



Ferrites and accessories

P 9 x 5, core and accessories

Series/Type: B65517, B65518, B65522, B65524

Date: September 2011

Core

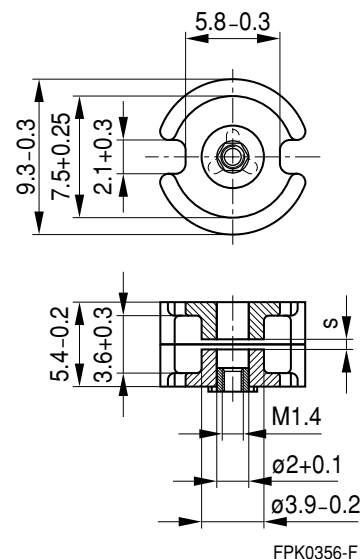
- Standard: to IEC 60133
- Delivery mode: sets

Magnetic characteristics

	with center hole	without center hole	
$\Sigma I/A$	1.25	1.13	mm ⁻¹
I_e	12.5	13.4	mm
A_e	10	11.9	mm ²
A_{min}	—	9.3	mm ²
V_e	125	159	mm ³

Approx. weight (per set)

	with center hole	without center hole	
m	0.8	1.0	g



Dimensions in mm

Gapped

Material	AL value	s approx mm	μ_e	Ordering code ¹ - D with center hole - T with threaded sleeve
	nH			
K1	25 ±3%	0.45	25	B65517+0025A001
	40 ±3%	0.26	40	B65517+0040A001
M33	63	0.20	63	B65517D0063A033
N48	100 ±3%	0.10	100	B65517+0100A048
	160 ±3%	0.06	159	B65517+0160A048
	200 ±3%	0.04	200	B65517D0200A048
	250 ±3%	0.03	249	B65517D0250J048

Ungapped

Material	AL value	μ_e	Ordering code - D with center hole - T with threaded sleeve
	nH		
N48	1300 +30/-20%	1290	B65517D0000R048
N30	2500 +30/-20%	2490	B65517D0000R030
T38	5500 +40/-30%	4930	B65517W0000Y038

¹ Replace + by D or T for required version

Coil former

Standard: to IEC 60133

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:

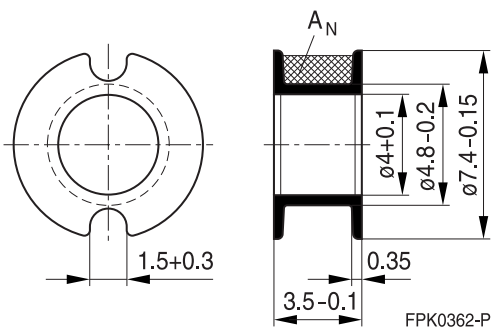
F $\hat{=}$ max. operating temperature +155 °C), color code black,

Valox 420-SE0® [E45329 (M)], SABIC INNOVATIVE PLASTICS

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

Coil former				Ordering code
Sections	A _N mm ²	l _N mm	A _R value μΩ	
1	3.6	19.2	183	B65522B0000T001

Coil former:



SMD

SMD coil former with gullwing terminals

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:

F ≅ max. operating temperature +155 °C), color code black;

Sumika Super E4008 [E54705], Sumitomo Chemicals Co. LTD

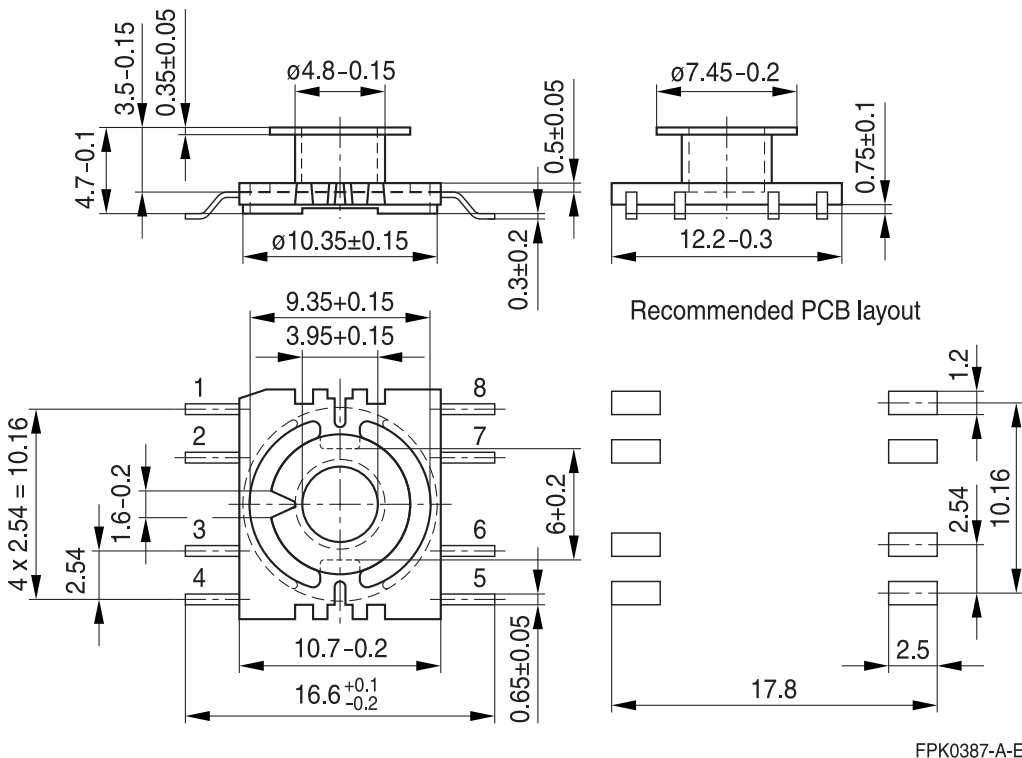
Solderability: to IEC 60068-2-58, test Td, method 6 (Group 3): +245 °C, 3s

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"

Sections	A _N mm ²	l _N mm	A _R value μΩ	Terminals	Ordering code
1	3.4	19.2	194	4	B65524C1004T001
	3.4	19.2	194	8	B65524C1008T001



In the 4-terminal version, terminals 2, 3, 6 and 7 are omitted.

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 (to be combined with core version "D")
- 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

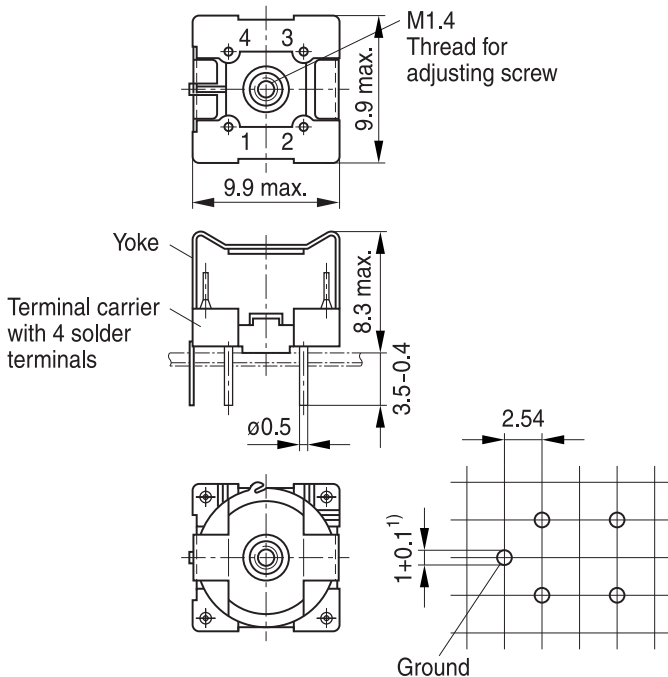
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: +350 °C, 3.5 s

Yoke

Spring yoke, made of tinned nickel silver (0.25 mm), with ground terminal

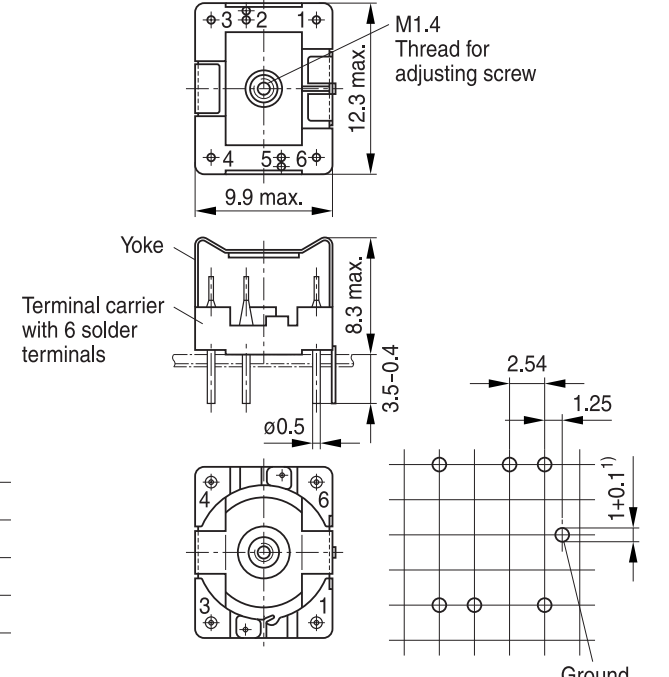
<p>Complete mounting assembly (4 solder terminals) Ordering code: B65518D2001X000</p>	<p>Complete mounting assembly (6 solder terminals) Ordering code: B65518D2002X000</p>
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4 solder terminals



1) 1.3 hole also permissible

6 solder terminals



FPK0362-P-E 1) 1.3 hole also permissible

FPK0363-X-E

Mechanical stress and mounting

Ferrite cores have to meet mechanical requirements during assembly and for a growing number of applications. Since ferrites are ceramic materials one has to be aware of their special behavior under mechanical load.

Just like any ceramic material, ferrite cores are brittle and sensitive to any shock, fast changing or tensile load. Especially fast cooling rates under ultrasonic cleaning, high static and 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 AL 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 the value for the initial permeability. Thus, the embedding medium should offer 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 irreversibly when exposed to strong magnetic fields.

Processing notes

The start of the winding process should be soft. Otherwise, the flanges may be destroyed.

Excessive winding forces may damage the flanges or squeeze the tube so that the cores can no longer be mounted.

Excessive soldering time at high temperature (>300 °C) may affect 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 contamination with tin oxide (SnO) from the tin bath or burned insulation from the wire. For detailed information see Data Book 2007, chapter "Processing notes, 2.2".

The dimensions of the pin hole arrangement are fixed and should be understood as an ideal recommendation for drilling the printed circuit board. In order to avoid problems when mounting the transformer, customers should make allowances for manufacturing tolerances in the drilling and pick-and-place processes by increasing the diameter of the pin holes

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