Capabilities Bulletin: Magnetic Components for High-load Applications

Coilcraft has more than 70 years of experience supplying magnetic components to a wide range of industries, including the following solutions for use in high-load applications:

- Transformers for use in full bridge/half bridge rectifiers capable of providing several kilowatts of power
- Common mode chokes with continuous current ratings up to 50 Amps – call to discuss even higher ratings!

As an ISO/TS-16949 certified company, Coilcraft has the quality systems in place to deliver robust, reliable solutions for your requirements. The following are a few examples of our capabilities. **Ask your Coilcraft sales engineer about custom solutions for your design requirements.**

### Converter Transformers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Power (W)</th>
<th>Turns Ratio pri : sec1 : sec2</th>
<th>Input Voltage (V)</th>
<th>Output Voltage (V)</th>
<th>Output Current (A)</th>
<th>L Primary (µH)</th>
<th>DCR Primary (mOhms)</th>
<th>Isolation (Vrms)</th>
<th>L (mm)</th>
<th>W (mm)</th>
<th>H (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLH1120</td>
<td>1120</td>
<td>1 : 0.200 : –</td>
<td>110 – 140</td>
<td>14</td>
<td>80</td>
<td>31.62</td>
<td>37.4</td>
<td>1500</td>
<td>31.1</td>
<td>34.4</td>
<td>16.9</td>
</tr>
<tr>
<td>PLH1260</td>
<td>1260</td>
<td>1 : 0.167 : 0.084</td>
<td>200 – 400</td>
<td>14</td>
<td>90</td>
<td>3510</td>
<td>76.3</td>
<td>2500</td>
<td>37.4</td>
<td>42.8</td>
<td>20</td>
</tr>
<tr>
<td>PLH3600</td>
<td>3600</td>
<td>1 : 0.833 : –</td>
<td>400</td>
<td>240 – 430</td>
<td>11</td>
<td>275</td>
<td>34.3</td>
<td>2000</td>
<td>50.6</td>
<td>53</td>
<td>26.5</td>
</tr>
<tr>
<td>PLH7200</td>
<td>7200</td>
<td>1 : 0.900 : –</td>
<td>80 – 264</td>
<td>260 – 450</td>
<td>20</td>
<td>75</td>
<td>11.41</td>
<td>2000</td>
<td>50.6</td>
<td>53</td>
<td>26.5</td>
</tr>
<tr>
<td>PLH1600</td>
<td>1600</td>
<td>1 : 0.083 : 0.083</td>
<td>96 – 192</td>
<td>8 – 16</td>
<td>200</td>
<td>2016</td>
<td>10.5</td>
<td>2000</td>
<td>50.6</td>
<td>68.5</td>
<td>36</td>
</tr>
</tbody>
</table>

### Common Mode Chokes

<table>
<thead>
<tr>
<th>Part Number</th>
<th>L min. (µH)</th>
<th>I rms (A)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH2617-15340L</td>
<td>11.05</td>
<td>40</td>
<td>26</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>CMH3923-30431L</td>
<td>300</td>
<td>31</td>
<td>39</td>
<td>38</td>
<td>23</td>
</tr>
<tr>
<td>CMV3532-10516L</td>
<td>1000</td>
<td>16</td>
<td>35</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td>CMH4530-10523L</td>
<td>1000</td>
<td>23</td>
<td>45</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>CMH3921-10534L</td>
<td>1000</td>
<td>34</td>
<td>39</td>
<td>38</td>
<td>21</td>
</tr>
<tr>
<td>CMH3921-20522L</td>
<td>2000</td>
<td>22</td>
<td>39</td>
<td>38</td>
<td>21.5</td>
</tr>
<tr>
<td>CMH3815-30516L</td>
<td>2400</td>
<td>16</td>
<td>38.5</td>
<td>38.5</td>
<td>15.5</td>
</tr>
<tr>
<td>CMH7018-10535L</td>
<td>1000</td>
<td>35</td>
<td>70</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>CMH7036-15533L</td>
<td>750</td>
<td>33</td>
<td>70</td>
<td>70</td>
<td>36</td>
</tr>
</tbody>
</table>
High Current Common Mode Chokes

- Solutions for use in a wide array of power line circuits
- Ideal for use in consumer electronics and industrial applications
- Suppression of high frequency common mode noise up to 30 MHz
- Excellent current ratings – up to 40 A
- Isolation (hipot) up to 3250 Vrms

Core material  See part number page for details
Terminations  RoHS compliant tin-silver-copper over copper
Weight  See part number page for details
Ambient temperature  –40°C to +85°C with 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 refloows at
+260°C, parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL)  1 (unlimited floor life at <30°C / 85% relative humidity)
PCB washing  Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (µH)</th>
<th>DCR (mOhms)</th>
<th>Irms (A)</th>
<th>Isolation (Vrms)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH2617-15340L</td>
<td>11.05</td>
<td>0.5</td>
<td>40</td>
<td>2500</td>
<td>26</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>CMH3923-30431L</td>
<td>300</td>
<td>1.5</td>
<td>31</td>
<td>2500</td>
<td>39</td>
<td>38</td>
<td>23</td>
</tr>
<tr>
<td>CMV3532-10516L</td>
<td>1000</td>
<td>5.0</td>
<td>16</td>
<td>2500</td>
<td>35</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td>CMH4530-10523L</td>
<td>1000</td>
<td>2.7</td>
<td>23</td>
<td>2500</td>
<td>45</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>CMH3921-10534L</td>
<td>1000</td>
<td>1.5</td>
<td>34</td>
<td>2500</td>
<td>39</td>
<td>38</td>
<td>21</td>
</tr>
<tr>
<td>CMH3921-20522L</td>
<td>2000</td>
<td>3.2</td>
<td>22</td>
<td>2500</td>
<td>39</td>
<td>38</td>
<td>21.5</td>
</tr>
<tr>
<td>CMH3815-30516L</td>
<td>2400</td>
<td>5.5</td>
<td>16</td>
<td>2500</td>
<td>38.5</td>
<td>38.5</td>
<td>15.5</td>
</tr>
<tr>
<td>CMH7018-10535L</td>
<td>1000</td>
<td>2.0</td>
<td>35</td>
<td>2500</td>
<td>70</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>CMH7036-15533L</td>
<td>750</td>
<td>2.0</td>
<td>33</td>
<td>3250</td>
<td>70</td>
<td>70</td>
<td>36</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding. Measurement details are part number specific. See part number page for details.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.
Common Mode Chokes – CMH2617-15340L

<table>
<thead>
<tr>
<th>Part number&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH)&lt;sup&gt;1&lt;/sup&gt;</th>
<th>I&lt;sub&gt;rms&lt;/sub&gt;&lt;sup&gt;2&lt;/sup&gt;</th>
<th>DCR max&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Isolation&lt;sup&gt;4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH2617-15340L</td>
<td>99.84 @ 1.7 MHz</td>
<td>11.05</td>
<td>40</td>
<td>0.5</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

**Typical Attenuation**

**Typical Impedance versus Frequency**

Recommended Land Pattern

- Epoxy

Dimensions are in inches

Packaging 96 per tray

Core material Ferrite

Weight 13.76 g

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<sup>1</sup> Dimensions are in mm
Common Mode Chokes – CMH3923-30431L

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH)</th>
<th>Irms²</th>
<th>DCR max³</th>
<th>Isolation⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH3923-30431L</td>
<td>503 @ 2.2 MHz</td>
<td>300</td>
<td>31</td>
<td>1.5</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

**Typical Attenuation**

- Differential mode
- Common mode

**Typical Impedance versus Frequency**

- Inductance (µH)
- Impedance (Ohm)

**Dimensions are in inches**

**Recommended Land Pattern**

**Packaging** 36 per tray

**Core material** Ferrite

**Weight** 53.66 g

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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.
Common Mode Chokes – CMV3532-10516L

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH), min</th>
<th>Irms² (A)</th>
<th>DCR max³ (mOhms)</th>
<th>Isolation⁴ (V rms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMV3532-10516L</td>
<td>1870 @ 8.8 MHz</td>
<td>1000</td>
<td>16</td>
<td>5</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 1 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Typical Attenuation

Typical Impedance versus Frequency

Recommended Land Pattern

Packaging 49 per tray

Core material Nanocrystalline

Weight 28.25 g
Common Mode Chokes – CMH4530-10523L

<table>
<thead>
<tr>
<th>Part number¹</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH)¹ min</th>
<th>I_rms² (A)</th>
<th>DCR max³ (mOhms)</th>
<th>Isolation⁴ (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH4530-10523L</td>
<td>1967 @ 4.9 MHz</td>
<td>1000</td>
<td>23</td>
<td>2.7</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Dimensions are in inches/mm

**Typical Attenuation**

**Typical Impedance versus Frequency**

Packaging 20 per tray

Core material Nanocrystalline

Weight 77.04 g
Common Mode Chokes – CMH3921-10534L

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH) min</th>
<th>Irms (A)</th>
<th>DCR max (mOhms)</th>
<th>Isolation (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH3921-10534L</td>
<td>1440 @ 10 MHz</td>
<td>1000</td>
<td>34</td>
<td>1.5</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.065 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.

2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

3. DCR is specified per winding.

4. Isolation (hipot) measured for 1 minutes.

5. Electrical specifications at 25°C.

**Typical Attenuation**

**Typical Impedance versus Frequency**

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**Specifications**

- **Part number**: CMH3921-10534L
- **Inductance**: 1440 @ 10 MHz
- **Irms**: 1000
- **DCR max**: 34
- **Isolation**: 1.5
- **Packaging**: 36 per tray

**Core material**: Nanocrystalline

**Weight**: 51.70 g

**Dimensions**

- **Inductance**: 1.54 ±0.02
- **DCR max**: 0.551 ±0.02
- **Isolation**: 0.315 ±0.02

**Typical Attenuation**

**Typical Impedance versus Frequency**
Common Mode Chokes CMH3921-20522L

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (µH)</th>
<th>Irms</th>
<th>DCR max (mOhms)</th>
<th>Isolation (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH3921-20522L</td>
<td>2870 @ 5.0 MHz</td>
<td>2000</td>
<td>22</td>
<td>3.2</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0.1 Vrms, on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Typical Attenuation

Typical Impedance versus Frequency

Core material: Nanocrystalline
Weight: 52.19 g

Packaging: 36 per tray

Dimensions are in inches

Recommended Land Pattern

Dimensions are in mm
Common Mode Chokes – CMH3815-30516L

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (μH)1</th>
<th>Irms2</th>
<th>DCR max3</th>
<th>Isolation4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH3815-30516L</td>
<td>1830 @ 5.7 MHz</td>
<td>2400</td>
<td>16</td>
<td>5.5</td>
<td>2500</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 1 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Typical Attenuation

Typical Impedance versus Frequency

Recommended Land Pattern

Packaging 36 per tray

Core material Nanocrystalline

Weight 30.59 g
Common Mode Chokes – CMH7018-10535L

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH) min</th>
<th>Irms²</th>
<th>DCR max³</th>
<th>Isolation⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH7018-10535L</td>
<td>1040 @ 8.2 MHz</td>
<td>1000</td>
<td>35</td>
<td>2.0</td>
<td>2500</td>
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</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.065 Vrms, 0.065 Adc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Dimensions are in

Packaging 9 per tray

Core material Nanocrystalline

Weight 107.40 g
Common Mode Chokes – CMH7036-15533L

<table>
<thead>
<tr>
<th>Common mode impedance max (Ohms)</th>
<th>Inductance (µH) min</th>
<th>I rms&lt;sup&gt;2&lt;/sup&gt; (A)</th>
<th>DCR max&lt;sup&gt;3&lt;/sup&gt; (mOhms)</th>
<th>Isolation&lt;sup&gt;4&lt;/sup&gt; (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMH7036-15533L</td>
<td>2240 @ 4.4 MHz</td>
<td>750</td>
<td>33</td>
<td>2.0</td>
</tr>
</tbody>
</table>

1. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.
2. Current per winding that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. DCR is specified per winding.
4. Isolation (hipot) measured for 1 minute.
5. Electrical specifications at 25°C.

Typical Attenuation

![Typical Attenuation Graph]

Typical Impedance versus Frequency

![Typical Impedance Graph]

Dimensions are in inches mm

Packaging 9 per tray

Core material Nanocrystalline

Weight 223.17 g

* Recommended hole diameter cutout: 0.128 / 3.25