Ferrites and accessories

EELP 38, EILP 38
Core set (with and without clamp recess)

Series/Type: **B66289G, B66289P, B66459G, B66459P**
Date: September 2006

Core (with clamp recess) B66289

Core set EELP 38
Combination: ELP 38/8/25 with ELP 38/8/25

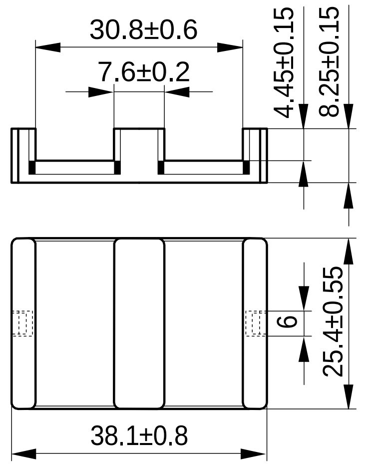
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

©l/A = 0.27 mm^{-1}
l_e = 52.4 mm
A_e = 194 mm^2
A_{min} = 192 mm^2
V_e = 10200 mm^3

Approx. weight 52 g/set

ELP 38/8/25



FEK0371-P

Ungapped

Material	A_L value nH	∝$_e$	P_V W/set	Ordering code (per piece)
N49	4850 ±25%	1040	< 2.60 (50 mT, 500 kHz, 100 °C)	B66289G0000X149
N92	5400 ±25%	1160	< 6.65 (200 mT, 100 kHz, 100 °C)	B66289G0000X192
N87	7200 ±25%	1550	< 6.05 (200 mT, 100 kHz, 100 °C)	B66289G0000X187
N97	7400 ±25%	1590	< 5.15 (200 mT, 100 kHz, 100 °C)	B66289G0000X197

Calculation factors (for formulas, see *"E cores: general information"*)
EELP 38:

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	302	–0.815	522	–0.796	466	–0.873

Validity range: K1, K2: 0.10 mm < s < 2.00 mm
K3, K4: 180 nH < A_L < 1500 nH

Core (with clamp recess) B66289

Core set EILP 38
Combination:
ELP 38/8/25 with I 38/4/25

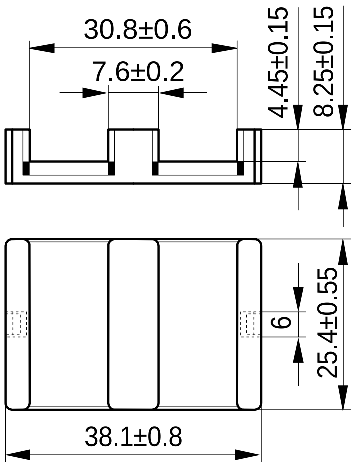
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

Σl/A = 0.22 mm^{-1}
l_e = 43.6 mm
A_e = 194 mm^2
A_{min} = 192 mm^2
V_e = 8440 mm^3

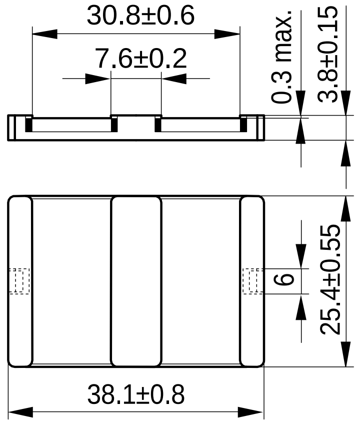
Approx. weight 44 g/set

ELP 38/8/25



FEK0371-P

I 38/4/25



FEK0372-X

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code (per piece)
N49	5700 ±25%	1000	< 2.20 (50 mT, 500 kHz, 100 °C)	B66289G0000X149 (ELP core) B66289P0000X149 (I core)
N92	6200 ±25%	1110	< 5.30 (200 mT, 100 kHz, 100 °C)	B66289G0000X192 (ELP core) B66289P0000X192 (I core)
N87	8300 ±25%	1450	< 5.15 (200 mT, 100 kHz, 100 °C)	B66289G0000X187 (ELP core) B66289P0000X187 (I core)
N97	8400 ±25%	1500	< 4.40 (200 mT, 100 kHz, 100 °C)	B66289G0000X197 (ELP core) B66289P0000X197 (I core)

Calculation factors (for formulas, see *"E cores: general information"*)
EILP 38:

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	328	–0.788	541	–0.796	477	–0.873

Validity range: K1, K2: 0.10 mm < s < 2.00 mm
K3, K4: 180 nH < A_L < 1500 nH

Core (without clamp recess) B66459

Core set EELP 38
Combination: ELP 38/8/25 with ELP 38/8/25

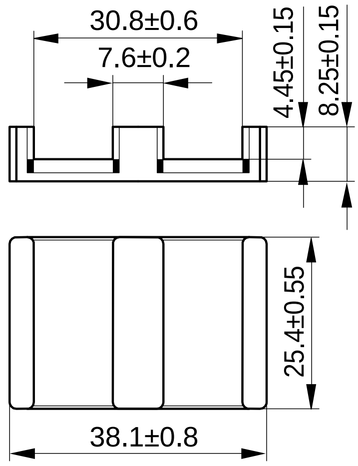
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

©l/A = 0.27 mm^{-1}
l_e = 52.4 mm
A_e = 194 mm^2
A_{min} = 192 mm^2
V_e = 10200 mm^3

Approx. weight 52 g/set

ELP 38/8/25



FEK0406-L

Ungapped

Material	A_L value nH	∝e	P_V W/set	Ordering code (per piece)
N49	4850 ±25%	1040	< 2.60 (50 mT, 500 kHz, 100 °C)	B66459G0000X149
N92	5400 ±25%	1160	< 6.65 (200 mT, 100 kHz, 100 °C)	B66459G0000X192
N87	7200 ±25%	1550	< 6.05 (200 mT, 100 kHz, 100 °C)	B66459G0000X187
N97	7400 ±25%	1590	< 5.15 (200 mT, 100 kHz, 100 °C)	B66459G0000X197

Calculation factors (for formulas, see *"E cores: general information"*)
EELP 38:

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	302	–0.815	522	–0.796	466	–0.873

Validity range: K1, K2: 0.10 mm < s < 2.00 mm
K3, K4: 180 nH < A_L < 1500 nH

Core set EILP 38
Combination:
ELP 38/8/25 with I 38/4/25

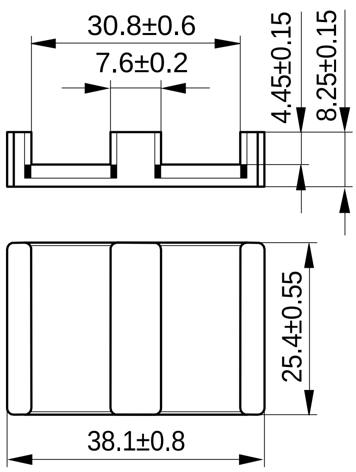
- To IEC 62317-9
- Delivery mode: single units

Magnetic characteristics (per set)

©l/A = 0.22 mm^{-1}
l_e = 43.6 mm
A_e = 194 mm^2
A_{min} = 192 mm^2
V_e = 8440 mm^3

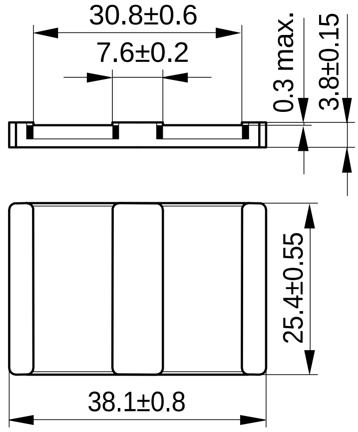
Approx. weight 44 g/set

ELP 38/8/25



FEK0406-L

I 38/4/25



FEK0407-U

Ungapped

Material	A_L value nH	$\propto_e$	P_V W/set	Ordering code (per piece)
N49	5700 ±25%	1000	< 2.20 (50 mT, 500 kHz, 100 °C)	B66459G0000X149 (ELP core) B66459P0000X149 (I core)
N92	6200 ±25%	1110	< 5.30 (200 mT, 100 kHz, 100 °C)	B66459G0000X192 (ELP core) B66459P0000X192 (I core)
N87	8300 ±25%	1450	< 5.15 (200 mT, 100 kHz, 100 °C)	B66459G0000X187 (ELP core) B66459P0000X187 (I core)
N97	8400 ±25%	1500	< 4.40 (200 mT, 100 kHz, 100 °C)	B66459G0000X197 (ELP core) B66459P0000X197 (I core)

Calculation factors (for formulas, see *"E cores: general information"*)
EILP 38:

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	328	–0.788	541	–0.796	477	–0.873

Validity range: K1, K2: 0.10 mm < s < 2.00 mm
K3, K4: 180 nH < A_L < 1500 nH

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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