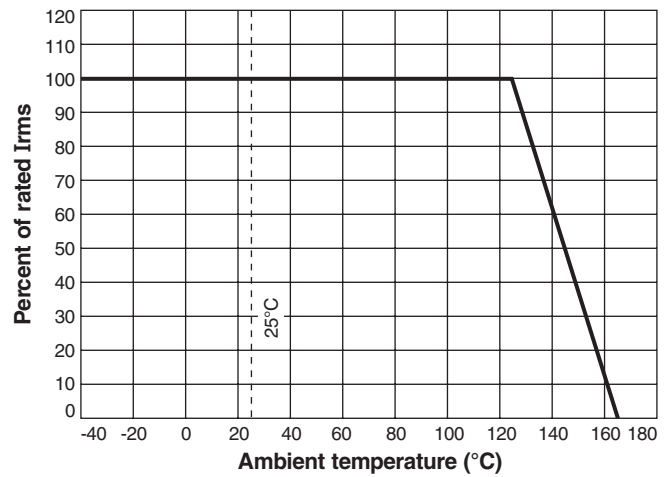
## Packaging

**SER1408** 300/13" reel Plastic tape: 32 mm wide, 0.5 mm thick, 20 mm pocket spacing, 8.6 mm pocket depth

**SER1410** 250/13" reel Plastic tape: 32 mm wide, 0.5 mm thick, 20 mm pocket spacing, 10.8 mm pocket depth

**SER1412** 250/13" reel Plastic tape: 32 mm wide, 0.5 mm thick, 20 mm pocket spacing, 12.8 mm pocket depth

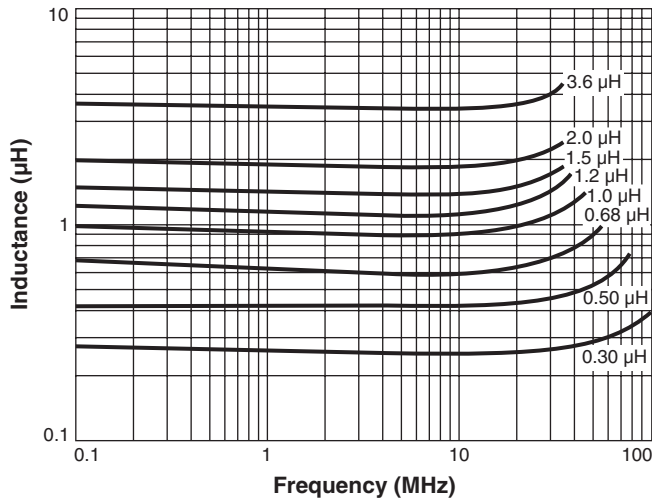
## Irms Derating



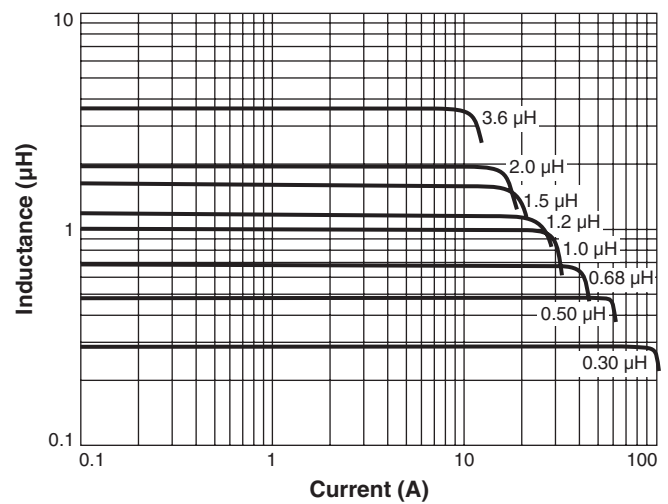


# Shielded Power Inductors – SER1400 Series

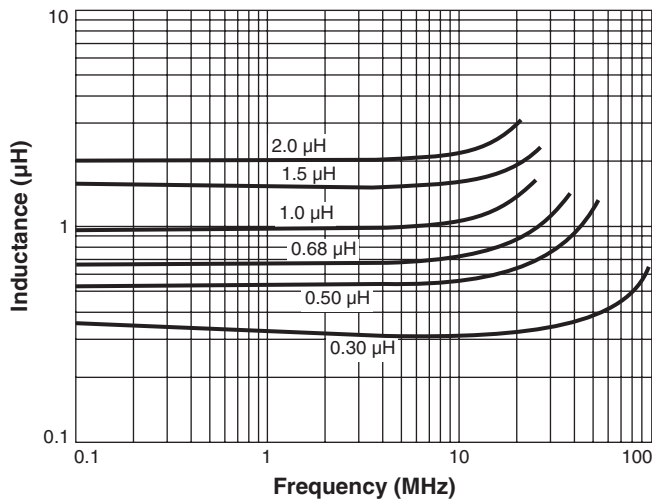
## L vs Frequency (High Isat Versions)



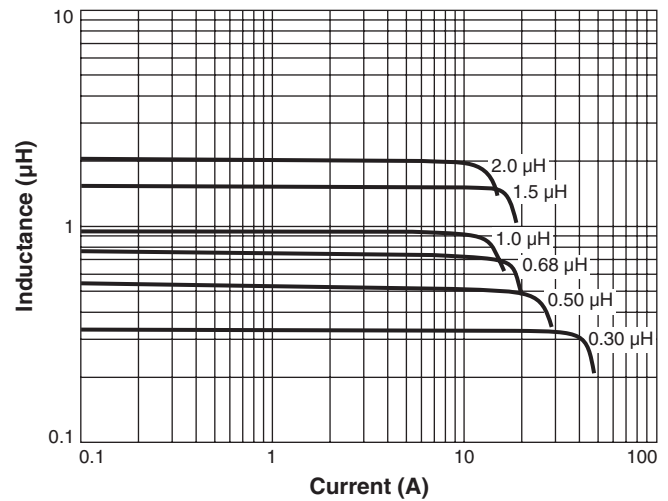
## L vs Current (High Isat Versions)



## L vs Frequency (Low DCR Versions)



## L vs Current (Low DCR Versions)



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