EF coil formers

Series/Type: E 30_15_7

The following products presented in this data sheet are being withdrawn.

<table>
<thead>
<tr>
<th>Ordering Code</th>
<th>Substitute Product</th>
<th>Date of Withdrawal</th>
<th>Deadline Last Orders</th>
<th>Last Shipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B66232A1114T001</td>
<td>B66232B1114T001</td>
<td>2010-01-29</td>
<td>2010-04-30</td>
<td>2010-07-30</td>
</tr>
</tbody>
</table>

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.
Delivery mode: single units

**Magnetic characteristics** (per set)

\[ \Sigma I/A = 1.12 \text{ mm}^{-1} \]
\[ I_e = 67 \text{ mm} \]
\[ A_e = 60 \text{ mm}^2 \]
\[ A_{\text{min}} = 49 \text{ mm}^2 \]
\[ V_e = 4000 \text{ mm}^3 \]

Approx. weight 22 g/set

**Ungapped**

<table>
<thead>
<tr>
<th>Material</th>
<th>( A_L ) value nH</th>
<th>( \mu_e )</th>
<th>( P_V ) W/set</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>N30</td>
<td>3100 +30/–20%</td>
<td>2760</td>
<td>B66319G0000X130</td>
<td></td>
</tr>
<tr>
<td>N27</td>
<td>1700 +30/–20%</td>
<td>1510 &lt; 0.81 (200 mT, 25 kHz, 100 °C)</td>
<td>B66319G0000X127</td>
<td></td>
</tr>
<tr>
<td>N87</td>
<td>1900 +30/–20%</td>
<td>1690 &lt; 2.20 (200 mT, 100 kHz, 100 °C)</td>
<td>B66319G0000X187</td>
<td></td>
</tr>
</tbody>
</table>

**Gapped**

<table>
<thead>
<tr>
<th>Material</th>
<th>( g ) mm</th>
<th>( A_L ) value approx. nH</th>
<th>( \mu_e )</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>N27,</td>
<td>0.10 ±0.02</td>
<td>460</td>
<td>410</td>
<td>B66319G0100X1**</td>
</tr>
<tr>
<td>N87</td>
<td>0.18 ±0.02</td>
<td>300</td>
<td>265</td>
<td>B66319G0180X1**</td>
</tr>
<tr>
<td></td>
<td>0.34 ±0.02</td>
<td>195</td>
<td>175</td>
<td>B66319G0340X1**</td>
</tr>
</tbody>
</table>

The \( A_L \) value in the table applies to a core set comprising one ungapped core (dimension \( g = 0 \)) and one gapped core (dimension \( g > 0 \)).

**Calculation factors** (for formulas, see “E cores: general information”)

<table>
<thead>
<tr>
<th>Material</th>
<th>Relationship between ( A_L ) value and air gap</th>
<th>Calculation of saturation current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( K1 ) (25 °C) ( K2 ) (25 °C) ( K3 ) (25 °C) ( K4 ) (25 °C) ( K3 ) (100 °C) ( K4 ) (100 °C)</td>
<td></td>
</tr>
<tr>
<td>N27</td>
<td>90 (-0.708) 156 (-0.847) 144 (-0.865)</td>
<td></td>
</tr>
<tr>
<td>N87</td>
<td>90 (-0.708) 154 (-0.796) 140 (-0.873)</td>
<td></td>
</tr>
</tbody>
</table>

Validity range: \( K1, K2: 0.10 \text{ mm} < s < 2.00 \text{ mm} \)

K3, K4: 560 nH < \( A_L \) < 60 nH

Please read **Cautions and warnings** and **Important notes** at the end of this document.
Coil former (magnetic axis horizontal or vertical)

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F  max. operating temperature 155 °C), color code black
B66232A, B: Valox 420-SEO® [E45329 (M)], GE PLASTICS B V
B66232J: Pocan B4235® [E45329 (M)], LANXESS AG
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 s
Winding: see Data Book 2007, chapter “Processing notes, 2.1”
Squared pins.

Yoke
Material: Stainless spring steel (0.4 mm)

<table>
<thead>
<tr>
<th>Coil former</th>
<th>Sections</th>
<th>A_N mm²</th>
<th>l_N mm</th>
<th>A_R value μΩ</th>
<th>Pins</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>1</td>
<td>90</td>
<td>56</td>
<td>21</td>
<td>14</td>
<td>B66232B1114T001</td>
</tr>
<tr>
<td>Vertical</td>
<td>1</td>
<td>90</td>
<td>56</td>
<td>21</td>
<td>12</td>
<td>B66232J1112T001</td>
</tr>
<tr>
<td>Yoke</td>
<td></td>
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<td></td>
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<td></td>
<td>B66232A2010X000</td>
</tr>
</tbody>
</table>

**Horizontal version**

![Diagram of horizontal version](image-url)

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

Hole arrangement
View in mounting direction

Yoke

Please read Cautions and warnings and Important notes at the end of this document.
Mechanical stress and mounting
Ferrite cores have to meet mechanical requirements during assembling and for a growing number of applications. Since ferrites are ceramic materials one has to be aware of their special behavior under mechanical load.

Just like any ceramic material, ferrite cores are brittle and sensitive to any shock, fast changing or tensile load. Especially fast cooling rates under ultrasonic cleaning, high static and cyclic loads can cause cracks or failure of the ferrite cores.

For detailed information see Data Book 2007, chapter "General - Definitions, 8.1".

Effects of core combination on $A_L$ value
Stresses in the core affect not only the mechanical but also the magnetic properties. It is apparent that the initial permeability is dependent on the stress state of the core. The higher the stresses are in the core, the lower the value for the initial permeability. Thus, the embedding medium should offer the greatest possible elasticity.

For detailed information see Data Book 2007, chapter "General - Definitions, 8.2".

Heating up
Ferrites can run hot during operation at higher flux densities and higher frequencies.

NiZn-materials
The magnetic properties of NiZn-materials can change irreversibly when exposed to strong magnetic fields.

Processing notes
– The start of the winding process should be soft. Otherwise, the flanges may be destroyed.
– Excessive winding forces may damage the flanges or squeeze the tube so that the cores can no longer be mounted.
– Excessive soldering time at high temperature (>300 °C) may affect coplanarity or pin arrangement.
– Not following the processing notes for soldering of the J-leg terminals may cause solderability problems at the transformer because of contamination with tin oxide (SnO) from the tin bath or burned insulation from the wire. For detailed information see Data Book 2007, chapter "Processing notes, 2.2".
– The dimensions of the pin hole arrangement are fixed and should be understood as an ideal recommendation for drilling the printed circuit board. In order to avoid problems when mounting the transformer, customers should make allowances for manufacturing tolerances in the drilling and pick-and-place processes by increasing the diameter of the pin holes.
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, EPCOS is 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 an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

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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.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, the products described in this publication may change from time to time. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

We also reserve the right to discontinue production and delivery of products. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

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