Shielded Power Inductors – SLC7649

- Designed for use in multi-phase VRM/VRD regulators and high current/high frequency DC/DC converters.
- Requires only 60 mm² of board space; can handle up to 100 A

**Designer’s Kit C467** contains 3 each of select values.

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant matte tin over nickel over copper.

Other terminations available at additional cost.

**Weight** 0.9 g

**Ambient temperature** -40°C to +85°C with (40°C rise) Irms 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 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** 250/7″ reel; 1000/13″ reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 5 mm pocket depth

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

---

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

<table>
<thead>
<tr>
<th>Part number</th>
<th>L (nH)</th>
<th>DCR (mOhms)</th>
<th>SRF (MHz)</th>
<th>Isat (A)</th>
<th>Irms (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLC7649S-360KL</td>
<td>36</td>
<td>0.17</td>
<td>1150</td>
<td>100</td>
<td>56</td>
</tr>
<tr>
<td>SLC7649S-500KL</td>
<td>50</td>
<td>0.17</td>
<td>900</td>
<td>84</td>
<td>56</td>
</tr>
<tr>
<td>SLC7649S-700KL</td>
<td>70</td>
<td>0.17</td>
<td>750</td>
<td>65</td>
<td>56</td>
</tr>
<tr>
<td>SLC7649S-101KL</td>
<td>100</td>
<td>0.17</td>
<td>110</td>
<td>42</td>
<td>56</td>
</tr>
<tr>
<td>SLC7649S-121KL</td>
<td>120</td>
<td>0.17</td>
<td>78</td>
<td>33</td>
<td>56</td>
</tr>
<tr>
<td>SLC7649S-151KL</td>
<td>150</td>
<td>0.17</td>
<td>67</td>
<td>27</td>
<td>56</td>
</tr>
</tbody>
</table>

5. DC current at 25°C that causes a 20% (typ) inductance drop from its value without current. Click for temperature derating information.

6. 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.

7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

---

**Irms Testing**

Irms testing was performed on 0.75 inch wide x 0.25 inch thick copper traces in still air.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
Shielded Power Inductors – SLC7649 Series

L vs Current

\[\text{Inductance (nH)} = \begin{cases} 
150 & \text{if Current} \\
120 & \text{if Frequency} \\
100 & \text{if Frequency} \\
70 & \text{if Frequency} \\
50 & \text{if Frequency} \\
36 & \text{if Frequency}
\end{cases}
\]

L vs Frequency

\[\text{Inductance (nH)} = \begin{cases} 
150 & \text{if Current} \\
120 & \text{if Frequency} \\
100 & \text{if Frequency} \\
70 & \text{if Frequency} \\
50 & \text{if Frequency} \\
36 & \text{if Frequency}
\end{cases}
\]

Recommended Land Pattern

Dimensions are in inches/mm

Points used for measuring DCR

Dash number

Internal code

XXX

Coilcraft

X

© Coilcraft Inc. 2018
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.