



Ferrites and accessories

PM 62/49
Core and accessories

Series/Type: B65684, B65685
Date: March 2012
Version: 3

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

Magnetic characteristics (per set)

$$\Sigma l/A = 0.191 \text{ mm}^{-1}$$

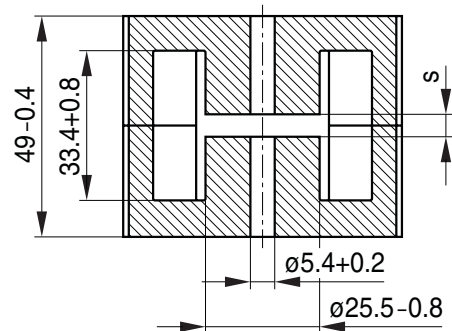
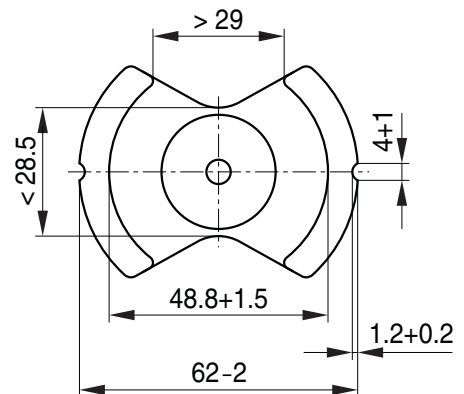
$$l_e = 109 \text{ mm}$$

$$A_e = 570 \text{ mm}^2$$

$$A_{\min} = 470 \text{ mm}^2$$

$$V_e = 62000 \text{ mm}^3$$

Approx. weight 280 g/set



FPM0024-2

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$315 \pm 3\%$	2.60	48	B65684A0315A027
	$630 \pm 3\%$	1.10	95	B65684A0630A027

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code
N27	$9200 +30/-20\%$	1400	< 9.5 (200 mT, 25 kHz, 100 °C)	B65684A0000R027
N87	$9200 +30/-20\%$	1400	< 5.8 (200 mT, 100 kHz, 100 °C)	B65684A0000R087

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

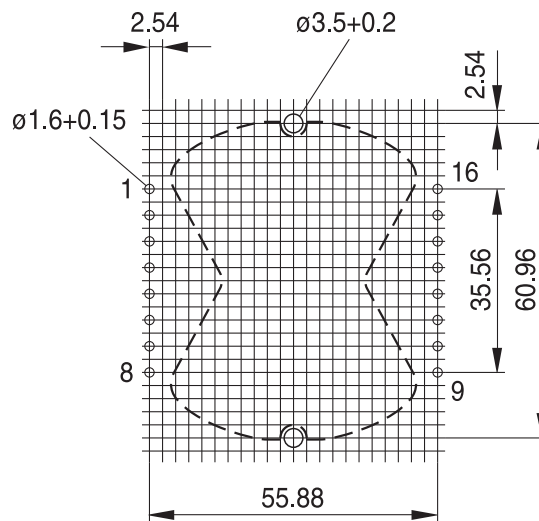
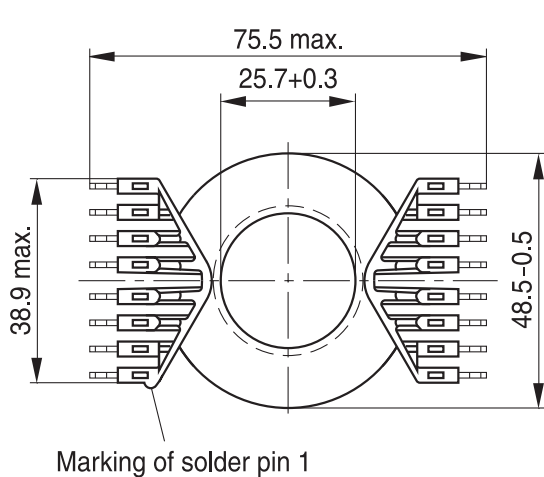
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 s

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

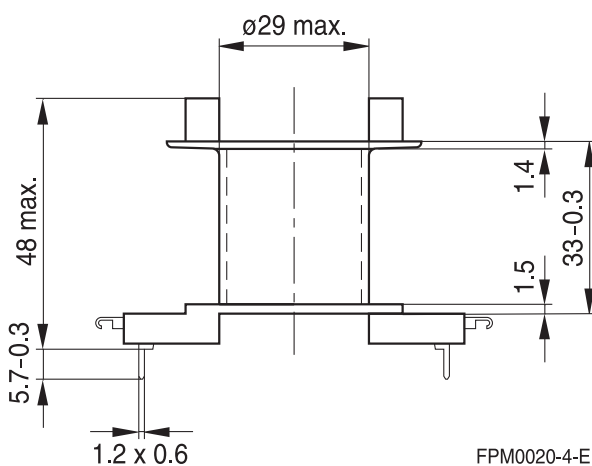
Pins squared in the start-of-winding area.

Also available without solder pins.

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Solder pins	Ordering code
1	270	120	15.4	16	B65685B1016T001
1	270	120	15.4	—	B65685A1000T001



Hole arrangement
View in mounting direction



FPM0020-4-E

Mounting assembly

- For chassis mounting¹⁾ or printed circuit boards
- The set comprises a yoke and a base plate
- Fixing nuts M3 and washers are supplied

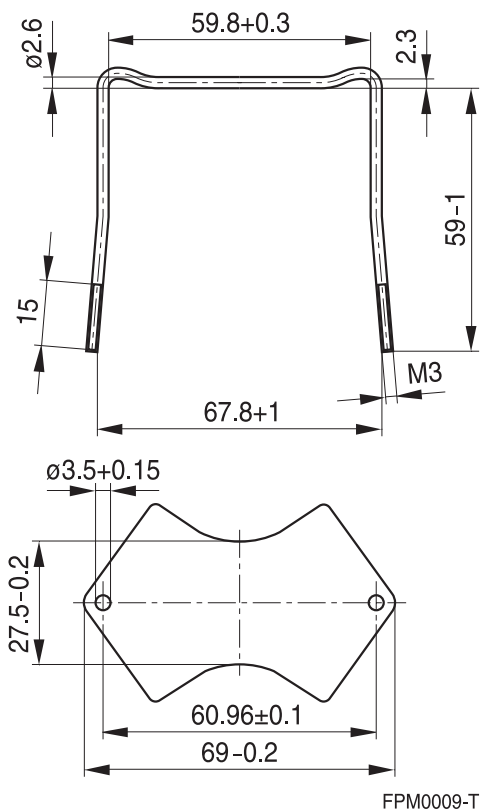
Yoke

- Material: Brass clamping yoke (\varnothing 2.6 mm) with thread

Base plate

- Material: Aluminum (0.6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65685A2000X000



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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