Data and signal line chokes

Common-mode chokes, ring core
4.7 … 68 mH, 200 … 700 mA, 40 °C

Series/Type: B82720H15
Date: October 2008
Rated voltage 42 V AC/80 V DC
Rated inductance 4.7 mH to 68 mH
Rated current 200 mA to 700 mA

Construction
- Current-compensated ring core double choke
- Ferrite core
- Polycarbonate case (UL 94 V-0)
- Polyurethane potting (UL 94 V-0)

Features
- Suitable for automatic insertion
- Suitable for wave soldering
- RoHS-compatible

Applications
- Telecom switching systems
- Terminal systems
- Measuring and control lines

Terminals
- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Lead spacing 10 × 7.5 (mm)

Marking
Manufacturer, ordering code, rated inductance, rated current, date of manufacture (YYWWD)

Delivery mode
Cardboard box
Data and signal line chokes

Common-mode chokes, ring core

Dimensional drawing and pin configuration

![Dimensional drawing and pin configuration diagram]

Technical data and measuring conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage ( V_R )</td>
<td>42 V AC (50/60 Hz) / 80 V DC</td>
</tr>
<tr>
<td>Rated temperature ( T_R )</td>
<td>40 °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 10 kHz, 0.1 mA, 20 °C</td>
</tr>
<tr>
<td>Inductance tolerance</td>
<td>(-30%/+50%) at 20 °C</td>
</tr>
<tr>
<td>Inductance decrease ( \Delta L/L_0 )</td>
<td>&lt; 10% at DC magnetic bias with ( I_R ), 20 °C</td>
</tr>
<tr>
<td>Stray inductance ( L_{\text{stray,typ}} )</td>
<td>Measured with Agilent 4284A at 10 kHz, 5 mA, 20 °C, typical values</td>
</tr>
<tr>
<td>DC resistance ( R_{\text{typ}} )</td>
<td>Measured at 20 °C, typical values, specified per winding</td>
</tr>
<tr>
<td>Solderability (lead-free)</td>
<td>Sn96.5Ag3.0Cu0.5: (245 ±5) °C, (3 ±0.3) s</td>
</tr>
<tr>
<td>Wetting of soldering area</td>
<td>≥ 95%</td>
</tr>
<tr>
<td>(to IEC 60068-2-20, test Ta)</td>
<td></td>
</tr>
<tr>
<td>Resistance to soldering heat</td>
<td>(260 ±5) °C, (10 ±1) 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 °C … +40 °C, ≤ 75% RH</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 2.1 g</td>
</tr>
</tbody>
</table>
Characteristics and ordering codes

<table>
<thead>
<tr>
<th>$L_R$</th>
<th>$L_{stray_typ}$</th>
<th>$I_R^{1)}$</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>4.7</td>
<td>300</td>
<td>700</td>
<td>500</td>
<td>750</td>
<td>B82720H0015A016</td>
</tr>
<tr>
<td>10</td>
<td>400</td>
<td>600</td>
<td>700</td>
<td>750</td>
<td>B82720H0015A025</td>
</tr>
<tr>
<td>28</td>
<td>700</td>
<td>400</td>
<td>1200</td>
<td>750</td>
<td>B82720H0015A028</td>
</tr>
<tr>
<td>47</td>
<td>1000</td>
<td>300</td>
<td>2700</td>
<td>750</td>
<td>B82720H0015A030</td>
</tr>
<tr>
<td>68</td>
<td>1200</td>
<td>200</td>
<td>3300</td>
<td>750</td>
<td>B82720H0015A035</td>
</tr>
</tbody>
</table>

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

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

1) Types with higher rated current on request.
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.
- 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.
Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application.** These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out that **such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.** As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed.**

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous).** Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.

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