



## **Ferrites and accessories**

EP 13  
Core and accessories

**Series/Type:** B65843A, B65844  
**Date:** September 2006

- To IEC 61596
- For transformers featuring high inductance and low overall height
- For power applications
- Delivery mode: sets

**Magnetic characteristics (per set)**

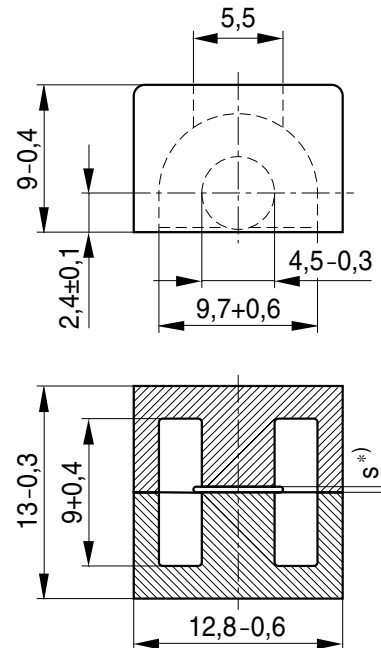
$$\Sigma l/A = 1.24 \text{ mm}^{-1}$$

$$l_e = 24.2 \text{ mm}$$

$$A_e = 19.5 \text{ mm}^2$$

$$A_{\min} = 14.9 \text{ mm}^2$$

$$V_e = 472 \text{ mm}^3$$

**Approx. weight 4.5 g/set**


\*) gapped (one-sided)

FEP0017-A

**Gapped**

Material	A <sub>L</sub> value nH	s approx. mm	μ <sub>e</sub>	Ordering code
T38	63 ±3%	0.39	62	B65843A0063A038
	100 ±3%	0.24	99	B65843A0100A038
	160 ±4%	0.15	158	B65843A0160B038
	200 ±4%	0.12	198	B65843A0200B038
	250 ±5%	0.10	247	B65843A0250J038
	315 ±6%	0.08	311	B65843A0315C038
	400 ±7%	0.06	395	B65843A0400E038
T57	63 ±3%	0.38	62	B65843A0063A057
	100 ±3%	0.24	99	B65843A0100A057
	160 ±4%	0.15	158	B65843A0160B057
	200 ±4%	0.12	198	B65843A0200B057
	250 ±5%	0.09	247	B65843A0250J057
	315 ±6%	0.07	311	B65843A0315C057
	400 ±7%	0.06	395	B65843A0400E057
T66	63 ±3%	0.39	62	B65843A0063A066
	100 ±3%	0.24	99	B65843A0100A066
	160 ±4%	0.15	158	B65843A0160B066
	200 ±4%	0.12	198	B65843A0200B066
	250 ±5%	0.10	247	B65843A0250J066
	315 ±6%	0.08	311	B65843A0315C066
	400 ±7%	0.06	395	B65843A0400E066

**Gapped**

Material	A <sub>L</sub> value nH	s approx. mm	μ <sub>e</sub>	Ordering code
N45	63 ±3%	0.38	62	B65843A0063A045
	100 ±3%	0.24	99	B65843A0100A045
	160 ±4%	0.15	158	B65843A0160B045
	200 ±4%	0.12	198	B65843A0200B045
	250 ±5%	0.09	247	B65843A0250J045
	315 ±6%	0.07	311	B65843A0315C045
	400 ±7%	0.05	395	B65843A0400E045
N87	63 ±3%	0.37	62	B65843A0063A087
	100 ±3%	0.23	99	B65843A0100A087
	160 ±4%	0.14	158	B65843A0160B087
	200 ±4%	0.11	198	B65843A0200B087
	250 ±5%	0.09	247	B65843A0250J087
	315 ±6%	0.07	311	B65843A0315C087
	400 ±7%	0.05	395	B65843A0400E087

**Ungapped**

Material	A <sub>L</sub> value nH	μ <sub>e</sub>	P <sub>V</sub> W/set	Ordering code
N45	2400 +30/-20%	2370		B65843A0000R045
T57 <sup>1)</sup>	2500 +30/-20%	2470		B65843A0000R057
N30	2800 +30/-20%	2765		B65843A0000R030
T65	4000 +30/-20%	3950		B65843A0000R065
T38	7000 +40/-30%	6910		B65843A0000Y038
T66	8500 +40/-30%	8400		B65843A0000Y066
N87	1600 +30/-20%	1580	< 0.18 (200 mT, 100 kHz, 100 °C)	B65843A0000R087

1) Preliminary data

**Coil former, squared pins**

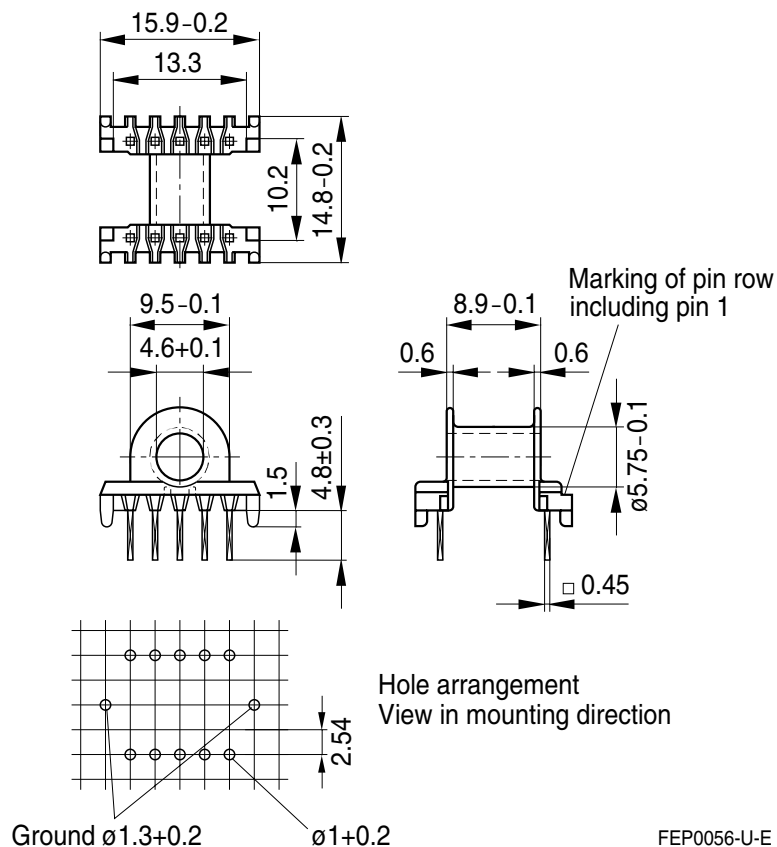
Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:  
 H  $\triangleq$  max. operating temperature 180 °C), color code black  
 Sumikon PM 9630® [E41429 (M)], SUMITOMO BAKELITE CO LTD

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"

Sections	A <sub>N</sub> mm <sup>2</sup>	l <sub>N</sub> mm	A <sub>R</sub> value μΩ	Terminals	Ordering code
1	14.3	23.8	57.1	10	B65844W1010D001





**Mounting assembly**

The set comprises a yoke and a clamp

**Yoke**

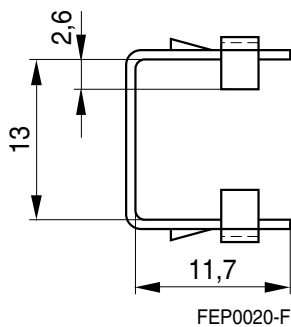
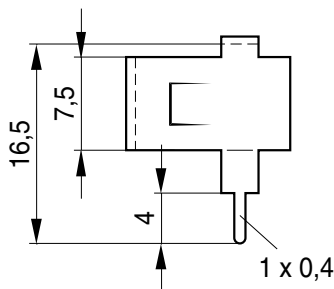
Made of nickel silver (0.4 mm) with ground terminal (tinned)

**Clamp**

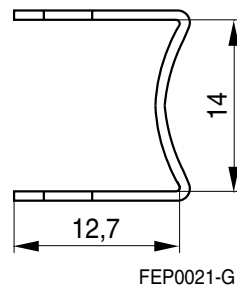
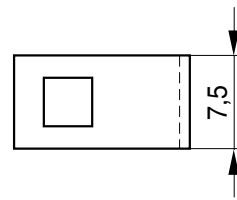
Spring clamp, made of nickel silver (0.4 mm)

	Ordering code
Complete mounting assembly	B65844A2000X000

**Yoke**



**Clamp**



### **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 the special behavior under mechanical load.

As valid for any ceramic material, ferrite cores are brittle and sensitive to any shock, fast changing or tensile load. Especially high cooling rates under ultrasonic cleaning and high static or 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 is the value for the initial permeability. Thus the embedding medium should have 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 irreversible in high magnetic fields.

### **Processing notes**

- The start of the winding process should be soft. Else the flanges may be destroyed.
- To strong winding forces may blast the flanges or squeeze the tube that the cores can no more be mount.
- To long soldering time at high temperature (>300 °C) may effect 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 pollution with Sn oxyd of the tin bath or burned insulation of the wire. For detailed information see Data Book 2007, chapter “Processing notes, 2.2”.
- The dimensions of the hole arrangement have fixed values and should be understood as a recommendation for drilling the printed circuit board. For dimensioning the pins, the group of holes can only be seen under certain conditions, as they fit into the given hole arrangement. To avoid problems when mounting the transformer, the manufacturing tolerances for positioning the customers’ drilling process must be considered by increasing the hole diameter.

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The following applies to all products named in this publication:

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