



## **Ferrites and accessories**

P 22 × 13

Core and accessories

**Series/Type:** B65661, B65662, B65812

**Date:** September 2006

**P 22 × 13**

**Core**

**B65661**

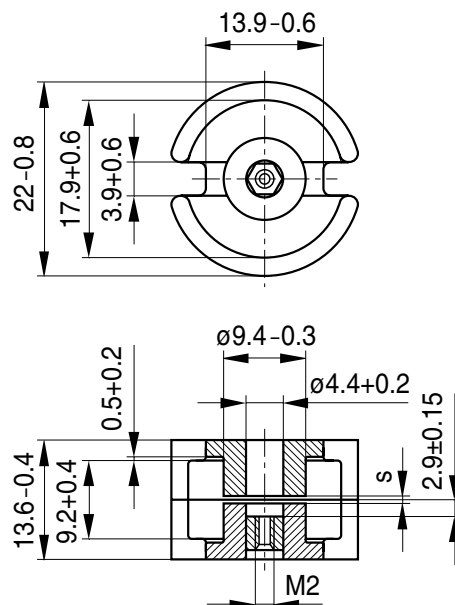
- To IEC 60133
- Delivery mode: sets

**Magnetic characteristics (per set)**

	with center hole	without center hole	
$\Sigma l/A$	0.5	0.46	mm <sup>-1</sup>
$l_e$	31.6	33.2	mm
$A_e$	63	72.6	mm <sup>2</sup>
$A_{min}$	—	58.1	mm <sup>2</sup>
$V_e$	1990	2410	mm <sup>3</sup>

**Approx. weight (per set)**

m	13	14	g



FPK0118-Q

**Gapped**

Material	$A_L$ value nH	s approx. mm	$\mu_e$	Ordering code <sup>1)</sup> -D with center hole -N with threaded sleeve
N48	160 ±3%	0.50	64	B65661+0160A048
	250 ±3%	0.26	100	B65661+0250A048
	315 ±3%	0.22	126	B65661+0315A048
	630 ±3%	0.10	251	B65661+0630A048
	1250 ±5%	0.05	499	B65661D1250J048

**Ungapped**

Material	$A_L$ value nH	$\mu_e$	$P_V$ W/set	Ordering code -D with center hole -W without center hole
K1	220 +30/-20%	88		B65661D0000R001
N48	3800 +30/-20%	1520		B65661D0000R048
N30	8300 +30/-20%	3020		B65661W0000R030
T38	16000 +40/-30%	5820		B65661W0000Y038
N87	4400 +30/-20%	1600	< 1.1 (200 mT, 100 kHz, 100 °C)	B65661W0000R087

1) Replace the + by the code letter "D" or "N" for the required version.

**Coil former**

Standard: to IEC 60133

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

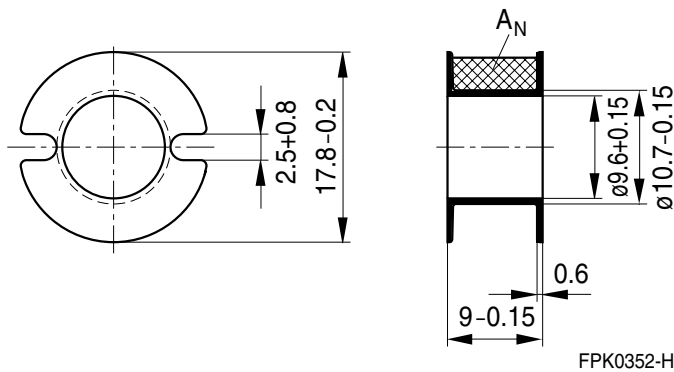
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

**Insulating washer between core and coil former**

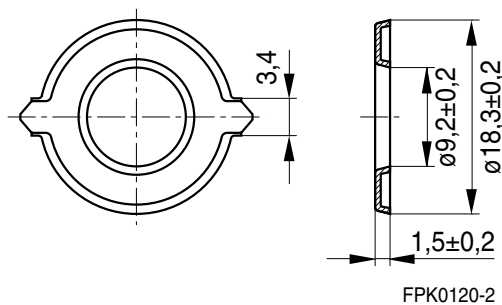
- For tolerance compensation and for insulation
- Polycarbonate spring washer (UL 94 V-0, insulation class to IEC 60085:  $E \triangleq$  120 °C), 0.08 mm thick  
 Aryphan F685, [E167358 (M)], natural color, LOFO HIGH TECH FILM GMBH

Coil former				Ordering code
Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	
1	23.4	44	67	B65662B0000T001
Insulating washer (reel packing, PU = 1 reel)				B65662A5000X000

**Coil former**



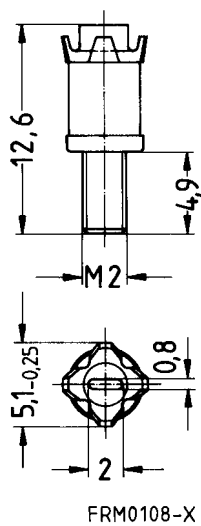
**Insulating washer**  
(preliminary data)



### Adjusting screw

- Tube core with thread and core brake made of GFR polyterephthalate  
Pocan B3235® [E245249 (M)], LANXESS AG

Tube core			Ordering code
Ø × length (mm)	Material	Color code	
3.85 × 5.0	N22	gray	B65812B3003X022



### **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.

## Important notes

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