



Ferrites and accessories

EP 20

Core and accessories

Series/Type: B65847, B65848

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)

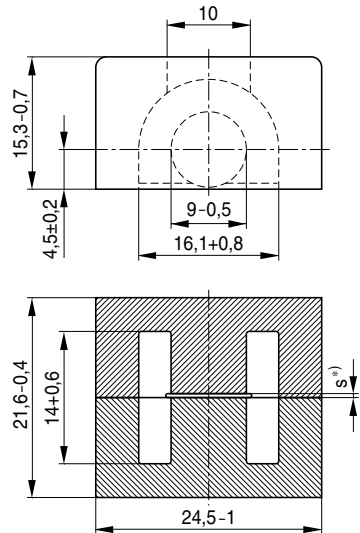
$$\Sigma l/A = 0.51 \text{ mm}^{-1}$$

$$l_e = 40 \text{ mm}$$

$$A_e = 78 \text{ mm}^2$$

$$A_{\min} = 60 \text{ mm}^2$$

$$V_e = 3120 \text{ mm}^3$$

Approx. weight 27.5 g/set

^{a)} gapped (one-sided)

FEP0031-N

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N87	200 ±3%	0.47	82	B65847A0200A087

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code
N30	6700 +30/-20%	2730		B65847A0000R030
T65	10200 +30/-20%	4160		B65847A0000R065
T38	18700 +40/-30%	7630		B65847A0000Y038
N87	4000 +30/-20%	1630	< 1.2 (200 mT, 100 kHz, 100 °C)	B65847A0000R087

Coil former

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: F \triangleq max. operating temperature 155 °C), color code green

Vyncolit/X611® [E167521 (M)], VYNCOLIT NV

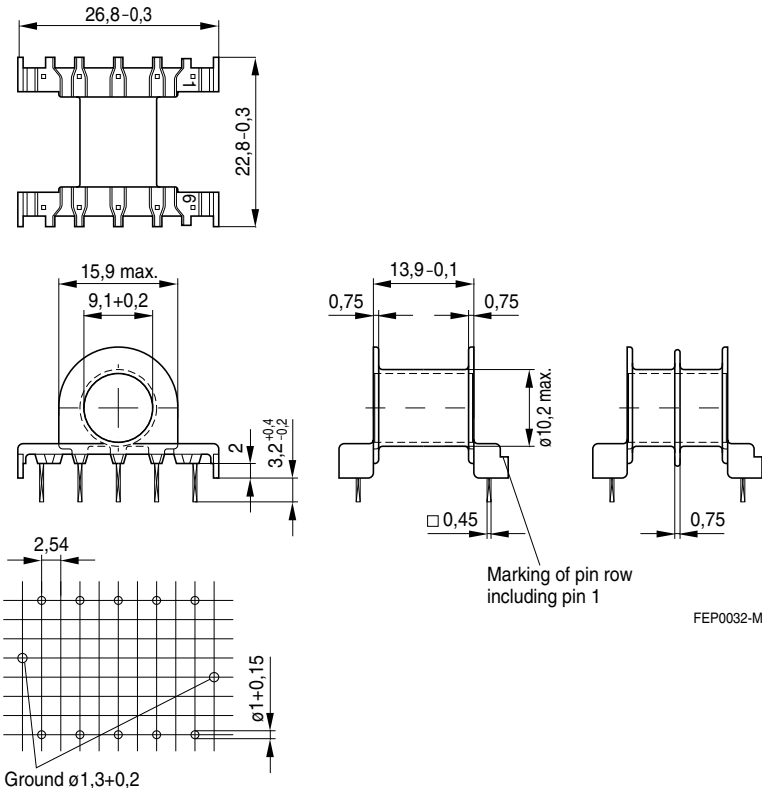
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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 mm ²	I _N mm	A _R value $\mu\Omega$	Terminals	Ordering code
1	35.4	40.6	39.5	10	B65848D1010D001



Mounting assembly

The set comprises a yoke and a clamp

Yoke

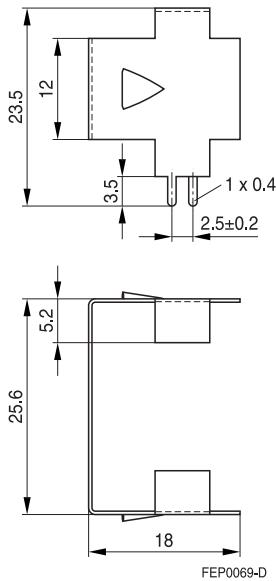
Made of bronze (0.4 mm) with ground terminal (tinned)

Clamp

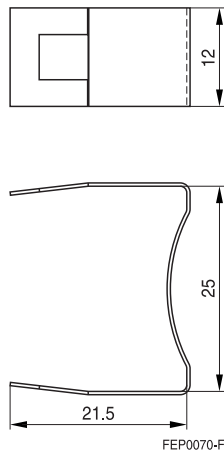
Spring clamp, made of stainless spring steel (0.4 mm)

	Ordering code
Complete mounting assembly	B65848S2000X000

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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