SMT Data Line EMI Filters

- Low profile (<5.0 mm) compact surface mount packages
- Ideal for use to suppress up to 100 MHz common mode noise for general differential signal line filtering
- Provides over 40 dB common mode noise attenuation
- Inductances from 0.47 mH to 4.7 mH
- Up to 0.85 Arms
- 500 Vrms Isolation (hipot)
- Upon request, additional values may be available for particular applications

<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 rm s (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>
</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>
</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>
</tr>
<tr>
<td>CR7856-AL</td>
<td>11.11 @ 1.9 MHz</td>
<td>460</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>
</tr>
</tbody>
</table>

Core material: Ferrite
Terminations: RoHS compliant tin-silver-copper over tin over nickel over phos bronze
Weight: 0.22 – 0.27 g
Ambient temperature: -40°C to +85°C with I rm s 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:
- CQ7584-AL: 250/7” reel; 1000/13” reel, Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 4.8 mm pocket depth
- CJ5100-AL: 250/7” reel; 1000/13” reel, Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 4.9 mm pocket depth
- CR7856-AL: 250/7” reel; 1000/13” reel, Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 4.8 mm pocket depth

## SMT Data Line EMI Filter – CQ7584-AL

<table>
<thead>
<tr>
<th>Part number</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>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:

- **C** = 7" machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel). 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.
- **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 Attenuation Diagram](attachment:image.png)

### Typical Impedance versus Frequency

![Typical Impedance Diagram](attachment:image.png)

**Dimensions are in inches**
SMT Data Line EMI Filter – CJ5100-AL

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**Typical Attenuation**

**Typical Impedance versus Frequency**

**Recommended Land Pattern**

Dimensions are in inches/mm

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**Specifications:**
- **Inductance:** 0.280 ±0.004 @ 9.9MHz
- **Impedance:** 5100-AL
- **Parts:** CJ5100-AL
- **DCR max:** 0.098 ±0.004 (kOhms) (MHz)
- **Isolation (Vrms):** 2,5 ±0,10
- **Common mode Cutoff:** 0.289 ±0.004 (mH)
- **Part impedance frequency:** 2,5 ±0,10
- **Inductance (mH):** 0.112 ±0.004 (kHz)
- **DCR max:** 0.236 ±0.004 (Vrms)
- **Isolation (Vrms):** 500

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Coilcraft Inc. 2020

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.
## SMT Data Line EMI Filter – CR7856-AL

<table>
<thead>
<tr>
<th>Part number</th>
<th>Common mode impedance max (kOhms)</th>
<th>Cutoff frequency (MHz)</th>
<th>Inductance (mH)$^3$</th>
<th>Irms$^4$</th>
<th>DCR max$^5$</th>
<th>Isolation$^6$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR7856-AL_</td>
<td>11.11 @ 1.9 MHz</td>
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### Typical Attenuation

![Typical Attenuation Graph](image)

### Typical Impedance versus Frequency

![Typical Impedance Graph](image)

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