



## **Ferrites and accessories**

EP 10

Core and accessories

**Series/Type:** B65841, B65842

**Date:** October 2009

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

**Magnetic characteristics (per set)**

$$\Sigma l/A = 1.7 \text{ mm}^{-1}$$

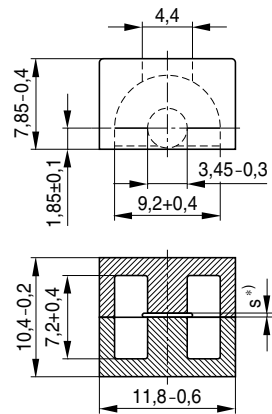
$$l_e = 19.2 \text{ mm}$$

$$A_e = 11.3 \text{ mm}^2$$

$$A_{\min} = 8.5 \text{ mm}^2$$

$$V_e = 217 \text{ mm}^3$$

**Approx. weight 2.8 g/set**



<sup>a)</sup> gapped (one-sided)

FEP0010-A

**Gapped**

Material	$A_L$ value nH	s approx. mm	$\mu_e$	Ordering code
T38	63 ±3%	0.22	85	B65841A0063A038
	100 ±3%	0.14	135	B65841A0100A038
	160 ±5%	0.09	216	B65841A0160J038
	200 ±6%	0.07	270	B65841A0200C038
	250 ±7%	0.05	338	B65841A0250E038
T57	63 ±3%	0.22	85	B65841A0063A057
	100 ±3%	0.14	135	B65841A0100A057
	160 ±5%	0.09	216	B65841A0160J057
	200 ±6%	0.07	270	B65841A0200C057
	250 ±7%	0.05	338	B65841A0250E057
N45	63 ±3%	0.22	85	B65841A0063A045
	100 ±3%	0.14	135	B65841A0100A045
	160 ±5%	0.08	216	B65841A0160J045
	200 ±6%	0.07	270	B65841A0200C045
	250 ±7%	0.05	338	B65841A0250E045
N87	63 ±3%	0.22	85	B65841A0063A087
	100 ±3%	0.13	135	B65841A0100A087
	160 ±5%	0.08	216	B65841A0160J087
	200 ±6%	0.06	270	B65841A0200C087
	250 ±7%	0.05	338	B65841A0250E087

**Ungapped**

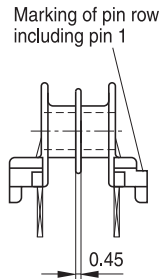
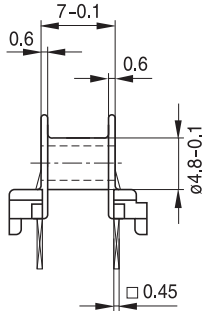
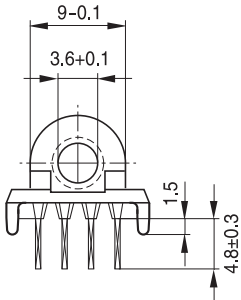
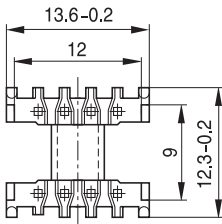
Material	A <sub>L</sub> value nH	μ <sub>e</sub>	P <sub>V</sub> W/set	Ordering code
N45	1600 +30/-20%	2160		B65841A0000R045
T57 <sup>1)</sup>	1600 +30/-20%	2160		B65841A0000R057
N30	2000 +30/-20%	2700		B65841A0000R030
T65	2900 +30/-20%	3920		B65841A0000R065
T38	4800 +40/-30%	6490		B65841A0000Y038
T66	6000 +40/-30%	8100		B65841A0000Y066
N87	1100 +30/-20%	1480	< 0.1 (200 mT, 100 kHz, 100 °C)	B65841A0000R087

1) Preliminary data

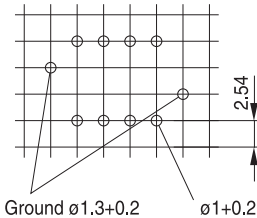
**Coil former, squared pins**

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 68-2-20, 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	12.1	21.5	61.3	8	B65842W1008D001
2	11.6	21.5	63.7	8	B65842W1008D002



FEP0011-S-E



Hole arrangement  
View in mounting direction

**Mounting assembly**

The set comprises a yoke and a clamp

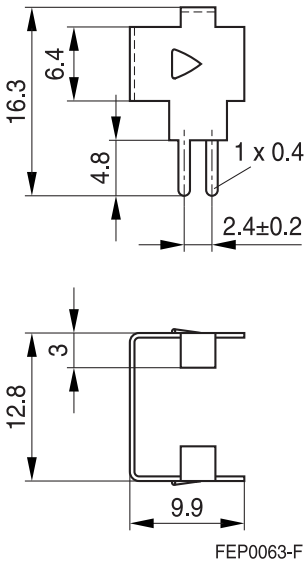
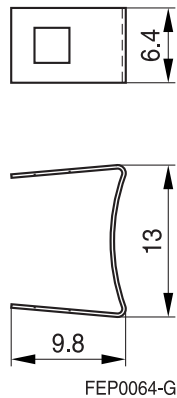
**Yoke**

Made of cold rolled steel (0.4 mm) with ground terminal (tinned)

**Clamp**

Spring clamp, made of bronze (0.3 mm), tinned

	Ordering code
Complete mounting assembly EP 10	B65842S2000X000

**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 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.

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