Transformers

DC/DC converters
E 6.3

Series/Type: B78304B*A003
Date: October 2012
Construction
- E 6.3 ferrite core
- Cover cap
- 6 gullwing terminals

Features
- Very small size
- Low stray inductance, low winding capacitance, low DC resistance

Applications
- Pulse transformers
- Broadband transformers
- Drive transformers for power semiconductors
- Low-power DC/DC converters (B78304B1016A003)

Delivery mode and packing unit
- 16-mm blister tape, reel 330 mm
- Packing unit: 900 pcs./reel

Pinning

Dimenisonal drawing

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Pinning

Dimensions in mm
Technical data and measuring conditions

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main inductance $L$ (1-6)</td>
<td>10 kHz, 10 mV</td>
</tr>
<tr>
<td>Inductance tolerance</td>
<td>$\pm$55%</td>
</tr>
<tr>
<td>Stray inductance $L_{\text{stray}}$ (1-6)</td>
<td>10 kHz, 10 mV, short 2-5, 3-4</td>
</tr>
<tr>
<td>Resistance $R_{\text{DC}}$ (1-6)</td>
<td>Measured on 1-6</td>
</tr>
<tr>
<td>Capacitance $C_i$ (1-2)</td>
<td>10 kHz, 100 mV</td>
</tr>
<tr>
<td>Resonance frequency $f_{\text{res}}$</td>
<td>Primary winding 1-6</td>
</tr>
<tr>
<td>Test voltage $V_{\text{test}}$</td>
<td>50 Hz, 1 s</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>$-40 , ^\circ\text{C} \ldots +85 , ^\circ\text{C}$</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 0.6 g</td>
</tr>
</tbody>
</table>

Characteristics and ordering codes

<table>
<thead>
<tr>
<th>$L$ (mH)</th>
<th>$N_1 : N_2 : N_3$</th>
<th>$L_{\text{stray}}$ (µH)</th>
<th>$R_{\text{DC}}$ (Ω)</th>
<th>$C_i$ (pF)</th>
<th>$B_{3\text{dB}}$ (MHz)</th>
<th>$f_{\text{res}}$ (MHz)</th>
<th>$V_{\text{test}}$ (V AC)</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>1:1:1</td>
<td>0.3</td>
<td>&lt; 0.2</td>
<td>15</td>
<td>0.05 ... 60</td>
<td>Approx. 9.0</td>
<td>500</td>
<td>B78304B1030A003</td>
</tr>
<tr>
<td>1.0</td>
<td>1:1:1</td>
<td>1.0</td>
<td>&lt; 0.9</td>
<td>30</td>
<td>0.03 ... 23</td>
<td>Approx. 4.0</td>
<td>500</td>
<td>B78304B1031A003</td>
</tr>
<tr>
<td>10.0</td>
<td>1:1:1</td>
<td>4.0</td>
<td>&lt; 6.0</td>
<td>80</td>
<td>0.01 ... 1.6</td>
<td>Approx. 0.2</td>
<td>500</td>
<td>B78304B1032A003</td>
</tr>
<tr>
<td>4.3</td>
<td>1:0.21:0.21</td>
<td>20.0</td>
<td>&lt; 6.0</td>
<td>—</td>
<td>—</td>
<td>&gt; 0.6</td>
<td>500</td>
<td>B78304B1016A003</td>
</tr>
</tbody>
</table>
Cautions and warnings

■ 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.
  Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.

■ 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.
The following applies to all products named in this publication:

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Release 2018-10