## SMT Data Line EMI Filters

**Core material:** Ferrite  
**Terminations:** RoHS compliant tin-silver-copper over tin over nickel over phosph bronze  
**Weight:** 0.22 – 0.27 g  
**Ambient temperature:** –40°C to +85°C with 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 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  

### Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode peak impedance (kOhms)</th>
<th>Cutoff frequency (MHz)</th>
<th>Inductance (mH)</th>
<th>I_{rms} (A)</th>
<th>DCR max (Ohms)</th>
<th>Isolation (Vrms)</th>
<th>Length max (mm)</th>
<th>Width max (mm)</th>
<th>Height max (mm)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQ7584-AL</td>
<td>6.81 @ 4.1 MHz</td>
<td>760</td>
<td>2.20</td>
<td>0.65</td>
<td>0.40</td>
<td>500</td>
<td>9.4</td>
<td>5.6</td>
<td>4.8</td>
<td>2</td>
</tr>
<tr>
<td>CJ5100-AL</td>
<td>4.49 @ 9.9 MHz</td>
<td>920</td>
<td>0.47</td>
<td>0.85</td>
<td>0.24</td>
<td>500</td>
<td>9.4</td>
<td>6.0</td>
<td>4.8</td>
<td>3</td>
</tr>
<tr>
<td>CR7856-AL</td>
<td>11.11 @ 1.9 MHz</td>
<td>480</td>
<td>4.70</td>
<td>0.47</td>
<td>1.3</td>
<td>500</td>
<td>9.4</td>
<td>5.5</td>
<td>4.9</td>
<td>4</td>
</tr>
</tbody>
</table>

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### Packaging

- **CQ7584-AL:** 250/7″ reel; 1000/13″ reel  
- **CJ5100-AL:** 250/7″ reel; 1000/13″ reel  
- **CR7856-AL:** 250/7″ reel; 1000/13″ reel  

### PCB Washing

Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.
SMT Data Line EMI Filter – CQ7584-AL

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (kOhms)</th>
<th>Cutoff frequency (MHz)</th>
<th>Inductance (mH)</th>
<th>Irms (A)</th>
<th>DCR max (Ohms)</th>
<th>Isolation (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQ7584-AL_</td>
<td>6.81 @ 4.4 MHz</td>
<td>760</td>
<td>2.20</td>
<td>0.65</td>
<td>0.40</td>
<td>500</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code:

   **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 (525 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. Frequency at which the differential mode attenuation equals 3 dB
3. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.
4. 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.
5. DCR is specified per winding.
6. Isolation (hipot) measured for two seconds.
7. Electrical specifications at 25°C.

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

**Typical Attenuation**

**Typical Impedance versus Frequency**
SMT Data Line EMI Filter – CJ5100-AL

1. When ordering, please specify packaging code:

**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. Frequency at which the differential mode attenuation equals 3 dB

3. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4263B LCR meter or equivalent.

4. 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.

5. DCR is specified per winding.

6. Isolation (hipot) measured for two seconds.

7. Electrical specifications at 25°C.

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

### Table: Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (kOhms)</th>
<th>Cutoff frequency (MHz)</th>
<th>Inductance (mH) nom</th>
<th>Inductance (mH) min</th>
<th>Irms (A)</th>
<th>DCR max (Ohms)</th>
<th>Isolation (Vrms)</th>
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</thead>
<tbody>
<tr>
<td>CJ5100-AL</td>
<td>4.49 @ 9.9MHz</td>
<td>920</td>
<td>0.47</td>
<td>0.329</td>
<td>0.85</td>
<td>0.24</td>
<td>500</td>
</tr>
</tbody>
</table>

### Typical Attenuation

![Typical Attenuation Graph]

**Dimensions are in inches**

![Recommended Land Pattern]

**US** +1-847-639-6400 sales@coilcraft.com
**UK** +44-1236-730595 sales@coilcraft-europe.com
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**China** +86-21-6218 8074 sales@coilcraft.com.cn
**Singapore** +65-6484 8412 sales@coilcraft.com.sg

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Specification subject to change without notice.
Please check web site for latest information.
SMT Data Line EMI Filter – CR7856-AL

1. When ordering, please specify packaging code:
   - **包装**: 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. Frequency at which the differential mode attenuation equals 3 dB
3. Inductance shown for each winding, measured at 10 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4263B LCR meter or equivalent.
4. 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.
5. DCR is specified per winding.
6. Isolation (hipot) measured for two seconds.
7. Electrical specifications at 25°C.

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