



Ferrites and accessories

ER 9.5/5
Planar core and accessories

Series/Type: **B65523, B65527**
Date: September 2006

ER 9.5/5

Planar core

B65523

- To IEC 62317-9
- For transformers featuring high inductance and low overall height
- Delivery mode: sets

Magnetic characteristics (per set)

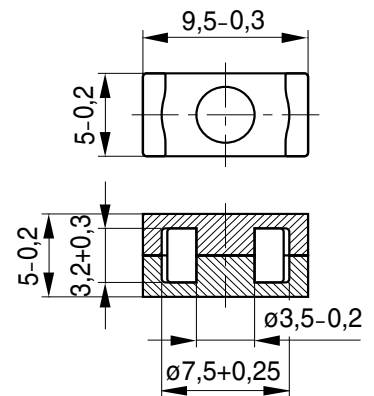
$$\Sigma l/A = 1.54 \text{ mm}^{-1}$$

$$l_e = 13.6 \text{ mm}$$

$$A_e = 8.81 \text{ mm}^2$$

$$V_e = 120 \text{ mm}^3$$

Approx. weight 0.6 g/set



FEK0223-Y

Ungapped

Material	A_L value nH	μ_e	Ordering code
N87	800 +30/-20%	1000	B65523J0000R087
T38	4500 +40/-30%	5680	B65523J0000Y038



SMD coil former with gullwing terminals

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:
 $F \triangleq$ max. operating temperature 155 °C), color code black
 Vectra C 130 [E83005 (M)], TICONA

Solderability: to IEC 60068-2-58, test Td, method 6 (Group 3): 245 °C, 3 s

Resistance to soldering heat: to IEC 60068-2-58, test Td, method 6 (Group 3): 255 °C, 10 s
 permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

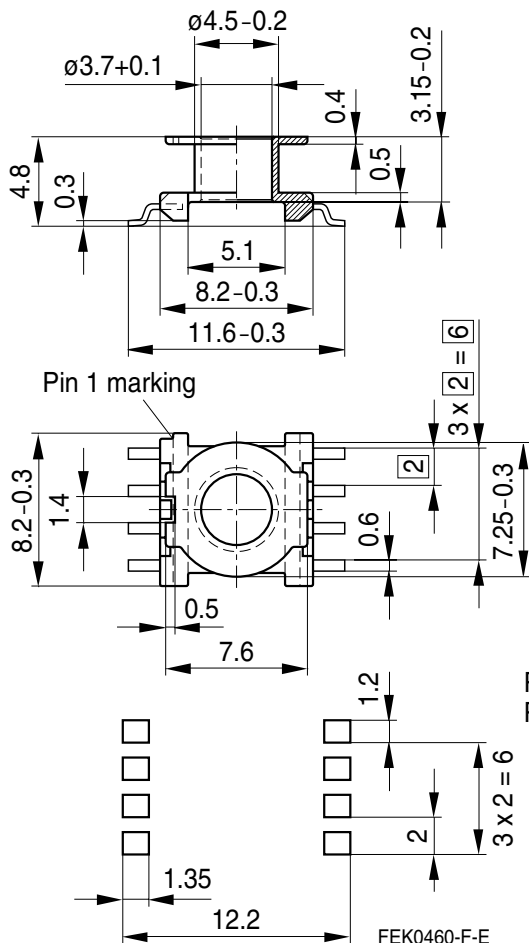
Winding: see Data Book 2007, chapter "Processing notes, 2.1"

Yoke

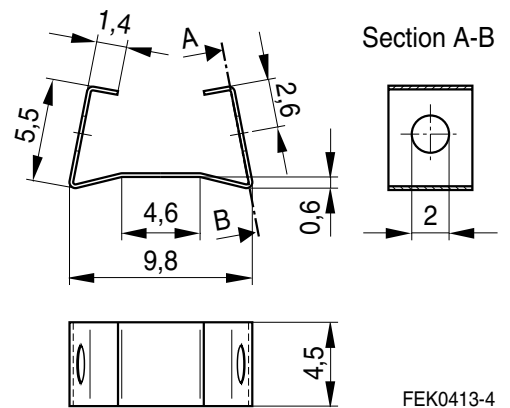
Material: Stainless spring steel (0.1 mm)

Coil former					Ordering code
Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Terminals	
1	3.23	18.4	196	8	B65527B1008T001
Yoke					B65527A2000X000

Coil former



Yoke



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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