



Ferrites and accessories

E 8.8 **Core and accessories**

Series/Type: B66302
Date: September 2006/ May 2007

- To IEC 61246
- For miniature transformers, e.g. DC/DC converters for surface mounting
- Available with SMD coil former
- Delivery mode: single units

Magnetic characteristics (per set)

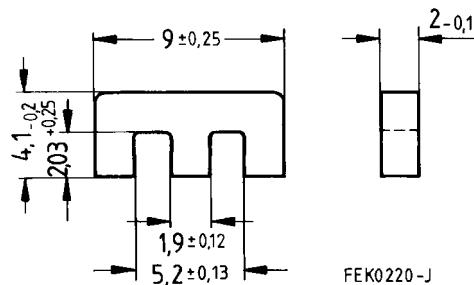
$$\Sigma I/A = 3.1 \text{ mm}^{-1}$$

$$l_e = 15.5 \text{ mm}$$

$$A_e = 5 \text{ mm}^2$$

$$A_{\min} = 3.6 \text{ mm}^2$$

$$V_e = 78 \text{ mm}^3$$

Approx. weight 0.50 g/set

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code
N30	1000 +30/-20%	2460		B66302G0000X130
T38	2100 +40/-30%	5170		B66302G0000X138
N87	550 +30/-20%	1350	< 0.035 (200 mT, 100 kHz, 100 °C)	B66302G0000X187


SMD coil former with gullwing terminals

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:

$F \leq$ max. operating temperature 155 °C), color code black

Vectra C 130 [E83005 (M)], TICONA

Solderability: to IEC 60068-2-58, test Td, method 6 (Group 3): 245 °C, 3 s

Resistance to soldering heat: to IEC 60068-2-58, test Td, method 6 (Group 3): 255 °C, 10 s

permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

Winding: see "Processing notes", page 166

Plastic cover cap

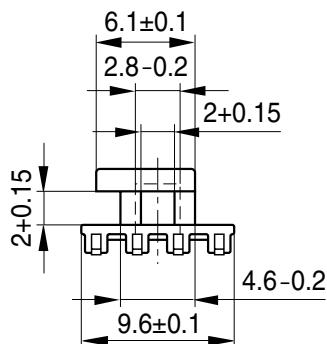
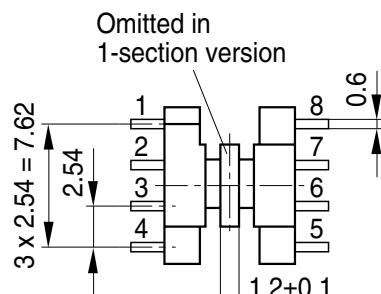
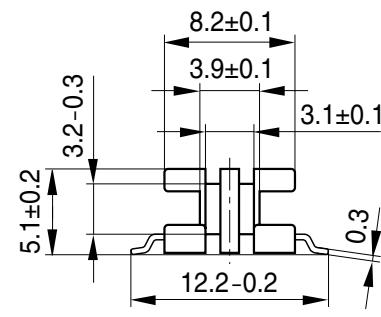
Used to protect the transformer against external influences, for stamping and for improved processing on assembly machines

Material: GFR polyamide (UL 94 V-0, insulation class to IEC 60085:

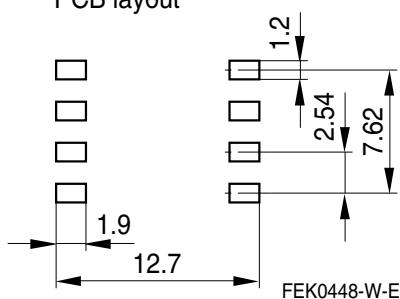
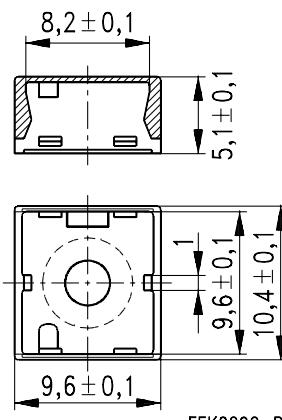
$F \leq$ max. operating temperature 155 °C), color code white

Stanyl TW250F6 [E47960 (M)], DSM ENGINEERING PLASTICS B V

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Terminals	Ordering code
1	2.7	14.9	190	8	B66302D1008T001
2	1.7	14.9	302	8	B66302D1008T002
Plastic cover cap					B66302A2000X000

Coil former


Recommended
PCB layout


Plastic cover cap


Note:
Overlap of gate mark
0.2 max.

Ferrites and accessories

Cautions and warnings

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 destroyed.
- To strong winding forces may blast the flanges or squeeze the tube that the cores can no more be mounted.
- To long soldering time at high temperature ($>300\text{ }^{\circ}\text{C}$) 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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