

# Ferrites and Accessories PQ Cores

Series/Type: PQ 20/16

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product		Deadline Last Orders	Last Shipments
B65876E0014D001		2010-12-10	2011-03-31	2011-06-30

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.



PQ 20/16 B65875B

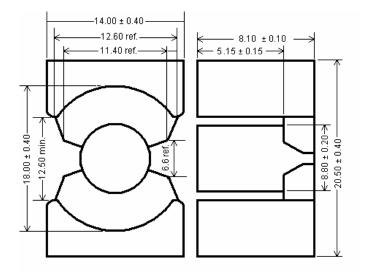
## Cores

To IEC 62317-13Delivery mode: sets

## Magnetic characteristics (per set)

 $\begin{array}{lllll} \Sigma I/A & = 0.579 & mm^{-1} \\ I_e & = 37.0 & mm \\ A_e & = 64.0 & mm^2 \\ A_{min} & = 57.6 & mm^2 \\ V_e & = 2367 & mm^3 \end{array}$ 

Approx. weight: 13.0 g/set



Dimensions (mm)

## **Ungapped**

Material	A <sub>L</sub> value <sup>1)</sup> nH	$\mu_{\text{e}}$	P <sub>V</sub> W/Set	Ordering code
N87	3100 +30/-20%	1430	< 1.40 (100 kHz, 200 mT, 100 °C)	B65875B0000R087
N97	3200 +30/-20%	1475	< 1.25 (100 kHz, 200 mT, 100 °C)	B65875B0000R097
N95	3750 +30/-20%	1730	< 1.35 (100 kHz, 200 mT, 25 °C-100 °C)	B65875B0000R095
			< 1.62 (100 kHz, 200 mT, 120 °C)	
N92	2400 +30/-20%	1105	< 1.45 (100 kHz, 200 mT, 100 °C)	B65875B0000R092
N49	2400 +30/-20%	1105	< 0.75 (500 kHz, 50 mT, 100 °C)	B65875B0000R049

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<sup>1)</sup> Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature. A<sub>L</sub> value is measured acc. to IEC62044-2. An appropriate wringing of cores with polished surface is used to improve reproducibility of the measurement. (It is recommended to rub the mating surfaces themselves six times in a circular or elliptic arc that matches the core profile before measuring A<sub>L</sub> value).



PQ 20/16
Coil former B65876E

**Preliminary data** 

## **Coil former**

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

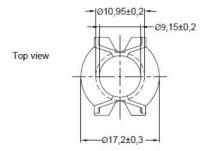
H=max.operating temperature 180°C), color code black

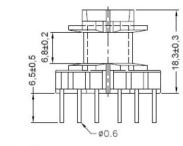
Sumikon PM9820 [E41429(M)], SUMITOMO BAKELITE CO LTD

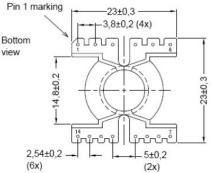
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235°C, 2 s

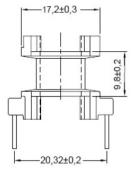
Resistance to soldering heat: to IEC 68-2-20, test Tb, method 1B: 350°C, 3,5 s

Sections	A <sub>N</sub> mm²	I <sub>N</sub> mm	$A_R$ value $\mu\Omega$	Terminals	Ordering code
1	21	44	72	14	B65876E0014D001









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## **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<sub>L</sub> 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 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 oxide 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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