

# **Ferrites and accessories**

E 25/13/7 (EF 25) Core and accessories

Series/Type:B66317, B66208Date:September 2006, January 2010

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### Core

B66317

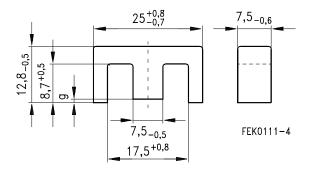
To IEC 61246

Delivery mode: single units

### Magnetic characteristics (per set)

 $\begin{array}{ll} \Sigma I/A &= 1.1 \mbox{ mm}^{-1} \\ I_e &= 57.5 \mbox{ mm} \\ A_e &= 52.5 \mbox{ mm}^2 \\ A_{min} &= 51.5 \mbox{ mm}^2 \\ V_e &= 3020 \mbox{ mm}^3 \end{array}$ 

Approx. weight 16 g/set



### Ungapped

Material	A <sub>L</sub> value nH	μ <sub>e</sub>	P <sub>V</sub> W/set	Ordering code
N30	2900 +30/–20%	2530		B66317G0000X130
N27	1750 +30/–20%	1520	< 0.59 (200 mT, 25 kHz, 100 °C)	B66317G0000X127
N87	1850 +30/–20%	1620	< 1.60 (200 mT, 100 kHz, 100 °C)	B66317G0000X187

### Gapped

Material	g mm	A <sub>L</sub> value approx. nH	μ <sub>e</sub>	Ordering code ** = 27 (N27) = 87 (N87)
N27,	0.10 ±0.02	489	425	B66317G0100X1**
N87	0.16 ±0.02	347	302	B66317G0160X1**
	0.25 ±0.02	250	218	B66317G0250X1**
	0.50 ±0.05	151	131	B66317G0500X1**
	1.00 ±0.05	91	79	B66317G1000X1**

The A<sub>L</sub> value in the table applies to a core set comprising one ungapped core (dimension g = 0) and one gapped core (dimension g > 0).

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Core

Calculation factors (for formulas, see "E cores: general information")

Material	Relationship between air gap – A <sub>L</sub> value		Calculation of saturation current				
	K1 (25 °C)	K2 (25 °C)	K3 (25 °C)	K4 (25 °C)	K3 (100 °C)	K4 (100 °C)	
N27	90	-0.731	139	-0.847	129	-0.865	
N87	90	-0.731	139	-0.796	125	-0.873	

Validity range:

K1, K2: 0.10 mm < s < 2.00 mm K3, K4: 60 nH <  $A_{\rm L}$  < 570 nH

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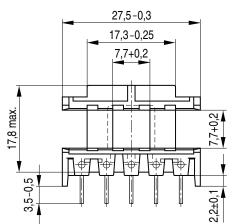
### Accessories

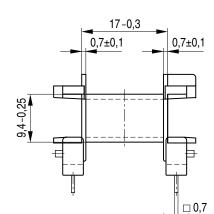
### Coil former (magnetic axis horizontal or vertical)

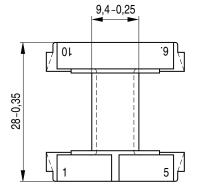
Material:GFR polyterephthalate, UL 94 V-0, insulation class to IEC 60085:<br/>B66208B, X: F  $\triangleq$  max. operating temperature 155 °C, color code black<br/>Valox 420-SE0® [E45329 (M)], GE PLASTICS B V<br/>B66208-W: H  $\triangleq$  max. operating temperature 180 °C, color code black<br/>Rynite FR 530® [E41938 (M)], E I DUPONT DE NEMOURS & CO INCSolderability:to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 sResistance tosoldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 sWinding:see Data Book 2007, chapter "Processing notes, 2.1"Squared pins.YokeMaterial: Stainless spring steel (0.25 mm)

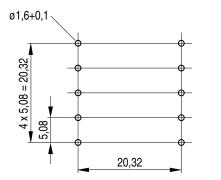
Coil former						Ordering code
Version	Sections	A <sub>N</sub> mm <sup>2</sup>	l <sub>N</sub> mm	$A_R$ value $\mu\Omega$	Pins	
Horizontal	1	61	50	28	10	B66208B1110T001
Vertical	1	61	50	28	10	B66208X1010T001 B66208W1010T001
Yoke (ordering code per piece, 2 are required)						B66208A2010X000

### Horizontal version (B66208B)









Hole arrangement View in mounting direction

FEK0352-I

Please read *Cautions and warnings* and *Important notes* at the end of this document. Downloaded from Elcodis.com electronic components distributor

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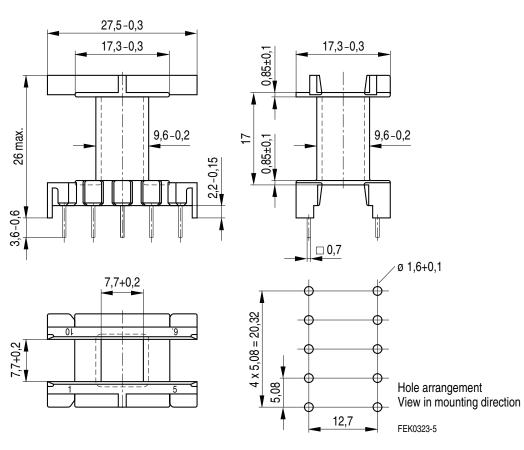
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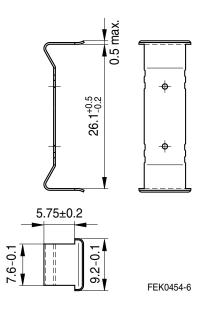
Accessories

B66208

## Vertical version (B66208W, B66208X)



Yoke



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#### Accessories

B66208

### Coil former for SMPS transformers with line isolation

Material:GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:<br/>F  $\triangleq$  max. operating temperature 155 °C), color code black<br/>Pocan B4235® [E245249 (M)], LANXESS AGSolderability:to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 sResistance to soldering heat:to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 sWinding:see Data Book 2007, chapter "Processing notes, 2.1"

#### Squared pins.

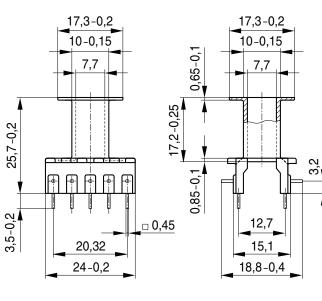
Yoke	Material: Nickel silver (0.3 mm) with ground terminal
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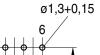
Coil former	Ordering code				
Sections	A <sub>N</sub> mm <sup>2</sup>	l <sub>N</sub> mm	$A_R$ value $\mu\Omega$	Pins	
1	56.9	69.2	41.8	9	B66208K1009T001
Yoke (ordering code per piece)					B66208A2003X000

### **Coil former**

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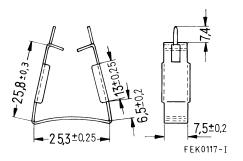




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Hole arrangement View in mounting direction

FEK0397-I



Yoke

20,32



Ferrites and accessories

### Cautions and warnings

### 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<sub>L</sub> 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.



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