Data and signal line chokes

Common-mode chokes, ring core
42 V AC / 80 V DC, 0.2 ... 6 mH, 100 mA, +60 °C

Series/Type: B82791G14
Date: October 2008, October 2011
**Data and signal line chokes**

**B82791G14**

**Common-mode chokes, ring core**

**Rated voltage** 42 V AC/ 80 V DC  
**Rated inductance** 0.2 mH to 6 mH  
**Rated current** 100 mA

**Construction**
- Current-compensated ring core quad choke  
- Ferrite core  
- Polycarbonate case (UL 94 V-0)

**Features**
- Without potting  
- Suitable for automatic insertion  
- Suitable for wave soldering  
- RoHS-compatible

**Applications**
Suppression of asymmetrical interference coupled in on data lines, already effective at 10 kHz, e.g. in:
- Telephone lines (analog, ISDN)  
- Interfaces with balance-to-ground data transmission

**Terminals**
- Base material CuNi18Zn20  
- Layer composition Ni, Sn  
- Hot-dipped

**Marking**
Manufacturer, ordering code, rated voltage, rated inductance, rated current, graphic symbol, date of manufacture (MMYY)

**Packing**
Cardboard box

Please read *Cautions and warnings* and *Important notes* at the end of this document.
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Common-mode chokes, ring core

Dimensional drawing and pin configuration

![Diagram of dimensional drawing and pin configuration]

Tolerances to ISO 2768-M unless otherwise noted. Dimensions in mm.

Technical data and measuring conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage $V_{R}$</td>
<td>$42 \text{ V AC (50/60 Hz)} / 80 \text{ V DC}$</td>
</tr>
<tr>
<td>Rated temperature $T_{R}$</td>
<td>+60 °C</td>
</tr>
<tr>
<td>Rated current $I_{R}$</td>
<td>Referred to 50 Hz and rated temperature</td>
</tr>
<tr>
<td>Rated inductance $L_{R}$</td>
<td>Measured with Agilent 4284A at 0.1 mA, 20 °C</td>
</tr>
<tr>
<td></td>
<td>Measuring frequency: $L_{R} \leq 1 \text{ mH} = 100 \text{ kHz}$</td>
</tr>
<tr>
<td></td>
<td>$L_{R} &gt; 1 \text{ mH} = 10 \text{ kHz}$</td>
</tr>
<tr>
<td></td>
<td>Inductance is specified per winding.</td>
</tr>
<tr>
<td>Inductance tolerance</td>
<td>$\pm 30%$ at $+20 \text{ °C}$</td>
</tr>
<tr>
<td>Inductance decrease $\Delta L/L_{D}$</td>
<td>$&lt; 10%$ at DC magnetic bias with $I_{R}$, $+20 \text{ °C}$</td>
</tr>
<tr>
<td>Stray inductance $L_{\text{stray,typ}}$</td>
<td>Measured with Agilent 4284A at 5 mA, $+20 \text{ °C}$, typical values</td>
</tr>
<tr>
<td></td>
<td>Measuring frequency: $L_{R} \leq 1 \text{ mH} = 100 \text{ kHz}$</td>
</tr>
<tr>
<td></td>
<td>$L_{R} &gt; 1 \text{ mH} = 10 \text{ kHz}$</td>
</tr>
<tr>
<td>DC resistance $R_{\text{typ}}$</td>
<td>Measured at $+20 \text{ °C}$, typical values</td>
</tr>
<tr>
<td>Solderability (lead-free)</td>
<td>Sn96.5Ag3.0Cu0.5: $(+245 \pm 5) \text{ °C}$, $(3 \pm 0.3) \text{ s}$</td>
</tr>
<tr>
<td></td>
<td>Wetting of soldering area $\geq 95%$</td>
</tr>
<tr>
<td></td>
<td>(to IEC 60068-2-20, test Ta)</td>
</tr>
<tr>
<td>Resistance to soldering heat</td>
<td>$(+260 \pm 5) \text{ °C}$, $(10 \pm 1) \text{ s}$</td>
</tr>
<tr>
<td>(wave soldering)</td>
<td>(to IEC 60068-2-20, test Tb)</td>
</tr>
<tr>
<td>Climatic category</td>
<td>40/125/56 (to IEC 60068-1)</td>
</tr>
<tr>
<td>Storage conditions (packaged)</td>
<td>$-25 \text{ °C} \ldots +40 \text{ °C}$, $\leq 75% \text{ RH}$</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 4 g</td>
</tr>
</tbody>
</table>
Characteristics and ordering codes

<table>
<thead>
<tr>
<th>L_R</th>
<th>L_stray_typ</th>
<th>I_R</th>
<th>R_typ</th>
<th>V_test</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>mH</td>
<td>nH</td>
<td>mA</td>
<td>mΩ</td>
<td>V DC, 2 s</td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td>150</td>
<td>100</td>
<td>300</td>
<td>750</td>
<td>B82791G0014A017</td>
</tr>
<tr>
<td>4.7</td>
<td>500</td>
<td>100</td>
<td>850</td>
<td>750</td>
<td>B82791G0014A016</td>
</tr>
<tr>
<td>6</td>
<td>800</td>
<td>100</td>
<td>1200</td>
<td>750</td>
<td>B82791G0014A012</td>
</tr>
</tbody>
</table>

1) Types with higher rated current on request.

Impedance $|Z|$ versus frequency $f$
measured with windings in parallel at 20 °C, typical values

Current derating $I_{op}/R$
versus ambient temperature

1) Types with higher rated current on request.

Please read Cautions and warnings and Important notes at the end of this document.
Cautions and warnings

Current-compensated ring core double chokes

Please note the recommendations in our Inductors data book (latest edition) and in the data sheets.

- Particular attention should be paid to the derating curves given there. Derating must be applied in the case the ambient temperature in application exceeds the rated temperature of the component.
- Ensure the operation temperature of the component in application, which is the sum of the ambient temperature and the temperature rise owing to losses (“self-heating”), not to exceed the maximum value specified in the climatic category.
- The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.

If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.

The following points must be observed if the components are potted in customer applications:

- Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
- It is necessary to check whether the potting material used attacks or destroys the wire insulation, plastics or glue.
- The effect of the potting material can change the high-frequency behaviour of the components.

Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.

Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

Please read Cautions and warnings and Important notes at the end of this document.
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