

PM Cores

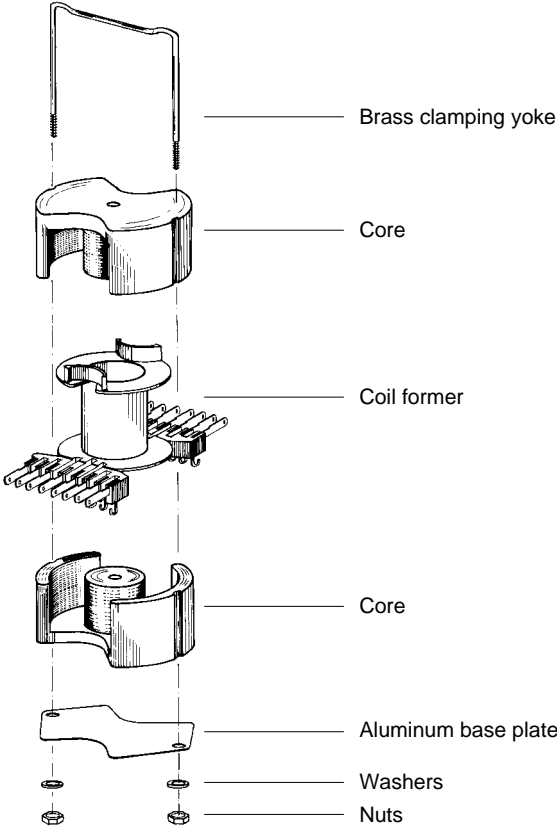
General Information

PM cores are particularly suitable for use in transformers handling high powers in the frequency range up to 300 kHz. For numerous design tasks in telecommunications and industrial electronics (e.g. power pulse transformers in radar transmitters, antenna matching networks, machine control systems, thyristor firing transformers, energy storage chokes in switch-mode power supply equipment and others), the pot core shape offers various advantages: wide flux area for high power at a minimum number of turns, thus causing only low magnetic leakage and stray capacitance, as well as good shielding owing to the closed form, precisely ground air gaps, straightforward assembly and economic mounting.

A family of large pot cores, briefly designated PM cores (for **P**ot core **M**odule), is presented in the following.

Due to the weight of these pot cores, particularly in the case of the large cores 87/70 and 114/93, mounting on PC boards may not always be possible. In these cases, the coil former should be mounted with its terminals upwards.

Example of an assembly set:



FPM0002-6

1 Core losses

For each core type, the maximum dissipation loss is specified in W/set with the relevant measurement parameters. The flux density has been calculated on the basis of a sinusoidal voltage and is referred to the minimum cross-sectional area A_{\min} .

2 Torque

When using the mounting assembly, the torques for tightening the nuts (without printed circuit board) are as follows:

Type	Torque
PM 50	0,4 Nm
PM 62	0,6 Nm
PM 74	0,8 Nm
PM 87	1,0 Nm
PM 114	1,2 Nm

- In accordance with IEC 61247
- Particularly suitable for power transformers and energy storage chokes
- PM cores are supplied in sets

Magnetic characteristics (per set)

$$\Sigma l/A = 0,227 \text{ mm}^{-1}$$

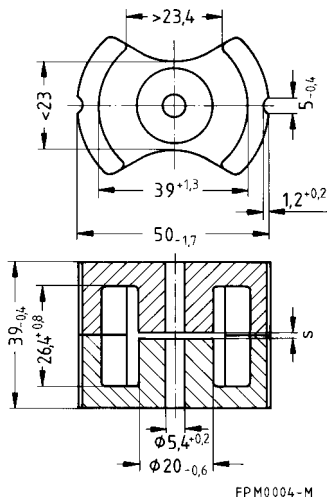
$$l_e = 84 \text{ mm}$$

$$A_e = 370 \text{ mm}^2$$

$$A_{\min} = 280 \text{ mm}^2$$

$$V_e = 31\,000 \text{ mm}^3$$

Approx. weight 140 g/set



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$250 \pm 3\%$	2,00	45	B65646-A250-A27
	$630 \pm 3\%$	0,63	114	B65646-A630-A27

Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$ nH	P_V W/set	Ordering code
N27	$7400 + 30/-20\%$	1330	5000	4,2 (200 mT, 25 kHz, 100 °C)	B65646-A-R27
N87	$7400 + 30/-20\%$	1330	5000	15,5 (200 mT, 100 kHz, 100 °C)	B65646-A-R87

Coil former

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F \triangleq max. operating temperature 155 °C), color code black

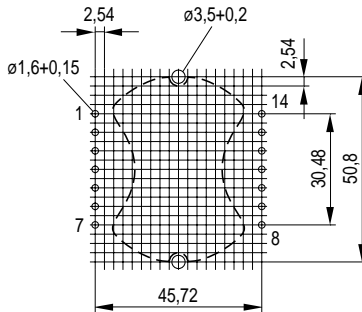
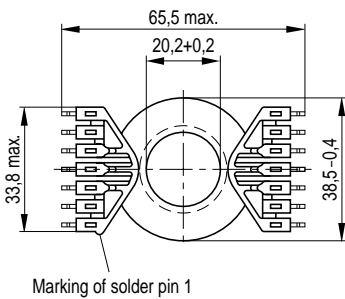
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

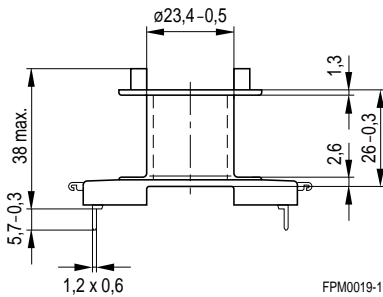
Winding: see page 153

Also available without solder pins

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Solder pins	Ordering code
1	154	96,8	21,6	14	B65647-B1014-T1
1	154	96,8	21,6	—	B65647-A1000-T1



Hole arrangement
View in mounting direction



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

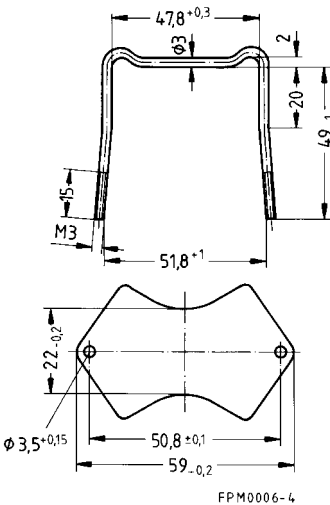
Yoke

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

Base plate

- Material: Aluminum (0,6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65647-A2000



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

- In accordance with IEC 61247
- Particularly suitable for power transformers and energy storage chokes
- PM cores are supplied in sets

Magnetic characteristics (per set)

$\Sigma/A = 0,191 \text{ mm}^{-1}$

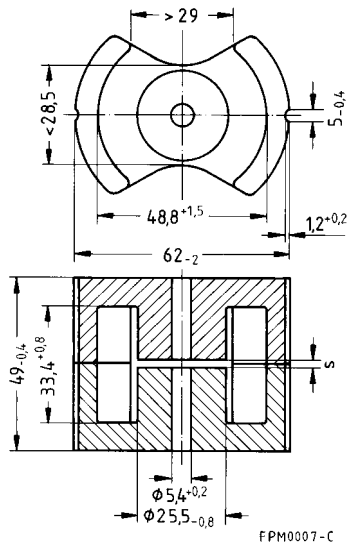
$l_e = 109 \text{ mm}$

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

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

$V_e = 62\,000 \text{ mm}^3$

Approx. weight 280 g/set



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$315 \pm 3\%$	2,60	48	B65684-A315-A27
	$630 \pm 3\%$	1,10	95	B65684-A630-A27

Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$ nH	P_V W/set	Ordering code
N27	$9200 + 30/- 20\%$	1400	5950	9,5 (200 mT, 25 kHz, 100 °C)	B65684-A-R27
N87	$9200 + 30/- 20\%$	1400	5950	5,8 (200 mT, 100 kHz, 100 °C)	B65684-A-R87

Coil former

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F \triangleq max. operating temperature 155 °C), color code black

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

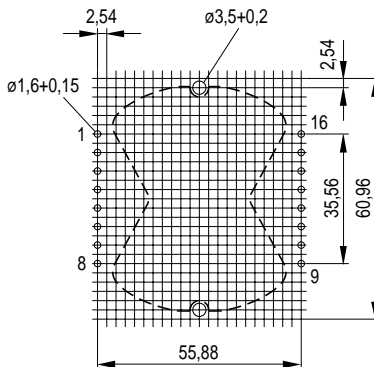
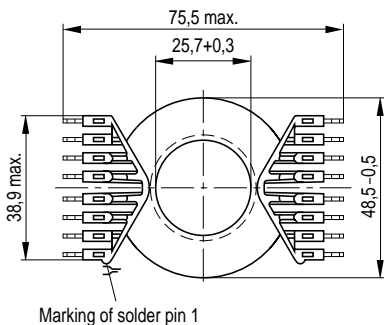
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see page 153

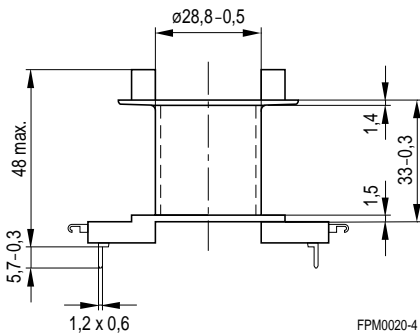
Pins squared in the start-of-winding area

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	B65685-B1016-T1
1	270	120	15,4	—	B65685-A1000-T1



Hole arrangement
View in mounting direction



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

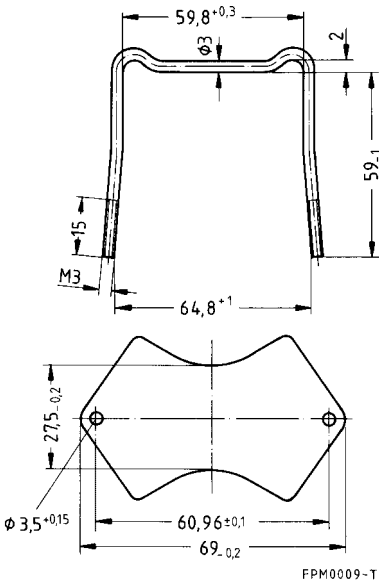
Yoke

- Material: Brass clamping yoke (∅ 3 mm) with thread

Base plate

- Material: Aluminum (0,6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65685-A2000



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

- In accordance with IEC 61247
- Particularly suitable for power transformers and energy storage chokes
- PM cores are supplied in sets

Magnetic characteristics (per set)

$\Sigma/A = 0,162 \text{ mm}^{-1}$

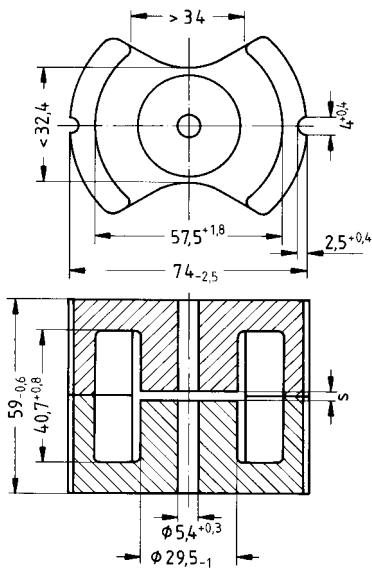
$l_e = 128 \text{ mm}$

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

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

$V_e = 101\,000 \text{ mm}^3$

Approx. weight 460 g/set



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$315 \pm 3 \%$	3,80	41	B65686-A315-A27
	$630 \pm 3 \%$	1,50	81	B65686-A630-A27

Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$ nH	P_V W/set	Ordering code
N27	$10000 + 30/- 20 \%$	1290	7000	7,5 (150 mT, 25 kHz, 100 °C)	B65686-A-R27
N87	$10000 + 30/- 20 \%$	1290	7000	9,6 (100 mT, 100 kHz, 100 °C)	B65686-A-R87

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

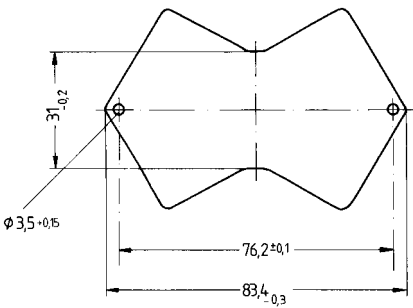
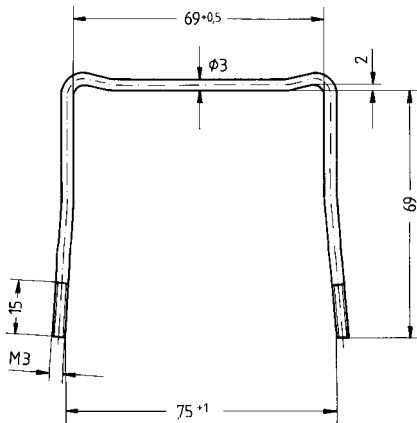
Yoke

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

Base plate

- Material: Aluminum (0,6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65687-A2000



FPM0012-D

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

- In accordance with IEC 61247
- For power transformers
> 1 kW (20 kHz) and energy storage chokes
- PM cores are supplied in sets

Magnetic characteristics (per set)

$$\Sigma/A = 0,161 \text{ mm}^{-1}$$

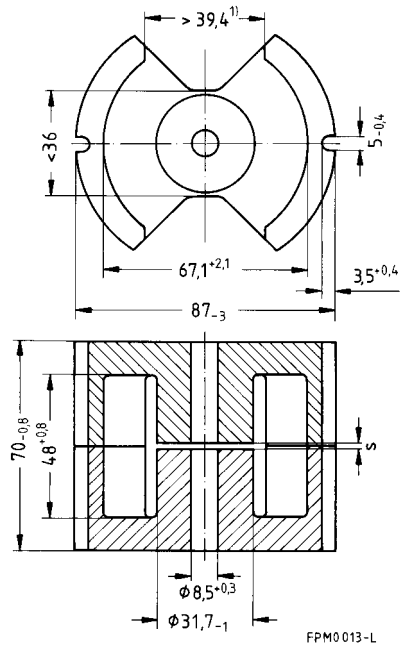
$$l_e = 146 \text{ mm}$$

$$A_e = 910 \text{ mm}^2$$

$$A_{\min} = 700 \text{ mm}^2$$

$$V_e = 133\,000 \text{ mm}^3$$

Approx. weight 770 g/set



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$400 \pm 3 \%$	3,50	51	B65713-A400-A27
	$5000 \pm 15 \%$	0,14	640	B65713-A5000-L27

Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$ nH	P_V W/set	Ordering code
N27	$12000 + 30/- 20 \%$	1530	7050	12,4 (150 mT, 25 kHz, 100 °C)	B65713-A-R27

Coil former

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F \triangleq max. operating temperature 155 °C), color code black

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

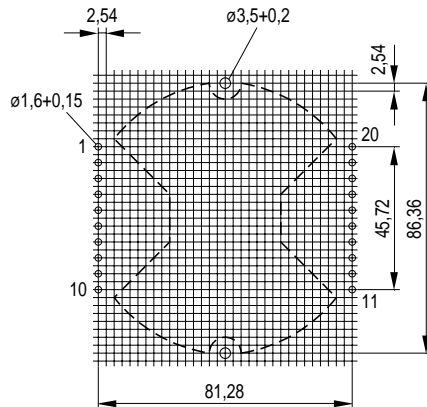
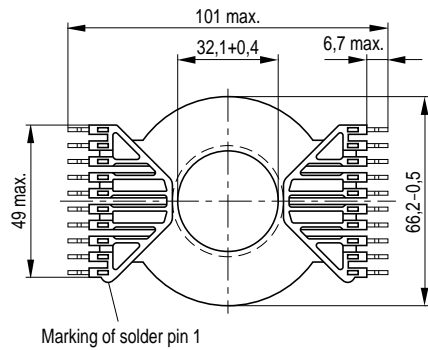
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see page 153

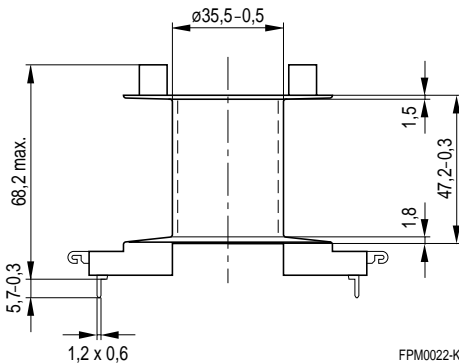
Pins squared in the start-of-winding area

Also available without solder pins

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Solder pins	Ordering code
1	657	158	8,27	20	B65714-K1020-T1
1	657	158	8,27	—	B65714-J1000-T1



Hole arrangement
View in mounting direction



FPM0022-K

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

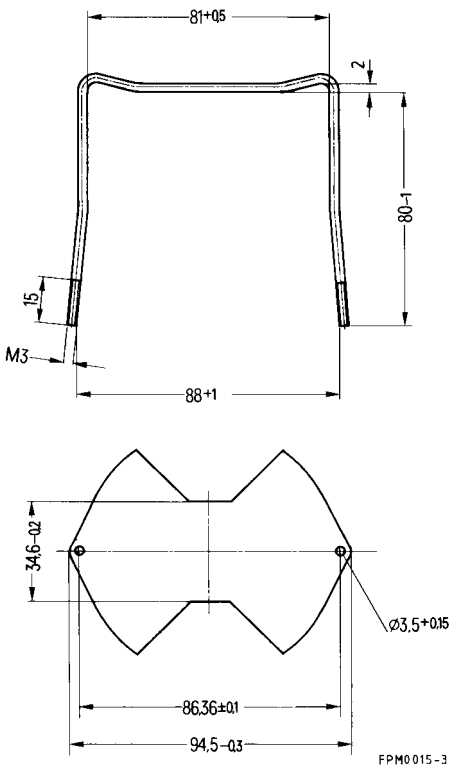
Yoke

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

Base plate

- Material: Aluminum (0,6 mm)

	Ordering code
Complete mounting assembly including nuts and washers	B65714-A2000



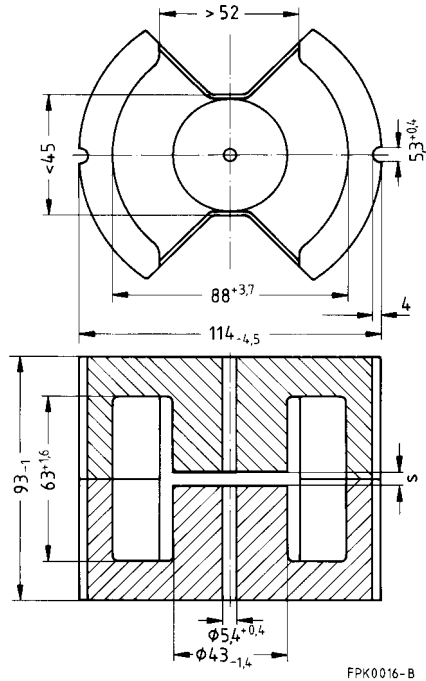
1) On a chassis the coil former must be mounted with its solder pins upward.

- In accordance with IEC 61247
- For power transformers
> 1 kW (20 kHz) and energy storage chokes
- PM cores are supplied in sets

Magnetic characteristics (per set)

$\Sigma/A = 0,116 \text{ mm}^{-1}$
 $l_e = 200 \text{ mm}$
 $A_e = 1\,720 \text{ mm}^2$
 $A_{\min} = 1\,380 \text{ mm}^2$
 $V_e = 344\,000 \text{ mm}^3$

Approx. weight 1940 g/set



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
N27	$630 \pm 3 \%$	3,80	58	B65733-A630-A27
	$6300 \pm 15 \%$	0,22	581	B65733-A6300-L27

Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$ nH	P_V W/set	Ordering code
N27	$16000 + 30/- 20 \%$	1480	9750	14,0 (100 mT, 25 kHz, 100 °C)	B65733-A-R27

Coil former without solder pins

Material: Polyphenylene sulphide (UL 94 V-0, insulation class to IEC 85:
F \triangleq max. operating temperature 155 °C), color code brown

Winding: see page 153

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Ordering code
1	1070	210	6,75	B65734-B1000-T1

