



## E/ELP Cores

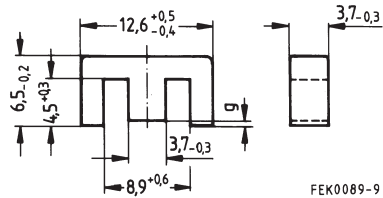
**Series/Type:** E 13/7/4

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B66305F0000X142	B66305F0000X066	2002-08-02	2002-12-31	2003-03-31

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.epcos.com/sales](http://www.epcos.com/sales).

- In accordance with IEC 61246
- For miniature transformers
- Available with SMD coil former
- E cores with high permeability for common-mode chokes and broadband applications
- E cores are supplied as single units



FEK0089-9

**Magnetic characteristics** (per set)

$$\Sigma l/A = 2,39 \text{ mm}^{-1}$$

$$l_e = 29,6 \text{ mm}$$

$$A_e = 12,4 \text{ mm}^2$$

$$A_{\min} = 12,2 \text{ mm}^2$$

$$V_e = 367 \text{ mm}^3$$

**Approx. weight** 2 g/set

**Ungapped**

Material	$A_L$ value nH	$\mu_e$	$A_{L1\min}$ nH	$P_V$ W/set	Ordering code
N30	1000 + 30/– 20 %	1900			B66305-G-X130
N27	800 + 30/– 20 %	1510	530	< 0,40 (200 mT, 100 kHz, 100 °C)	B66305-G-X127
N87	850 + 30/– 20 %	1620	530	< 0,20 (200 mT, 100 kHz, 100 °C)	B66305-G-X187
T42	3600 ± 30 %	6830			B66305-F-X142

**Gapped**

Material	$g$ mm	$A_L$ value approx. nH	$\mu_e$	Ordering code
N27	0,04 ± 0,01	250	454	B66305-G40-X127

The  $A_L$  value in the table applies to a core set comprising one ungapped core (dimension  $g = 0$ ) and one gapped core (dimension  $g > 0$ ).

**Calculation factors** (for formulas, see “*E cores: general information*”, page 382)

Material	Relationship between air gap – $A_L$ value		Calculation of saturation current			
	$K1$ (25 °C)	$K2$ (25 °C)	$K3$ (25 °C)	$K4$ (25 °C)	$K3$ (100 °C)	$K4$ (100 °C)
N27	28,4	– 0,676	36,5	– 0,847	33,2	– 0,865
N87	28,4	– 0,676	37,5	– 0,796	32,1	– 0,873

Validity range:  $K1, K2$ :  $0,03 \text{ mm} < s < 1,00 \text{ mm}$   
 $K3, K4$ :  $30 \text{ nH} < A_L < 260 \text{ nH}$

**Coil former (magnetic axis horizontal or vertical)**

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

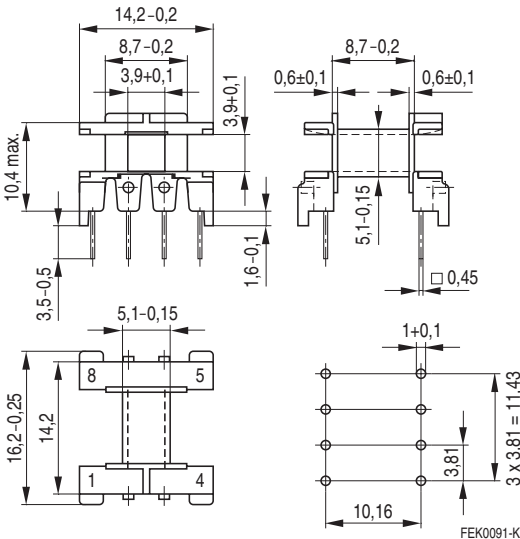
Winding: see "Processing Notes", page 159

Squared pins

**Yoke**

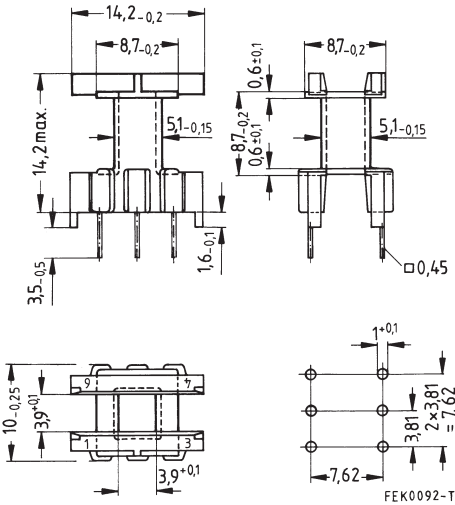
Material: Stainless spring steel (0,2 mm)

Coil former						Ordering code
Figure	Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	
1	1	11,6	27,2	80,6	8	B66202-A1108-T1
2	1	11,6	27,2	80,6	6	B66202-J1106-T1
Yoke (ordering code per piece, 2 are required)						B66202-A2010

**Figure 1, horizontal version**


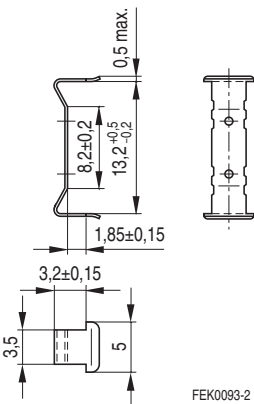
Hole arrangement  
View in mounting direction

Figure 2, vertical version



Hole arrangement  
View in mounting direction

Yoke



**SMD**

**SMD coil former with gullwing terminals**

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

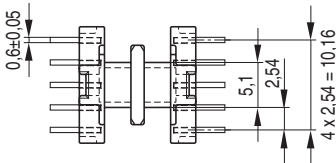
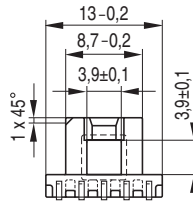
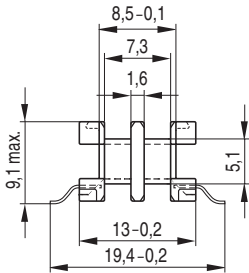
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 350 °C, 1 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s  
permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

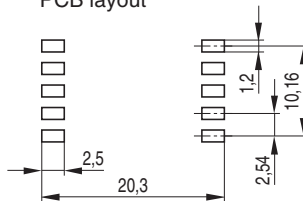
Winding: see "Processing Notes", page 160

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Terminals	Ordering code
1	13,0	27	71	10	B66306-C1010-T1
2	10,2	27	91	10	B66306-C1010-T2

**Coil former**



**Recommended PCB layout**



FEK0291-X

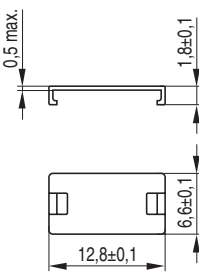
**Cover plate**

- For stamping and for improved processing on assembly machines
- See under coil former for material and resistance to soldering heat

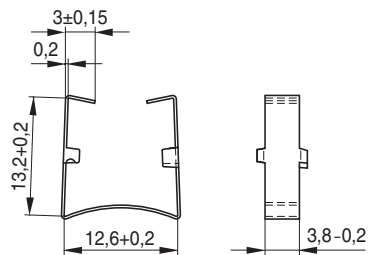
**Yoke (on request)**

Material: Nickel silver (0,2 mm)

	Ordering code
Cover plate	B66414-A7000
Yoke	B66202-J2001

**Cover plate**


FEK0260-3

**Yoke**


FEK0396-A

**Herausgegeben von EPCOS AG**

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