



EF coil formers

Series/Type: E 30_15_7

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B66232A1114T001 | B66232B1114T001 | 2010-01-29 | 2010-04-30 | 2010-07-30 |

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.

E 30/15/7

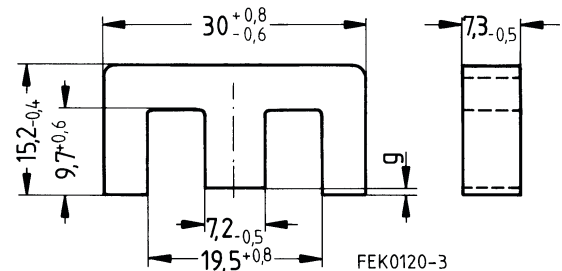
Core

B66319

■ Delivery mode: single units

Magnetic characteristics (per set)

$\Sigma l/A = 1.12 \text{ mm}^{-1}$
 $l_e = 67 \text{ mm}$
 $A_e = 60 \text{ mm}^2$
 $A_{\text{min}} = 49 \text{ mm}^2$
 $V_e = 4000 \text{ mm}^3$



Approx. weight 22 g/set

Ungapped

| Material | A_L value nH | μ_e | P_V W/set | Ordering code |
|----------|-------------------|---------|----------------------------------|-----------------|
| N30 | 3100 +30/-20% | 2760 | | B66319G0000X130 |
| N27 | 1700 +30/-20% | 1510 | < 0.81 (200 mT, 25 kHz, 100 °C) | B66319G0000X127 |
| N87 | 1900 +30/-20% | 1690 | < 2.20 (200 mT, 100 kHz, 100 °C) | B66319G0000X187 |

Gapped

| Material | g mm | A_L value approx. nH | μ_e | Ordering code ** = 27 (N27) = 87 (N87) |
|----------|------------|------------------------------|---------|--|
| N27, | 0.10 ±0.02 | 460 | 410 | B66319G0100X1** |
| N87 | 0.18 ±0.02 | 300 | 265 | B66319G0180X1** |
| | 0.34 ±0.02 | 195 | 175 | B66319G0340X1** |

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”)

| 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 | 90 | -0.708 | 156 | -0.847 | 144 | -0.865 |
| N87 | 90 | -0.708 | 154 | -0.796 | 140 | -0.873 |

Validity range: K1, K2: 0.10 mm < s < 2.00 mm
 K3, K4: 560 nH < A_L < 60 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
 B66232A, B: Valox 420-SE0® [E45329 (M)], GE PLASTICS B V
 B66232J: 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

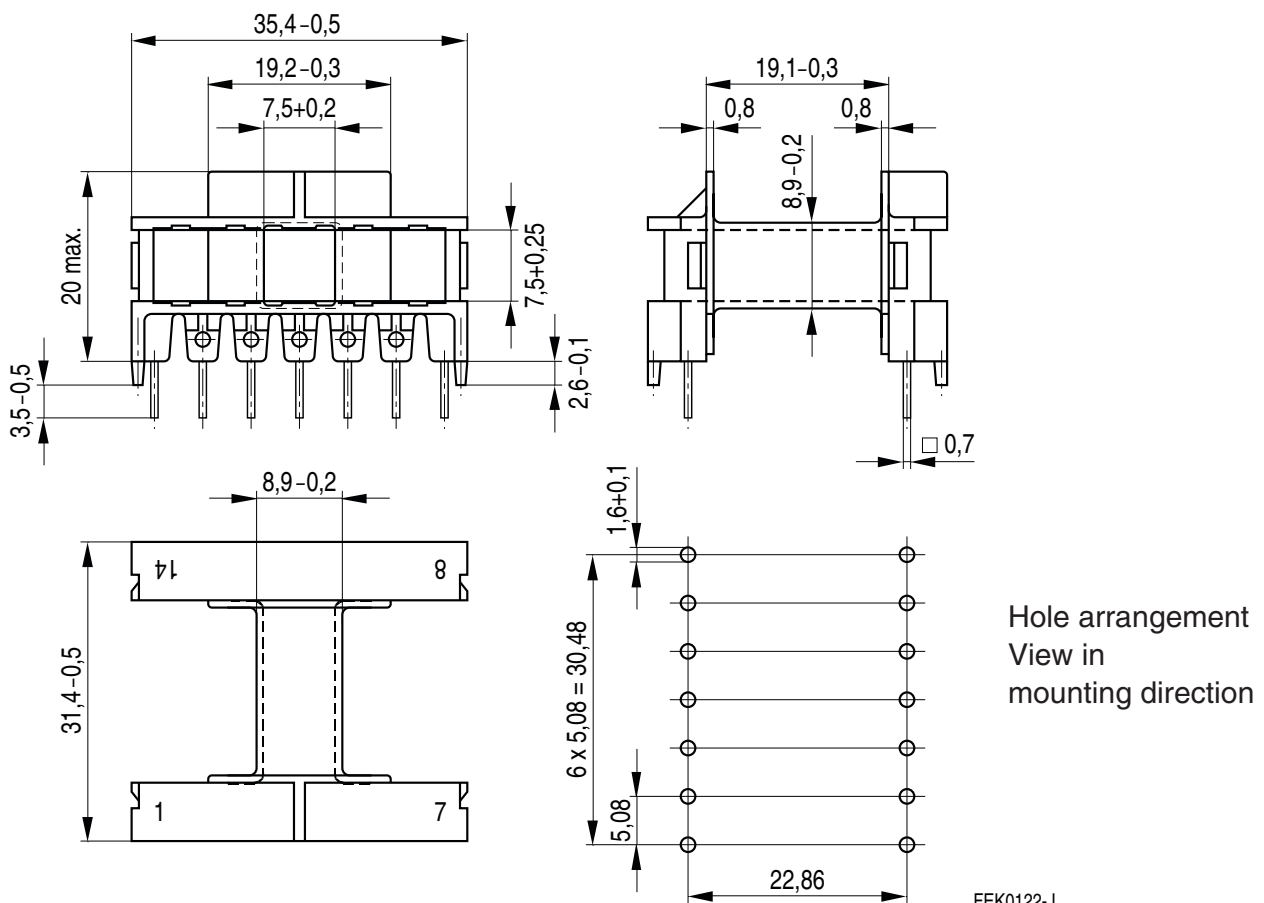
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Squared pins.

Yoke Material: Stainless spring steel (0.4 mm)

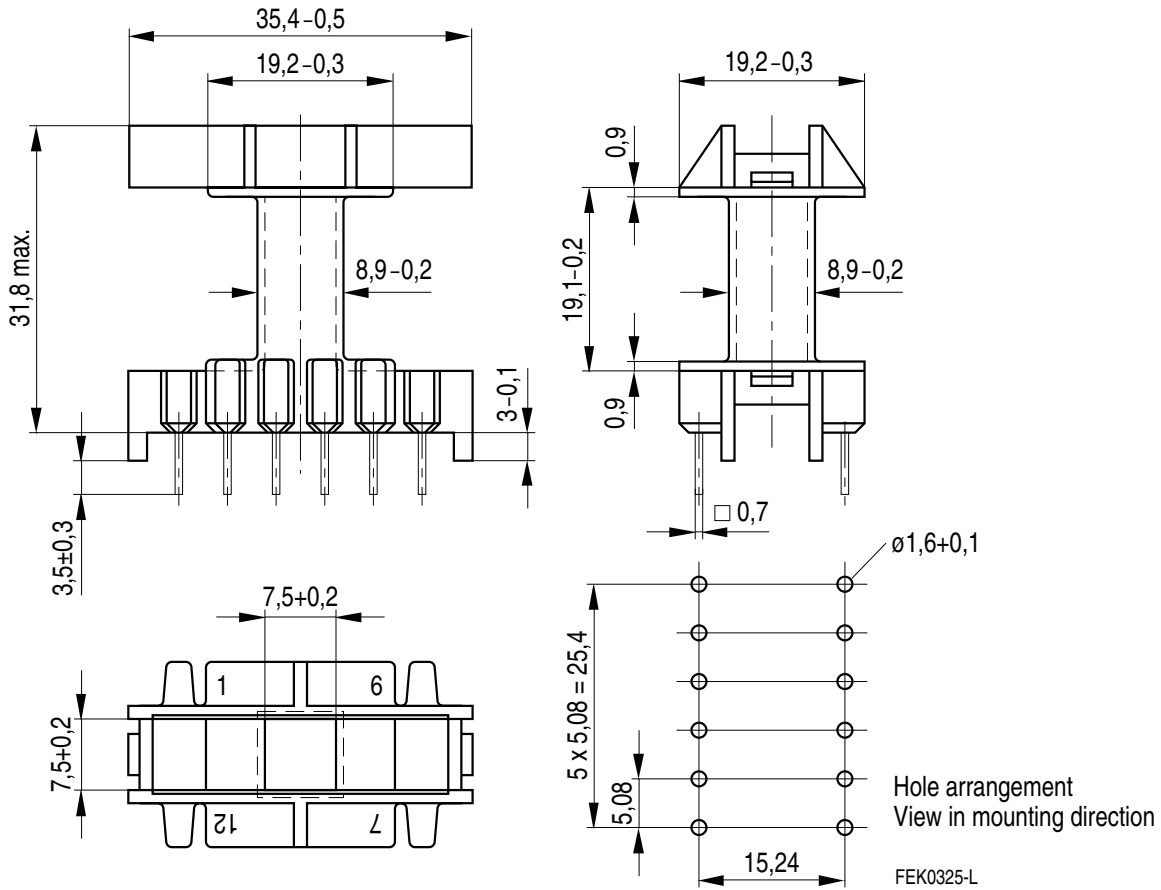
| Coil former | | | | | | Ordering code |
|--|----------|-----------------------------------|----------------------|----------------------------|------|-----------------|
| Version | Sections | A _N mm ² | l _N mm | A _R value μΩ | Pins | |
| Horizontal | 1 | 90 | 56 | 21 | 14 | B66232B1114T001 |
| Vertical | 1 | 90 | 56 | 21 | 12 | B66232J1112T001 |
| Yoke (ordering code per piece, 2 are required) | | | | | | B66232A2010X000 |

Horizontal version

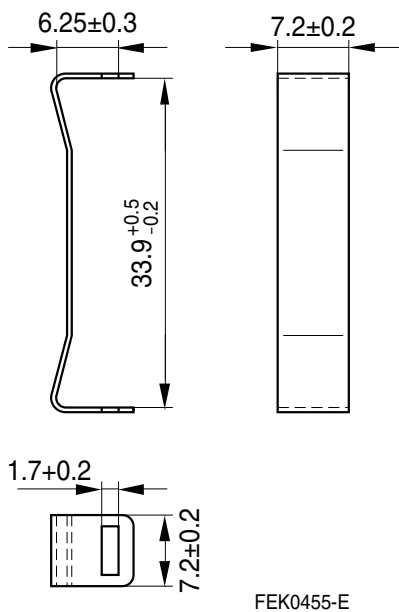


FEK0122-J

Vertical version



Yoke



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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