Shielded Power Inductors – SER80xx

- Two different DCR / Isat versions to match the requirements of a wide variety of applications
- Low DCR; excellent current handling

Core material: Ferrite
Core and winding loss: See www.coilcraft.com/coreloss

Terminations: RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3). Other terminations available at additional cost.

Weight: 0.86 – 1.0 g

Ambient temperature: –40°C to +85°C with (40°C rise) I rms current.
Maximum part temperature: +125°C (ambient + temp rise).

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 refows 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: 250/7″ reel, 1000/13″ reel; Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 5.2 mm pocket depth


Low DCR version for high average current applications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance ±20% (µH)</th>
<th>DCR (mOhm)</th>
<th>SRF typ (MHz)</th>
<th>Isat (A)</th>
<th>Irms (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>typ</td>
<td>max</td>
<td></td>
<td>10% drop</td>
<td>20% drop</td>
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<td>SER8050-501ME_</td>
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<td>40</td>
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</table>

1. When ordering, please specify termination and packaging code:

   - SER8052-103MED

   Termination: E = RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3).
   Special order: T = RoHS tin-silver-copper over copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
   Packaging: C = 7″ 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 C instead.
   D = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (1000 parts per full reel).

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A or equivalent.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using an Agilent/HP 8753D network analyzer and an Agilent/HP 16193A test fixture.

5. DC current at 25°C that causes the specified inductance drop from its value without current. Click for temperature derating information.

6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. Click for temperature derating information.

7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
SER80xx Shielded Power Inductors

High Isat version for high peak current applications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance(^2) ±20% (µH)</th>
<th>DCR (mOhm)(^3) typ</th>
<th>SRF typ(^4) (MHz)</th>
<th>Isat (A)(^5) 10% drop</th>
<th>20% drop</th>
<th>30% drop</th>
<th>Irms (A)(^6) 20°C rise</th>
<th>40°C rise</th>
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<tbody>
<tr>
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<td>5.33</td>
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<td>14.33</td>
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<td>9.02</td>
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<td>4.43</td>
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<tr>
<td>SER8052-402ME_</td>
<td>4.0</td>
<td>13.03</td>
<td>14.33</td>
<td>66</td>
<td>7.04</td>
<td>7.84</td>
<td>8.24</td>
<td>4.53</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging code:
   - **SER8052-402MED**
   - **SER8052-402MED**

   **Termination:** E = RoHS tin-silver over tin over nickel over phos bronze (pins 1 and 2); Matte tin over nickel over phos bronze (pin 3).

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

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**Typical L vs Current**

**Low DCR version**

- **SER8052-103**
- **SER8052-312**
- **SER8050-501**

**High Isat version**

- **SER8052-402**
- **SER8052-122**
- **SER8050-201**
**SER80xx Shielded Power Inductors**

**Typical L vs Frequency**

![Graph showing typical inductance vs frequency for different models of SER80xx inductors.](image)

**Typical Temperature Rise vs Current**

![Graph showing temperature rise vs current for different models of SER80xx inductors.](image)

Terminal 3 is for mounting stability only.

- **Dimensions:**
  - Height max:
    - SER8050: 0.197/5.0
    - SER8052: 0.205/5.2

**Recommended Land Pattern**

- **Recommended dimensions:**
  - 0.335/8.50 mm

**Height (See Table):**

<table>
<thead>
<tr>
<th>Model</th>
<th>Height max (in / mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SER8050</td>
<td>0.197 / 5.0</td>
</tr>
<tr>
<td>SER8052</td>
<td>0.205 / 5.2</td>
</tr>
</tbody>
</table>

**Dimensions are in:**

- **Inches**
  - 0.346 / 8.80
- **Millimeters**
  - 0.071 / 1.80

**Additional Information:**

- **RoHS/REACH Compliant**
- **Halogen Free**
- **AEC Q 200 85 °C+**
- **Recommended Land Pattern**