



Ferrites and accessories

P 7 × 4

Core and accessories

Series/Type: **B65511, B65512**

Date: **September 2006**

■ Delivery mode: sets

Magnetic characteristics (per set)

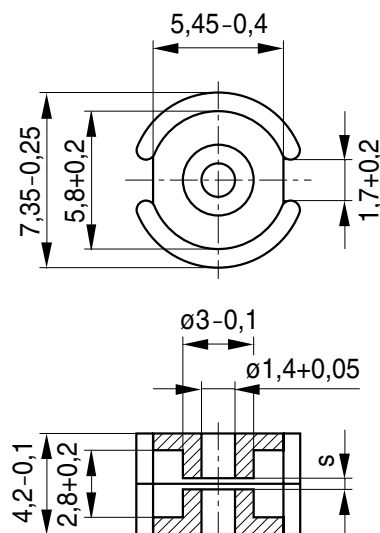
$$\Sigma l/A = 1.43 \text{ mm}^{-1}$$

$$l_e = 10 \text{ mm}$$

$$A_e = 7 \text{ mm}^2$$

$$V_e = 70 \text{ mm}^3$$

Approx. weight 0.5 g/set



FPK0040-A

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code -A with center hole
K1	25 ± 3%	0.23	28	B65511A0025A001
M33	63 ± 3%	0.13	72	B65511A0063A033
N48	100 ± 3%	0.10	114	B65511A0100A048

Ungapped

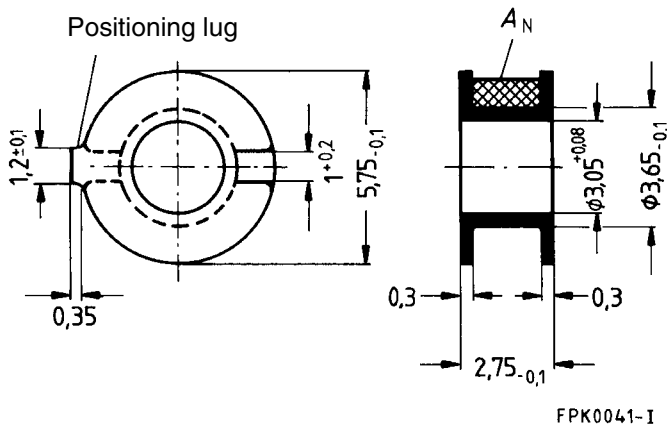
Material	A_L value nH	μ_e	Ordering code -A with center hole
N48	1000 +40/-30%	1140	B65511A0000Y048
N30	2000 +40/-30%	2270	B65511A0000Y030

Coil former with positioning lug

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
 F \triangleq max. operating temperature 155 °C), color code black
 Valox 420-SE0® [E45329 (M)], GE PLASTICS B V

Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Ordering code
1	2.2	14.6	240	B65512C0000T001



Mounting assembly for printed circuit boards

- The set comprises a terminal carrier and a yoke
- For snap-in connection

Terminal carrier

- With thread for the adjusting screw

Material: GFR polyphenylene sulphide (UL 94 V-0, insulation class to IEC 60085:
 F \triangleq max. operating temperature 155 °C), color code black
 Ryton R-4, [E54700 (M)], CHEVRON PHILLIPS CHEMICAL CO L P

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

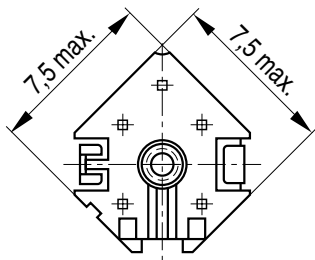
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 s

Yoke

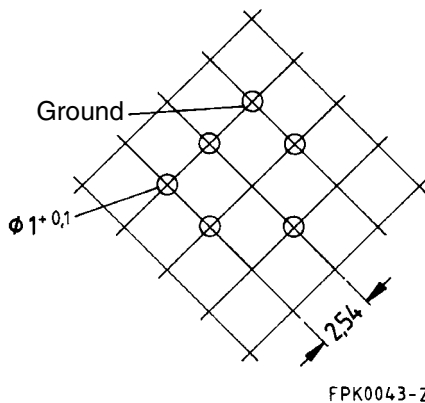
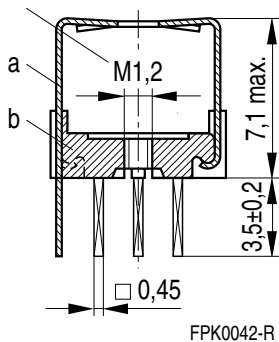
Spring yoke, made of tinned nickel silver (0.2 mm), with ground terminal

Complete mounting assembly (5 solder terminals)

Ordering code: B65512C2001X000



Thread for adjusting screw



- a) Yoke
- b) Terminal carrier with 5 solder terminals

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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