



## **Ferrites and accessories**

PM 74/59  
Core and accessories

**Series/Type:** B65686, B65687  
**Date:** March 2012

- To IEC 61247
- Particularly suitable for power transformers and energy storage chokes
- Delivery mode: sets

**Magnetic characteristics (per set)**

$$\Sigma l/A = 0.162 \text{ mm}^{-1}$$

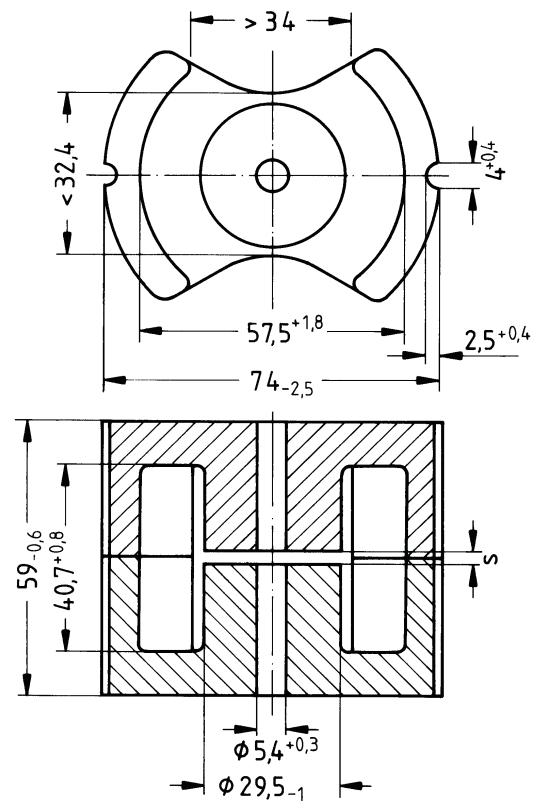
$$l_e = 128 \text{ mm}$$

$$A_e = 790 \text{ mm}^2$$

$$A_{\min} = 630 \text{ mm}^2$$

$$V_e = 101000 \text{ mm}^3$$

**Approx. weight 460 g/set**



FPM0010-W

**Gapped**

Material	$A_L$ value nH	s approx. mm	$\mu_e$	Ordering code
N27	$315 \pm 3\%$	3.80	41	B65686A0315A027
	$630 \pm 3\%$	1.50	81	B65686A0630A027

**Ungapped**

Material	$A_L$ value nH	$\mu_e$	$P_V$ W/set	Ordering code
N27	$10000 +30/-20\%$	1290	$< 7.5$ (150 mT, 25 kHz, 100 °C)	B65686A0000R027
N87	$10000 +30/-20\%$	1290	$< 9.6$ (100 mT, 100 kHz, 100 °C)	B65686A0000R087

**Coil former**

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

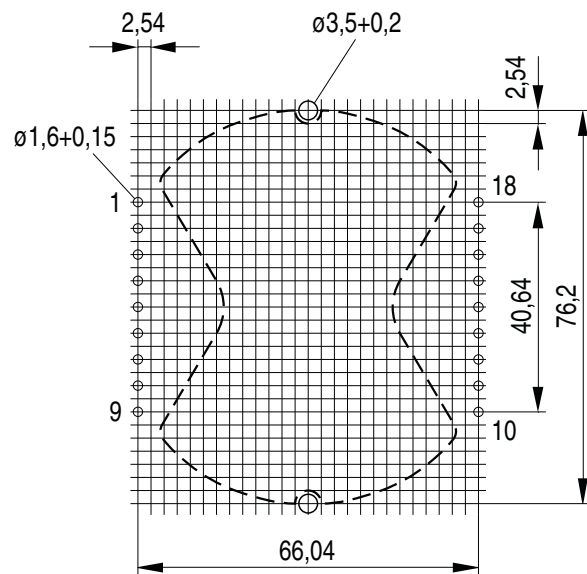
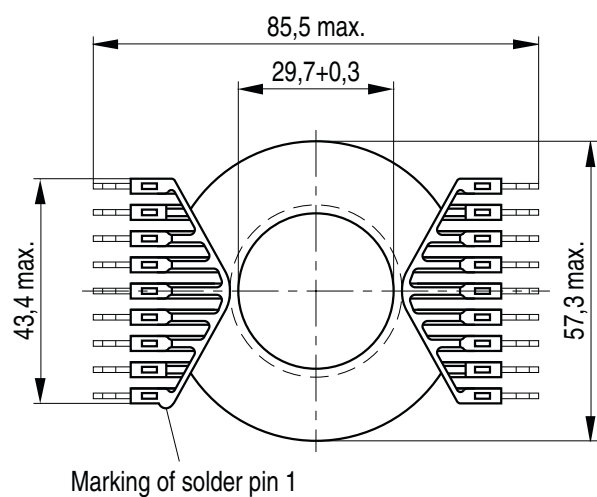
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

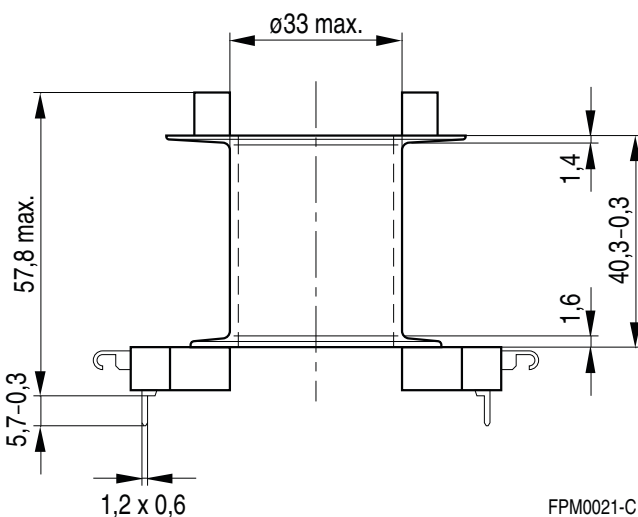
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Also available without solder pins.

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Solder pins	Ordering code
1	442	140	10.9	18	B65687A1018T001
1	442	140	10.9	—	B65687A1000T001



Hole arrangement  
View in mounting direction



FPM0021-C

### Mounting assembly

- For chassis mounting<sup>1)</sup> or printed circuit boards
- The set comprises a yoke and a base plate
- Fixing nuts M3 and washers are supplied

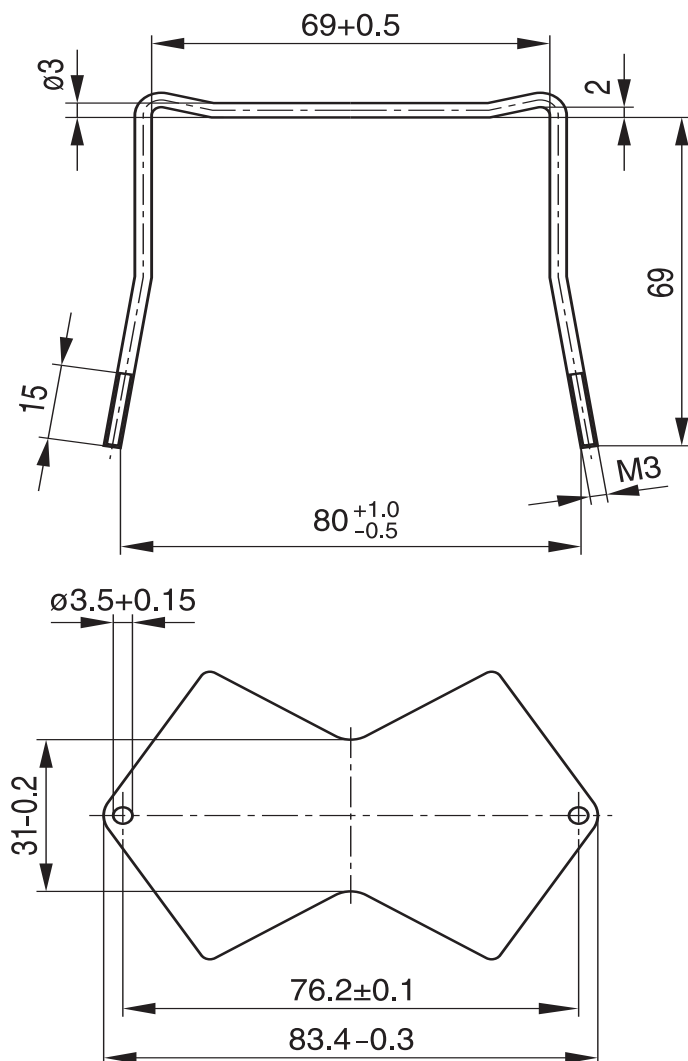
### Yoke

- Material: Brass clamping yoke ( $\varnothing$  3 mm) with thread

### Base plate

- Material: Aluminum (0.6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65687A2000X000



FPM0025-A

1) On a chassis the coil former must be mounted with its solder pins upward.

### **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 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 $A_L$ 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 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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