Ferrites and accessories

EPO 13
Core and accessories

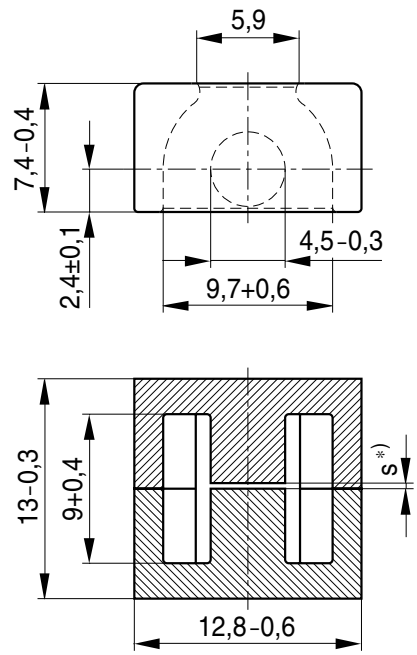
Series/Type: **B65843P, B65844**
Date: September 2006

- Recommended for xDSL applications with transformer height constraints
- Low-profile version of EP13 (1.6 mm lower than EP13)
- Distortion performance close to EP13
- Fully compatible with EP13 coils
- Delivery mode: sets

Magnetic characteristics (per set)

$\Sigma l/A$ = 1.34 mm^{-1}
l_e = 25.8 mm
A_e = 19.3 mm^2
A_{min} = 14.9 mm^2
V_e = 498 mm^3

Approx. weight 3 g/set



*) gapped (one-sided)

FEP0025-L

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code
T38	63 ±3%	0.38	67	B65843P0063A038
	100 ±3%	0.24	106	B65843P0100A038
	160 ±4%	0.15	170	B65843P0160B038
	200 ±4%	0.12	213	B65843P0200B038
	250 ±5%	0.09	266	B65843P0250J038
	315 ±6%	0.07	335	B65843P0315C038
	400 ±7%	0.06	426	B65843P0400E038
T57	63 ±3%	0.38	67	B65843P0063A057
	100 ±3%	0.24	106	B65843P0100A057
	160 ±4%	0.15	170	B65843P0160B057
	200 ±4%	0.11	213	B65843P0200B057
	250 ±5%	0.09	266	B65843P0250J057
	315 ±6%	0.07	335	B65843P0315C057
	400 ±7%	0.05	426	B65843P0400E057

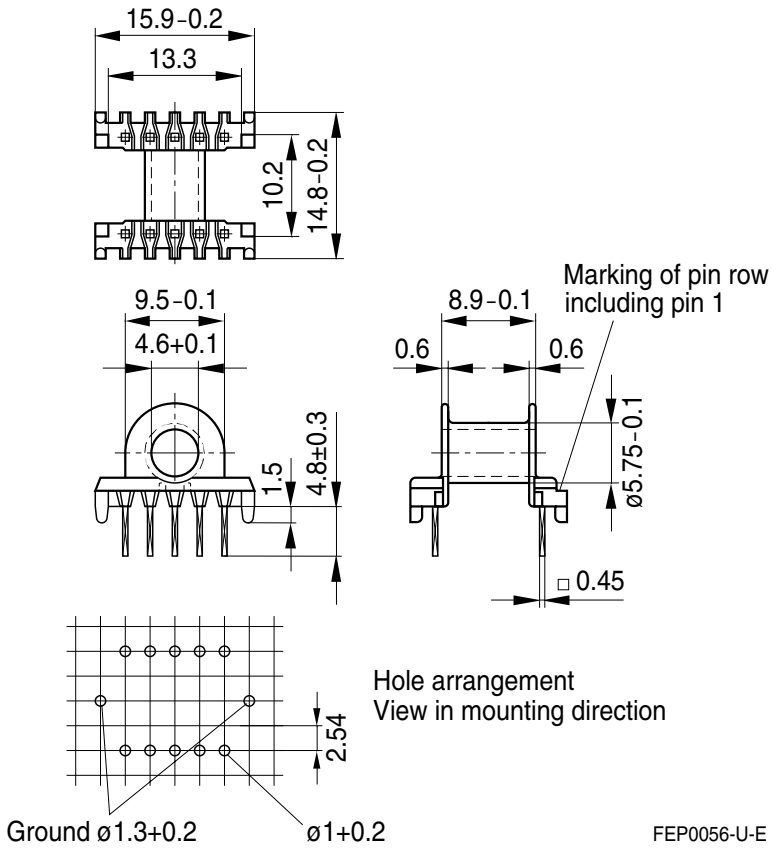
Ungapped

Material	A_L value nH	μ_e	Ordering code
T57	2400 +30/–20%	2550	B65843P0000R057
T38	6600 +40/–30%	7020	B65843P0000Y038

Coil former, squared pins

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: H ≙ max. operating temperature 180 °C), color code black
Sumikon PM 9630® [E41429 (M)], SUMITOMO BAKELITE CO LTD
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”

Sections	A_N mm²	l_N mm	A_R value μΩ	Terminals	Ordering code
1	14.3	23.8	57.1	10	B65844W1010D001

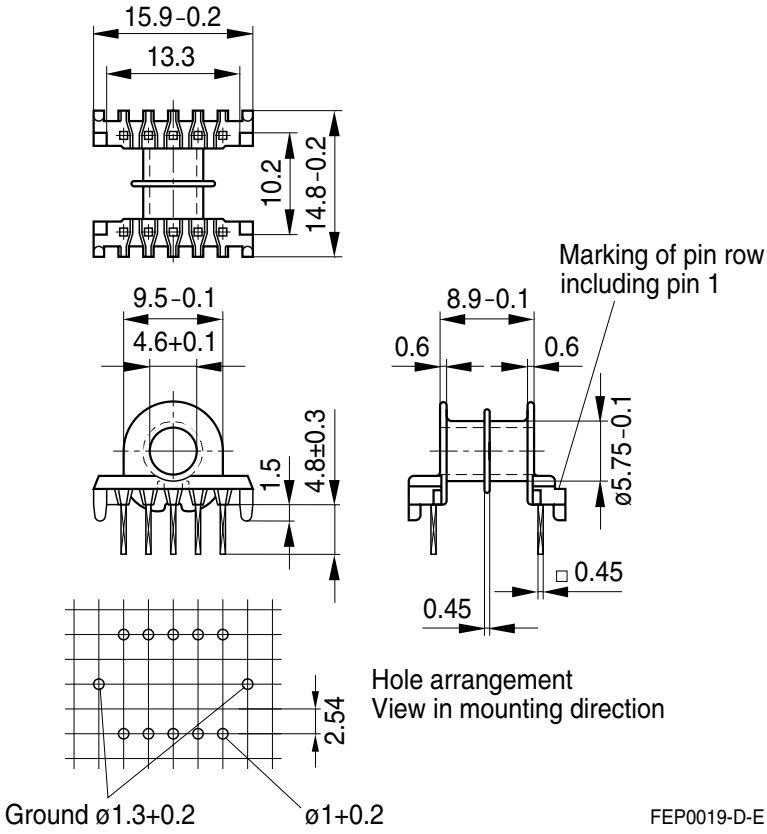


Coil former with closed center flange for high-voltage applications

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: H ≙ max. operating temperature 180 °C), color code black
Sumikon PM 9630® [E41429 (M)], SUMITOMO BAKELITE CO LTD
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.

Sections	A_N mm²	l_N mm	A_R value μΩ	Terminals	Ordering code
2	13.9	23.8	58.9	10	B65844X1010D002



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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