Ferrites and accessories

EELP 22, EILP 22
Core set (with and without clamp recess)

Series/Type: **B66285G, B66285P, B66455G, B66455P, B65804**

Date: September 2006

Core set EELP 22
Combination: ELP 22/6/16 with ELP 22/6/16

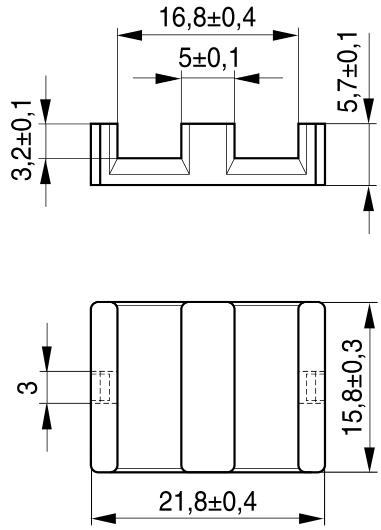
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

$\Sigma l/A$ = 0.41 mm^{-1}
l_e = 32.5 mm
A_e = 78.3 mm^2
A_{min} = 77.9 mm^2
V_e = 2540 mm^3

Approx. weight 13 g/set

ELP 22/6/16



FEK0339-R

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code (per piece)
N49	3100 ±25%	1010	< 0.65 (50 mT, 500 kHz, 100 °C)	B66285G0000X149
N92	3400 ±25%	1110	< 1.65 (200 mT, 100 kHz, 100 °C)	B66285G0000X192
N87	4500 ±25%	1470	< 1.50 (200 mT, 100 kHz, 100 °C)	B66285G0000X187
N97	4600 ±25%	1520	< 1.20 (200 mT, 100 kHz, 100 °C)	B66285G0000X197

Calculation factors (for formulas, see *"E cores: general information"*)
EELP 22:

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)
N87	126	–0.814	232	–0.796	200	–0.873

Validity range: K1, K2: 0.10 mm < s < 1.50 mm
K3, K4: 100 nH < A_L < 700 nH

Core set EILP 22
Combination:
ELP 22/6/16 with I 22/2.5/16

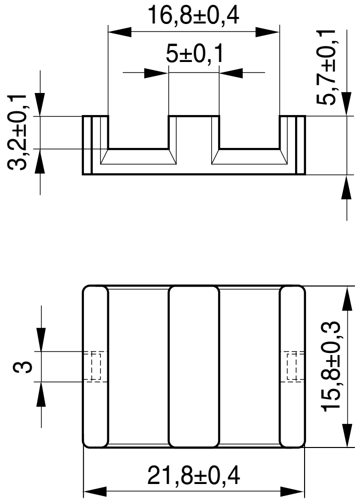
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

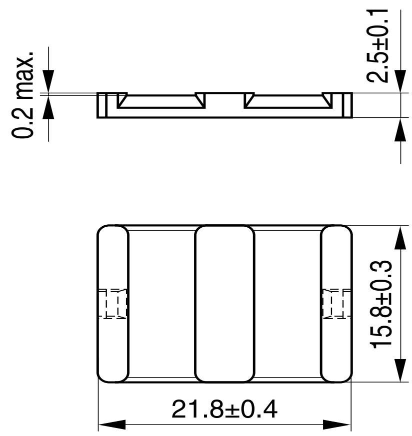
$\Sigma l/A = 0.33\ mm^{-1}$
$l_e = 26.1\ mm$
$A_e = 78.5\ mm^2$
$A_{min} = 77.9\ mm^2$
$V_e = 2050\ mm^3$

Approx. weight 10.5 g/set

ELP 22/6/16



I 22/2.5/16



Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code (per piece)
N49	3700 ±25%	960	< 0.50 (50 mT, 500 kHz, 100 °C)	B66285G0000X149 (ELP core) B66285P0000X149 (I core)
N92	4000 ±25%	1050	< 1.38 (200 mT, 100 kHz, 100 °C)	B66285G0000X192 (ELP core) B66285P0000X192 (I core)
N87	5200 ±25%	1360	< 1.25 (200 mT, 100 kHz, 100 °C)	B66285G0000X187 (ELP core) B66285P0000X187 (I core)
N97	5250 ±25%	1390	< 1.00 (200 mT, 100 kHz, 100 °C)	B66285G0000X197 (ELP core) B66285P0000X197 (I core)

Calculation factors (for formulas, see *"E cores: general information"*)
EILP 22:

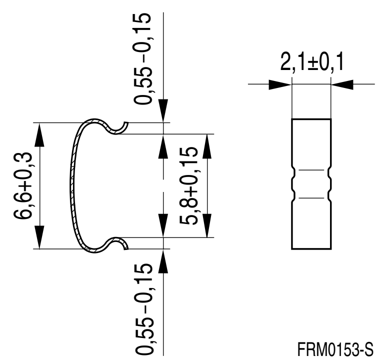
Material	Relationship between air gap – A_L value		Calculation of saturation current			
	K1 (25 °C)	K2 (25 °C)	K3 (25 °C)	K4 (25 °C)	K3 (100 °C)	K4 (100 °C)
N87	134	–0.806	243	–0.796	206	–0.873

Validity range: K1, K2: 0.10 mm < s < 1.50 mm
K3, K4: 100 nH < A_L < 700 nH

Clamp

Ordering code per piece, 2 pieces required

Ordering code: B65804P2204X000



Core set EELP 22
Combination: ELP 22/6/16 with ELP 22/6/16

- To IEC 62317-9
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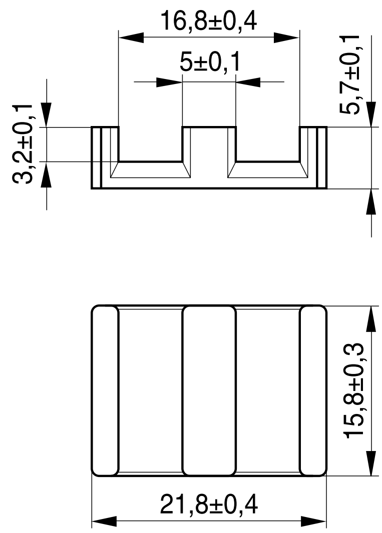
Approx. weight 13 g/set

ELP 22/6/16



FEK0402-N

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code (per piece)
N49	3100 ±25%	1010	< 0.65 (50 mT, 500 kHz, 100 °C)	B66455G0000X149
N92	3400 ±25%	1110	< 1.65 (200 mT, 100 kHz, 100 °C)	B66455G0000X192
N87	4500 ±25%	1470	< 1.50 (200 mT, 100 kHz, 100 °C)	B66455G0000X187
N97	4600 ±25%	1520	< 1.20 (200 mT, 100 kHz, 100 °C)	B66455G0000X197

Calculation factors (for formulas, see *"E cores: general information"*)
EELP 22:

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)
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Validity range: K1, K2: 0.10 mm < s < 1.50 mm
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Core set EILP 22
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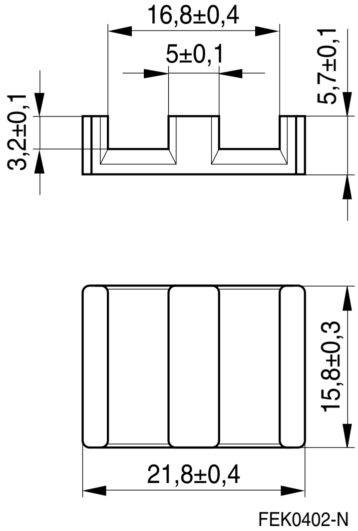
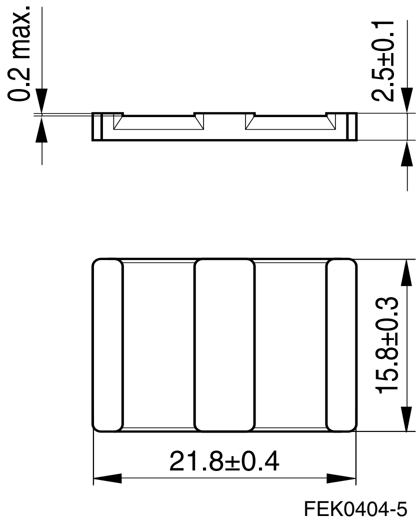
Approx. weight 10.5 g/set

ELP 22/6/16



I 22/2.5/16



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N87	134	–0.806	243	–0.796	206	–0.873

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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 the special behavior under mechanical load.

As valid for any ceramic material, ferrite cores are brittle and sensitive to any shock, fast changing or tensile load. Especially high cooling rates under ultrasonic cleaning and high static or 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 is the value for the initial permeability. Thus the embedding medium should have 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 irreversible in high magnetic fields.

Processing notes

- The start of the winding process should be soft. Else the flanges may be destroid.
- To strong winding forces may blast the flanges or squeeze the tube that the cores can no more be mount.
- To long soldering time at high temperature (>300 °C) may effect 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 pollution with Sn oxyd of the tin bath or burned insulation of the wire. For detailed information see Data Book 2007, chapter “Processing notes, 2.2”.
- The dimensions of the hole arrangement have fixed values and should be understood as a recommendation for drilling the printed circuit board. For dimensioning the pins, the group of holes can only be seen under certain conditions, as they fit into the given hole arrangement. To avoid problems when mounting the transformer, the manufacturing tolerances for positioning the customers’ drilling process must be considered by increasing the hole diameter.

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