Ferrites and accessories

EP 17
Core and accessories

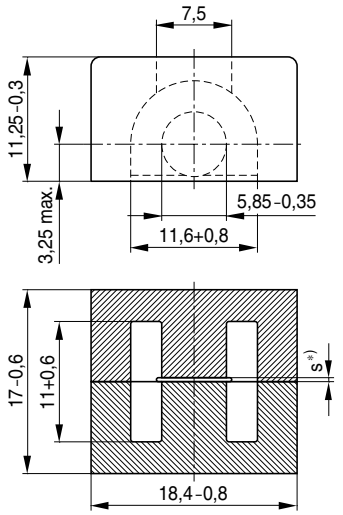
Series/Type: **B65845, B65846**
Date: October 2009

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

Magnetic characteristics (per set)

$\Sigma l/A$ = 0.84 mm^{-1}
l_e = 28.5 mm
A_e = 33.9 mm^2
A_{min} = 25.5 mm^2
V_e = 966 mm^3

Approx. weight 12 g/set



*) gapped (one-sided)

FEP0027-X

Ungapped

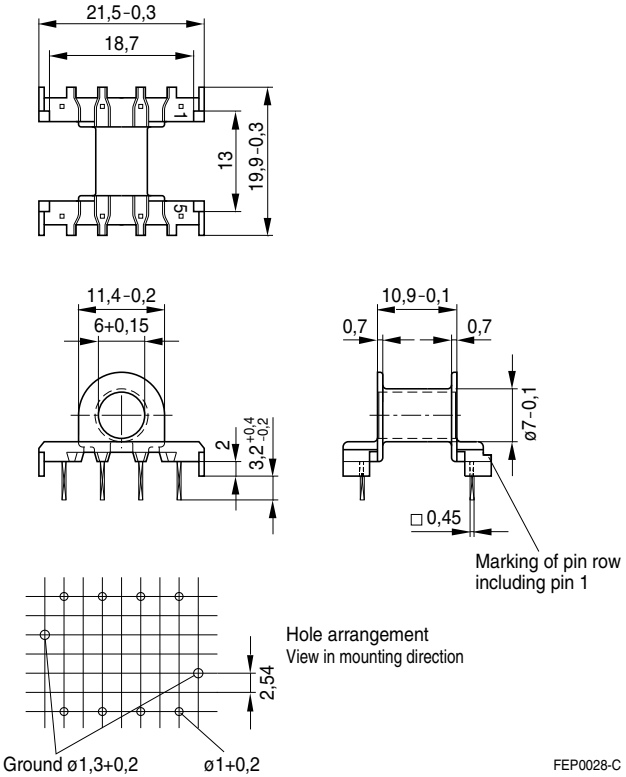
Material	A_L value nH	μ_e	P_V W/set	Ordering code
N30	4300 +30/–20%	2870		B65845J0000R030
T65	6200 +30/–20%	4150		B65845J0000R065
T38	10800 +40/–30%	7220		B65845J0000Y038
T66	13000 +40/–30%	8700		B65845J0000Y066
N87	2400 +30/–20%	1600	< 0.4 (200 mT, 100 kHz, 100 °C)	B65845J0000R087

Coil former

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: H ≙ 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”

Squared pins.

Sections	A_N mm²	l_N mm	A_R value μΩ	Terminals	Ordering code
1	20.3	28.7	48.6	8	B65846W1008D001



Mounting assembly

The set comprises a yoke and a clamp

Yoke

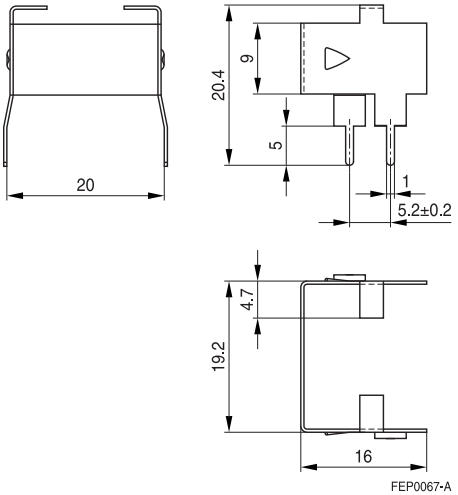
Made of cold rolled steel (0.4 mm) with ground terminal (tinned)

Clamp

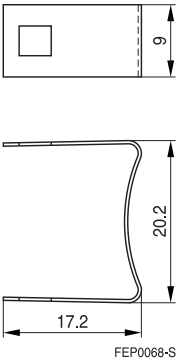
Spring clamp, made of bronze (0.4 mm), tinned

	Ordering code
Complete mounting assembly	B65846S2000X000

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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