SMT Broadband Conical Inductors

- Designed specifically for broadband and high frequency applications.
- Operates as a series of narrow-band inductors throughout an operating frequency range of 10 MHz to 40 GHz.
- Ideal for use in ultra-wideband bias Tees, where the conical inductor provides the path for the DC bias injection or extraction while isolating the power source from the active device.
- Each surface mount inductor has a self positioning mounting bracket.
- For a “flying lead” version that allows adjustment of the mounting angle consider the BCL series

For new designs, consider the BCR as an alternative. The BCR is electrically identical, and has a much more rugged package. It features a full length cover that completely protects the coil and four mounting pads for excellent board adhesion. We will continue to manufacture and support the BCS series indefinitely.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance</th>
<th>DCR max</th>
<th>irms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±5% (µH)</td>
<td>(Ohms)</td>
<td>(mA)</td>
</tr>
<tr>
<td>BCS-531JL_</td>
<td>0.53</td>
<td>0.15</td>
<td>830</td>
</tr>
<tr>
<td>BCS-122JL_</td>
<td>1.20</td>
<td>1.05</td>
<td>200</td>
</tr>
<tr>
<td>BCS-652JL_</td>
<td>6.5</td>
<td>0.70</td>
<td>510</td>
</tr>
<tr>
<td>BCS-802JL_</td>
<td>8.0</td>
<td>3.39</td>
<td>150</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code:

   Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape
   (BCS-122JL: 500 parts per full reel; BCS-531JL and BCS-802JL: 300 parts per full reel; BCS-652JL: 200 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.

2. Inductance measured at 10 MHz, 0.1 Vrms, 0 Adc using an Agilent/HP 16193A fixture in an Agilent/HP 4287A LCR meter or equivalents.

3. Current that causes a 40°C temperature rise from 25°C ambient.

4. Electrical specifications at 25°C.

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

Terminations  Tin-silver-copper over silver-platinum-glass frit
Weights  BCS-122: 19 mg; BCS-531: 71 mg; BCS-802: 77 mg; BCS-652: 329 mg
Ambient temperature  -40°C to +85°C
Storage temperature  Component: -40°C to +85°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
Packaging  BCS-122L: 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 3.51 mm pocket depth
BCS-531L: 300/7" reel; 1500/13" reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 4.83 mm pocket depth
BCS-652L: 200/7" reel; 750/13" reel Plastic tape: 24 mm wide, 0.33 mm thick, 12 mm pocket spacing, 6.45 mm pocket depth
BCS-802L: 300/7" reel; 1500/13" reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 4.83 mm pocket depth
PCB washing  Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.
SMT Broadband Conical Inductors

BCS-122

BCS-531, BCS-802

BCS-652

Dimensions (inches / millimeters)

Recommended Land Pattern

*Pad is for mounting stability only; do not connect to circuit. Connecting to circuit may adversely affect performance.

Insertion Loss

Return Loss

Response curves measured in a bias tee configuration with an Agilent/HP 8722ES network analyzer.

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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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