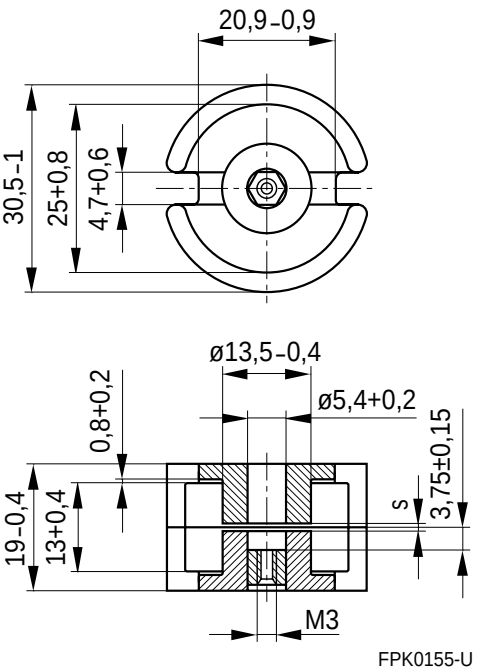
Ferrites and accessories

P 30 × 19
Core and accessories

Series/Type: **B65701, B65702, B65705, B65679**
Date: September 2006, September 2008

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- To IEC 60133
- Delivery mode: sets



Magnetic characteristics (per set)

	with center hole	without center hole	
$\Sigma l/A$	0.33	0.32	mm^{-1}
l_e	45	46	mm
A_e	136	145	mm^2
A_{min}	—	117	mm^2
V_e	6120	6670	mm^3

Approx. weight (per set)

m	36	38	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%	0.72	66	B65701+0250A048
	400 ±3%	0.40	105	B65701+0400A048
	630 ±3%	0.22	166	B65701+0630A048
	1000 ±3%	0.12	263	B65701+1000A048
	2000 ±5%	0.05	527	B65701D2000J048

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code -D with center hole -W without center hole
N48	6200 +30/–20%	1630		B65701D0000R048
N30	11500 +30/–20%	2900		B65701W0000R030
T38	28000 +40/–30%	7070		B65701W0000Y038
N87	6400 +30/–20%	1620	< 2.5 (200 mT, 100 kHz, 100 °C)	B65701W0000R087

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

Coil former

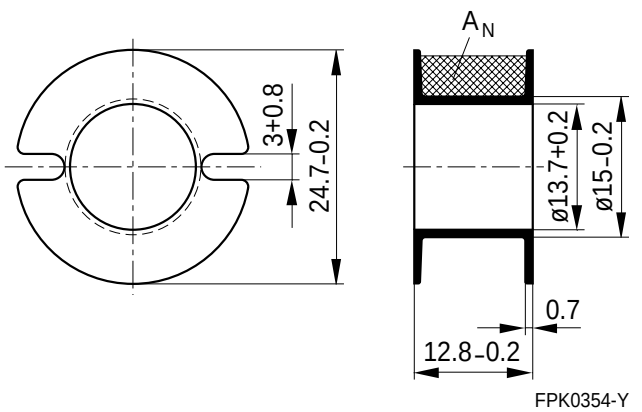
Standard: to IEC 60133
Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085: F ≙ max. operating temperature 155 °C), color code black Valox 420-SE0® [E45329 (M)], GE PLASTICS B V
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Insulating washer between core and coil former

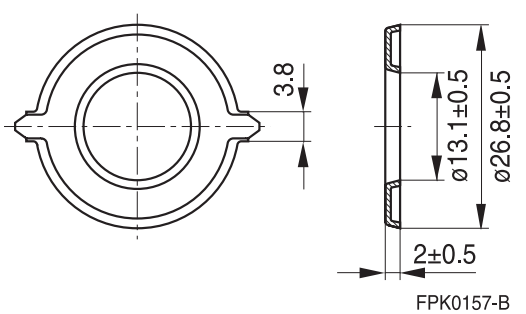
- For tolerance compensation and for insulation
- Polycarbonate spring washer (UL 94 V-0, insulation class to IEC 60085: E ≙ 120 °C), 0.08 mm thick Aryphan F685, [E167358 (M)], natural color, LOFO HIGH TECH FILM GMBH

Coil former				Ordering code
Sections	A_N mm²	l_N mm	A_R value μΩ	
1	48	60	46	B65702B0000T001
Insulating washer (reel packing, PU = 1 reel)				B65702A5000X000

Coil former



Insulating washer



Mounting assembly for printed circuit boards

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

Terminal carrier

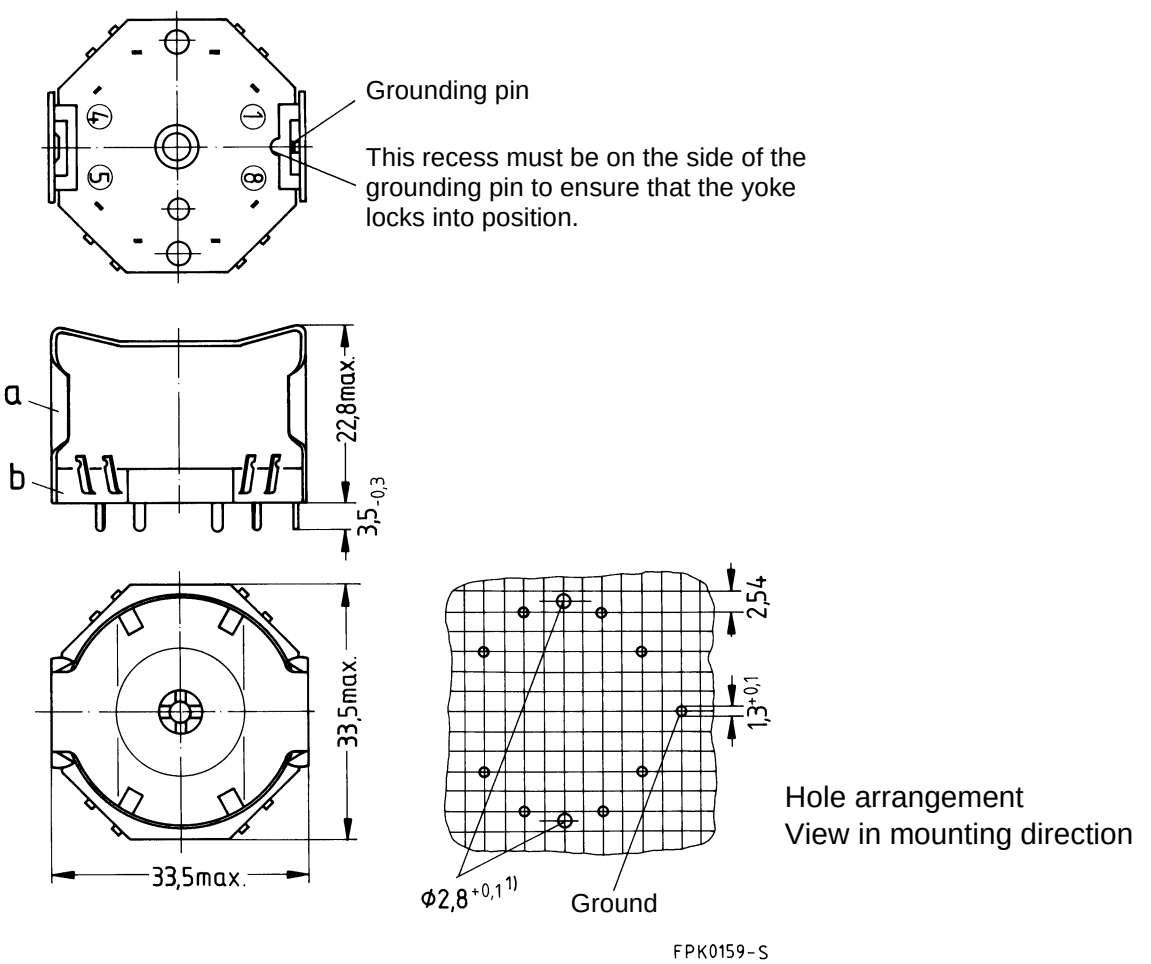
Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 85:
F ≙ max. operating temperature 155 °C), color code gray
Pocan B4235® [E245249 (M)], LANXESS AG
Solderability: to IEC 68-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s
Resistance to soldering heat: to IEC 68-2-20, test Tb, method 1B: 350 °C, 3.5 s

Yoke

Spring yoke, made of tinned nickel silver (0.5 mm), with ground terminal

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Complete mounting assembly (8 solder terminals)
Ordering code: B65705B0003X000



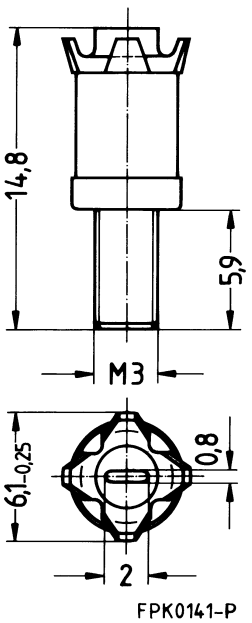
Hole arrangement
View in mounting direction

1) The 2.8 mm hole is only necessary for additional fixing with M 2.5 screw.
a) Yoke
b) Terminal carrier with 8 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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