



Ferrites and accessories

EP 10
Core and accessories

Series/Type: B65841, B65842
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)

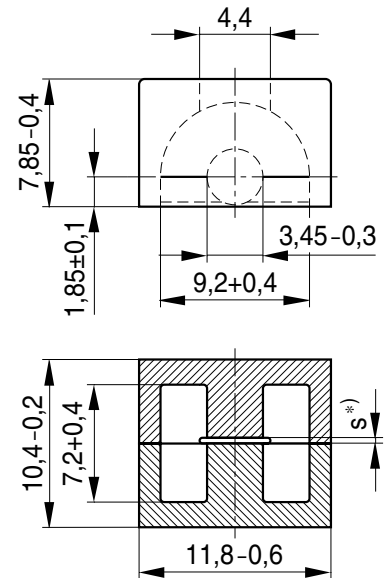
$$\Sigma l/A = 1.7 \text{ mm}^{-1}$$

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

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

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

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

Approx. weight 2.8 g/set


*) gapped (one-sided)

FEP0010-A

Gapped

Material	A _L value nH	s approx. mm	μ _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 _L value nH	μ _e	P _V W/set	Ordering code
N45	1600 +30/-20%	2160		B65841A0000R045
T57 ¹⁾	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

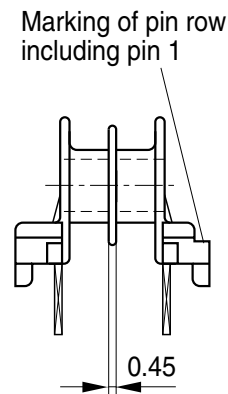
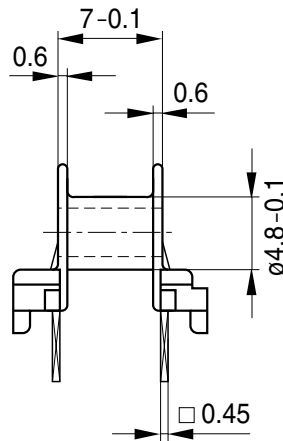
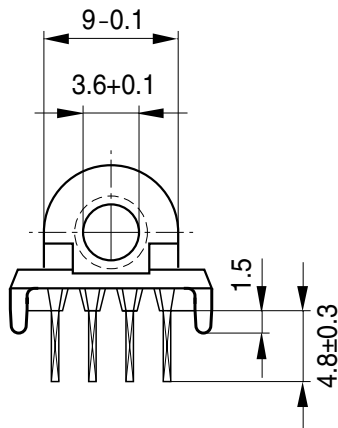
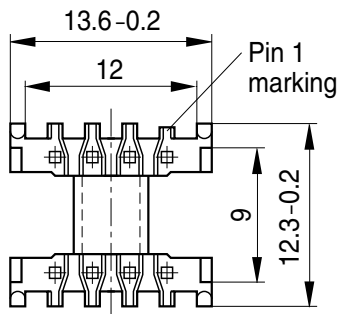
1) Preliminary data

Coil former, squared pins

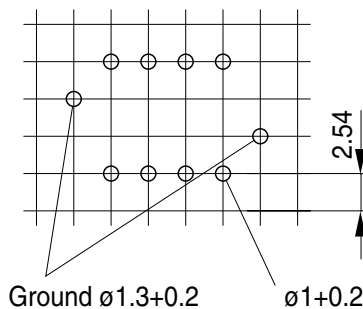
Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:
 $H \triangleq$ max. operating temperature 180 °C), color code black
 Sumikon PM 9630® [E41429 (M)], SUMITOMO BAKELITE CO LTD

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_N mm ²	l_N mm	A_R value $\mu\Omega$	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

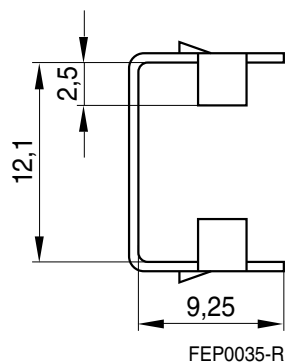
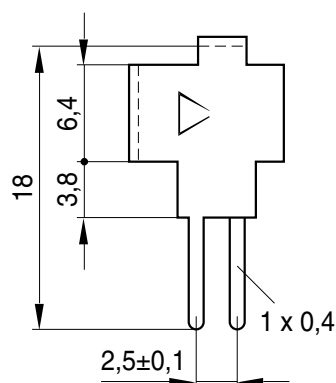
Made of nickel silver (0.4 mm) with ground terminal (tinned)

Clamp

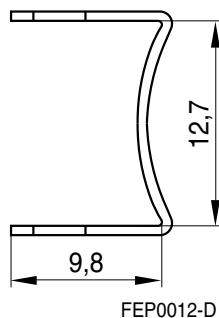
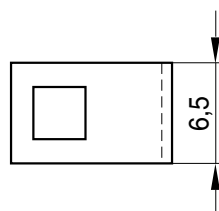
Spring clamp, made of nickel silver (0.3 mm)

	Ordering code
Complete mounting assembly	B65842A2000X000

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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