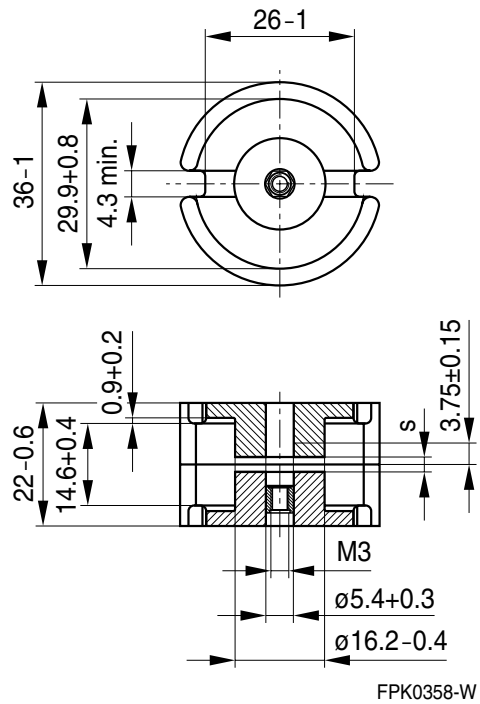
Ferrites and accessories

P 36 × 22
Core and accessories

Series/Type: **B65611, B65612, B65615, B65679**
Date: September 2006

■ Delivery mode: sets



Magnetic characteristics (per set)

	with center hole	without center hole	
$\Sigma l/A$	0.26	0.25	mm^{-1}
l_e	52	53.5	mm
A_e	202	213	mm^2
A_{min}	—	173	mm^2
V_e	10500	11400	mm^3

Approx. weight (per set)

m	57	59.5	g

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code [1] -D with center hole -T with threaded sleeve
N48	250 ±3%	1.20	51	B65611+0250A048
	400 ±3%	0.62	82	B65611+0400A048
	630 ±3%	0.35	129	B65611+0630A048
	1000 ±3%	0.22	205	B65611+1000A048

Ungapped

Material	A_L value nH	μ_e	Ordering code -D with center hole -W without center hole
N48	7600 +30/–20%	1560	B65611D0000R048
N30	15200 +30/–20%	3040	B65611W0000R030

1) Replace the + by the code letter ”D“ or ”T“ for the required version.

Coil former

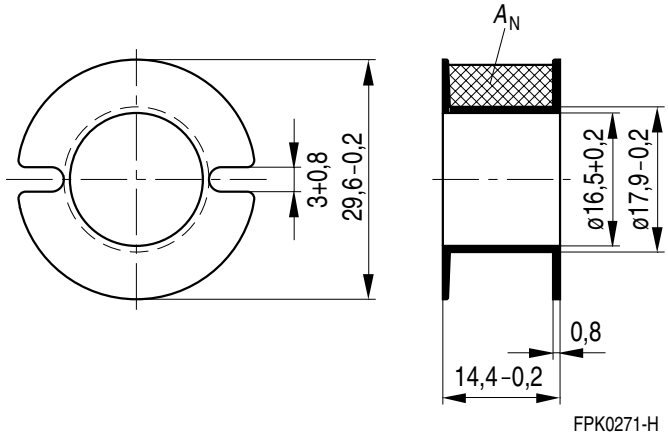
Standard: to IEC 60133
Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085: F ≙ max. operating temperature 155 °C), color code black Valox 420-SE0® [E45329 (M)], GE PLASTICS B V
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Insulating washer between core and coil former

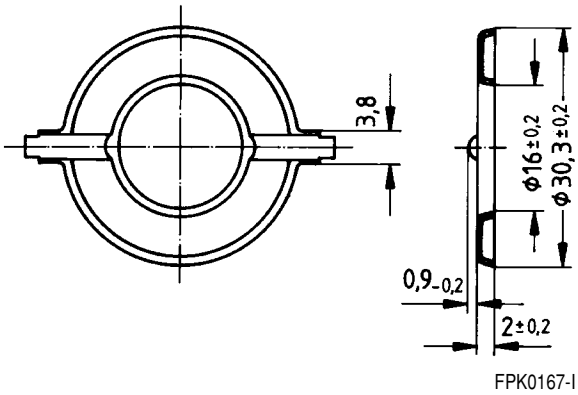
- For tolerance compensation and for insulation
- Polycarbonate spring washer (UL 94 V-0, insulation class to IEC 60085: E ≙ 120 °C), 0.08 mm thick Aryphan F685, [E167358 (M)], natural color, LOFO HIGH TECH FILM GMBH

Coil former				Ordering code
Sections	A_N mm²	l_N mm	A_R value μΩ	
1	63	73	39	B65612B0000T001
Insulating washer (reel packing, PU = 1 reel)				B65612A5000X000

Coil former



Insulating washer
(preliminary data)



Mounting assembly for printed circuit boards

- The set comprises a terminal carrier and a yoke

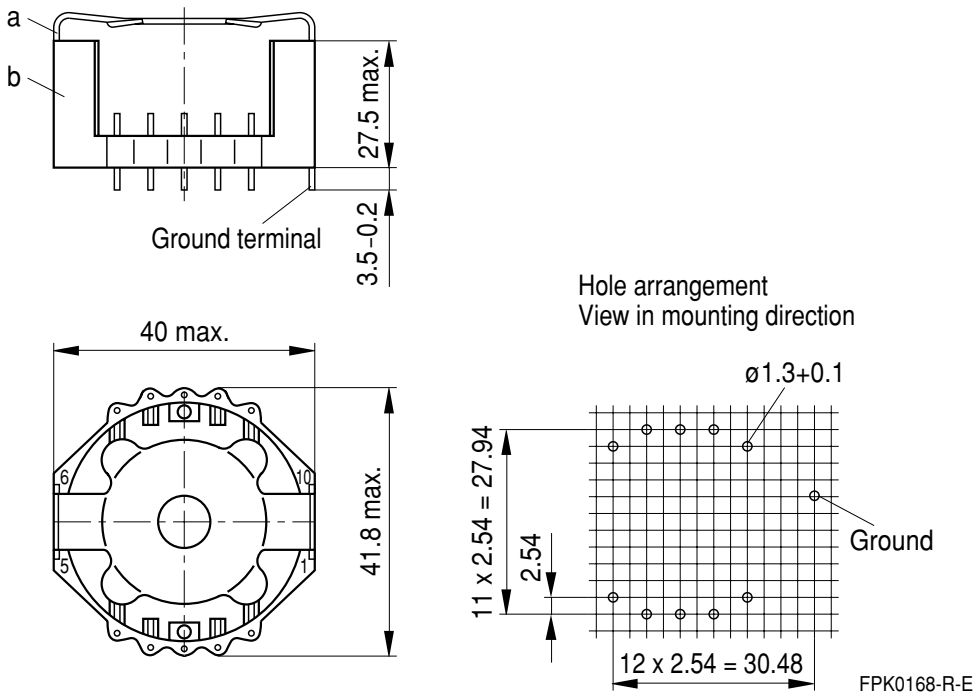
Terminal carrier

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F ≙ max. operating temperature 155 °C), color code black
Pocan B4235® [E245249 (M)], LANXESS AG
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 nickel silver (0.6 mm), with ground terminal

Complete mounting assembly (10 solder terminals)
Ordering code: B65615B0001X000

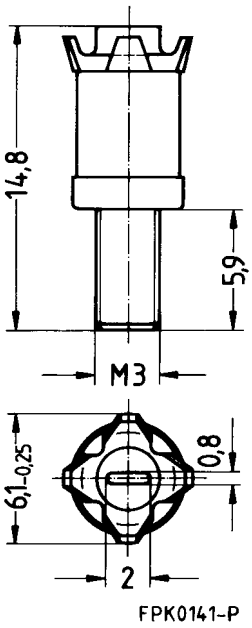


a) Yoke
b) Terminal carrier with 10 solder terminals

Adjusting screw

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

Tube core ∅ × length (mm)	Material	Color code	Ordering code
4.55 × 6.3	N22	red	B65679E0003X022
4.98 × 6.3	N22	black	B65679E0002X022



Note:

Due to the limited distance between adjusting screw and internal borehole, the entire assembly must be accurately centered.

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 destroid.
– 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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