SMT Broadband Conical Inductors

- Full-length cap fully protects the coil and provides a large surface for pick and place.
- The self positioning mounting bracket has four soldered pads for excellent board adhesion.
- 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 T’s, where the conical inductor provides the path for the DC bias injection or extraction while isolating the power source from the active device.
- For a “flying lead” version that allows adjustment of the mounting angle consider the BCL series

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance2 (µH)</th>
<th>DCR max (Ohms)</th>
<th>Irms3 (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCR-221JL_</td>
<td>0.22</td>
<td>0.10</td>
<td>1200</td>
</tr>
<tr>
<td>BCR-531JL_</td>
<td>0.53</td>
<td>0.15</td>
<td>1060</td>
</tr>
<tr>
<td>BCR-122JL_</td>
<td>1.20</td>
<td>1.05</td>
<td>270</td>
</tr>
<tr>
<td>BCR-162JL_</td>
<td>1.65</td>
<td>0.60</td>
<td>490</td>
</tr>
<tr>
<td>BCR-232JL_</td>
<td>2.35</td>
<td>1.61</td>
<td>270</td>
</tr>
<tr>
<td>BCR-272JL_</td>
<td>2.75</td>
<td>0.40</td>
<td>675</td>
</tr>
<tr>
<td>BCR-632JL_</td>
<td>6.35</td>
<td>0.92</td>
<td>480</td>
</tr>
<tr>
<td>BCR-652JL_</td>
<td>6.50</td>
<td>0.70</td>
<td>650</td>
</tr>
<tr>
<td>BCR-802JL_</td>
<td>8.00</td>
<td>3.25</td>
<td>230</td>
</tr>
</tbody>
</table>

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

   - L = Tin-silver-copper over silver-platinum-glass frit
   - S = Tin-lead over silver-platinum-glass frit
   - C = 7” machine-ready reel. EIA-481 embossed plastic tape. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
   - B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.

2. Inductance measured at 10 MHz, 0.1 Vrms, 0 Adc using 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
Other terminations available at additional cost.

Weights
- BCR-122: 34 mg
- BCR-221, BCR-162, BCR-232, BCR-531: 101 mg
- BCR-272, BCR-632, BCR-652: 472 mg
- BCR-802: 107 mg

Ambient temperature: −40°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
- BCR-122: 500/7″ reel; 2000/13″ reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 3.51 mm pocket depth
- BCR-162, BCR-221, BCR-232, BCR-531, BCR-802: 300/7″ reel; 1500/13″ reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 4.83 mm pocket depth
- BCR-272, BCR-632, BCR-652: 200/7″ reel; 750/13″ reel Plastic tape: 24 mm wide, 0.33 mm thick, 12 mm pocket spacing, 6.45 mm pocket depth

**SMT Broadband Conical Inductors**

**BCR-122**

- Top View
- Side View
- Front View

**BCR-162, -221, -232, -531, -802**

- Top View
- Side View
- Front View

**BCR-272, -632, -652**

- Top View
- Side View
- Front View

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**Dimensions (inches/millimeters)**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCR-122</td>
<td>0.105 ±0.010</td>
<td>0.120 ±0.010</td>
<td>0.110 ±0.010</td>
<td>0.030/0.76</td>
<td>0.070/1.78</td>
<td>0.050/1.27</td>
</tr>
<tr>
<td>BCR-162, -221, -232, -531, -802</td>
<td>0.150 ±0.010</td>
<td>0.220 ±0.010</td>
<td>0.160 ±0.010</td>
<td>0.040/1.02</td>
<td>0.150/3.81</td>
<td>0.080/2.03</td>
</tr>
<tr>
<td>BCR-272, -632, -652</td>
<td>0.220 ±0.010</td>
<td>0.440 ±0.010</td>
<td>0.220 ±0.010</td>
<td>0.050/1.27</td>
<td>0.360/9.14</td>
<td>0.140/3.56</td>
</tr>
</tbody>
</table>

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

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**Recommend Land Pattern**

- Side View
- Front View
- Top View

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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.*
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**Insertion Loss**

![Graph showing S11 (dB) vs Frequency (GHz) for Insertion Loss.]

**Return Loss**

![Graph showing S11 (dB) vs Frequency (GHz) for Return Loss.]

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

Port 1

Port 2