September 19, 2008

Correction
Product innovation
PQ cores and accessories

EPCOS is extending its range of ferrite cores by PQ cores and coil formers with sizes PQ16 to PQ35 in order to offer its customers the full range of ferrite cores. Details of the available cores and accessories may be taken from the table below and the enclosed data sheets.

This UPtoDATE replaces the UPtoDATE released on April 25, 2008. The the ordering codes for the new PQ coil formers (PQ20/16, PQ20/20, PQ26/20, PQ26/25, PQ32/20 und PQ32/30) had to be changed for technical reasons.

Type	Ordering code	
	Core	**Coil former**
PQ16/11.6	B65885A0000R087	
	B65885A0000R097	
	B65885A0000R049	
	B65885A0000R095	
	B65885A0000R092	
PQ20/16	B65875B0000R087	B65876E0014D001
	B65875B0000R097	
	B65875B0000R049	
	B65875B0000R092	
	B65875B0000R095	
PQ20/20	B65875A0000R087	B65876E1014D001
	B65875A0000R097	
	B65875A0000R049	
	B65875A0000R095	
PQ26/20	B65877B0000R087	B65878E0012D001
	B65877B0000R097	
	B65877B0000R049	
	B65877B0000R095	
PQ26/25	B65877A0000R087	B65878E1012D001
	B65877A0000R097	
	B65877A0000R049	
	B65877A0000R095	
PQ32/20	B65879A0000R087	B65880E0012D001
	B65879A0000R097	
	B65879A0000R049	
	B65879A0000R095	

PQ32/30	B65879B0000R087	B65880E2012D001
	B65879B0000R097	
	B65879B0000R049	
	B65879B0000R095	
PQ35/35	B65881A0000R087	B65882E0004T001
	B65881A0000R097	
	B65881A0000R092	
	B65881A0000R049	
	B65881A0000R095	

Product advantages
The PQ cores were developed for use in switch mode power supplies. They can be used for AC/DC and DC/DC conversion. Their insertion heights can be adapted while keeping the same footprint. They may also be used for planar transformers. The main advantage for AC/DC conversion compared to the conventional ETD/ER/E type cores is its stable round leg and wider outer surface. The round leg improves copper utilization, thus reducing copper costs in manufacturing. The wider surface area facilitates easy heat dissipation and the wider side spaces allow easy connection to the coil similarly to the conventional ER/ETD/E type cores.

The shapes are optimized to allow the completed transformers to handle the same power as those built from E cores, while featuring a more compact size, lower weight and smaller mounting area.

Samples for all core sizes are available and may be ordered via the standard sampling procedure.

Production locations: India (cores) and China (coil former)

Enclosure: Data sheets of the series

- B65875A*
- B65875B*
- B65877A*
- B65877B*
- B65879A*
- B65879B*
- B65881A*
- B65885A*

Contact: Ralf Schiffel, IN TCF FER PM, Mch M/An
Sadhab Ganda, KA IN TCF FER D, Kalyani

Customers should address inquiries straight to their EPCOS sales contacts.

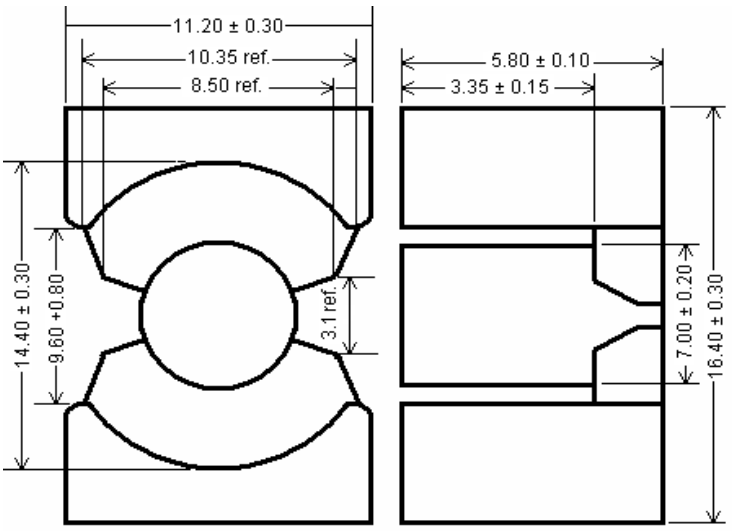
Ferrites

PQ cores
PQ 16/11.6

Series/Type: **B65885A**

Date: 2008-04-14
Version: 1

PQ 16/11.6



To IEC 62317-13

Delivery mode: sets

Magnetic characteristics (per set)

$\Sigma l/A$	= 0.641	mm^{-1}
l_e	= 27.00	mm
A_e	= 42.10	mm^2
A_{min}	= 38.50	mm^2
V_e	= 1136	mm^3

Approx. weight : 6.0 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	2350 +30/-20%	1200	< 0.70 (100 kHz, 200 mT, 100 °C)	B65885A0000R087
N97	2450 +30/-20%	1250	< 0.60 (100 kHz, 200 mT, 100 °C)	B65885A0000R097
N95	2750 +30/-20%	1400	< 0.65 (100 kHz, 200 mT, 25 °C-100 °C) < 0.80 (100 kHz, 200 mT, 120 °C)	B65885A0000R095
N92	1900 +30/-20%	970	< 0.70 (100 kHz, 200 mT, 100 °C)	B65885A0000R092
N49	1900 +30/-20%	970	< 0.40 (500 kHz, 50 mT, 100 °C)	B65885A0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

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 AL 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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3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.
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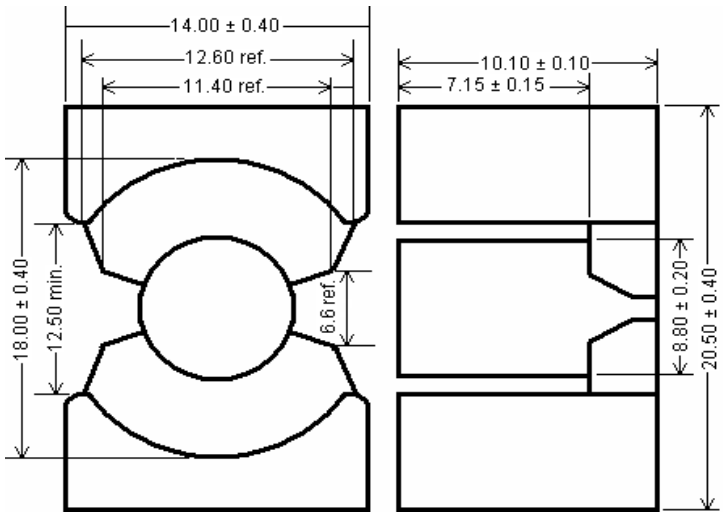
Ferrites and accessories

PQ 20/20
Cores and coil former

Series/Type: **B65875A, B65876E**

Date: 2008-04-14
Version: 1



To IEC 62317-13

Delivery mode: sets

Magnetic characteristics (per set)

$\Sigma l/A$	= 0.718	mm^{-1}
l_e	= 45.20	mm
A_e	= 62.90	mm^2
A_{min}	= 54.40	mm^2
V_e	= 2843	mm^3

Approx. weight : 15.6 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	2650 +30/-20%	1515	< 1.65 (100 kHz, 200 mT, 100 °C)	B65875A0000R087
N97	2750 +30/-20%	1565	< 1.50 (100 kHz, 200 mT, 100 °C)	B65875A0000R097
N95	3300 +30/-20%	1860	< 1.60 (100 kHz, 200 mT, 25 °C-100 °C) < 1.92 (100 kHz, 200 mT, 120 °C)	B65875A0000R095
N49	2000 +30/-20%	1150	< 0.90 (500 kHz, 50 mT, 100 °C)	B65875A0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

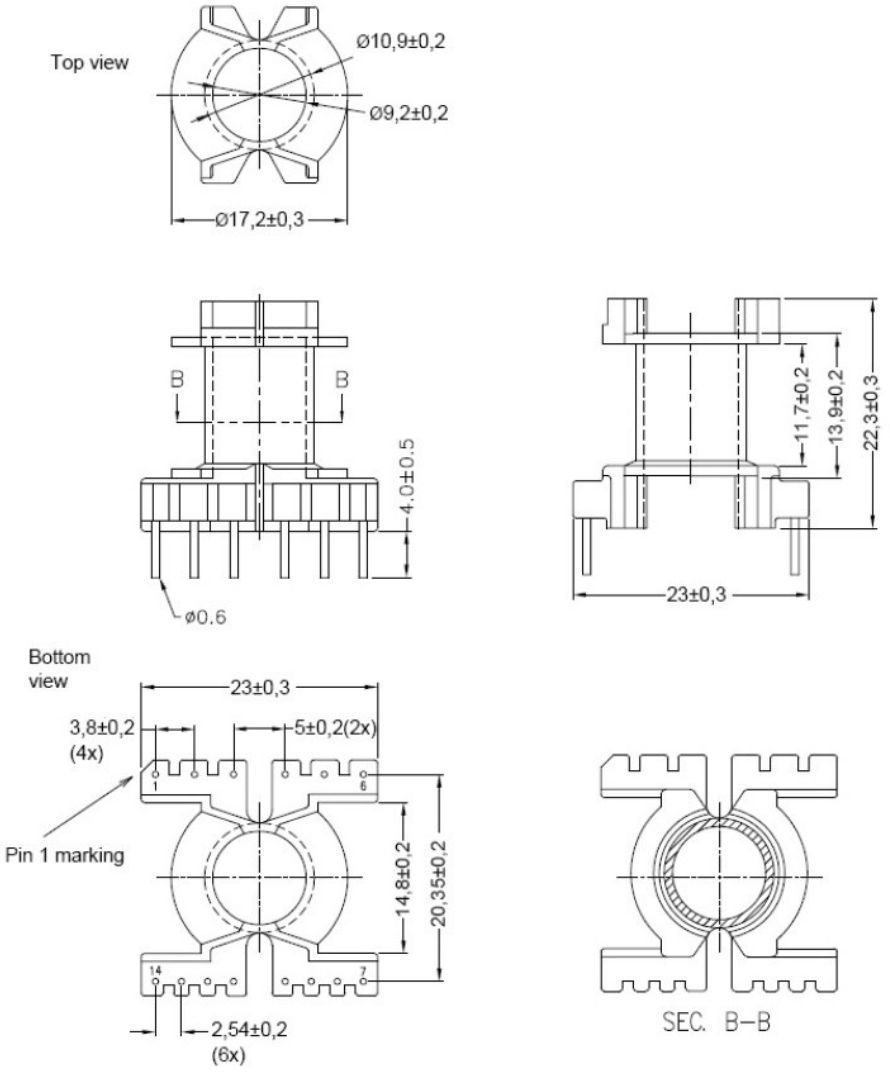
Coil former

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_N mm²	l_N mm	A_R value µΩ	Terminals	Ordering code
1	35	44	43	14	B65876E1014D001



Cautions and warnings

Mechanical stress and mounting

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Effects of core combination on AL 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.

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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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Ferrites and accessories

PQ 20/16
Cores and coil former

Series/Type: **B65875B, B65876E**

Date: 2008-04-1414
Version: 1

To IEC 62317-13

Delivery mode: sets

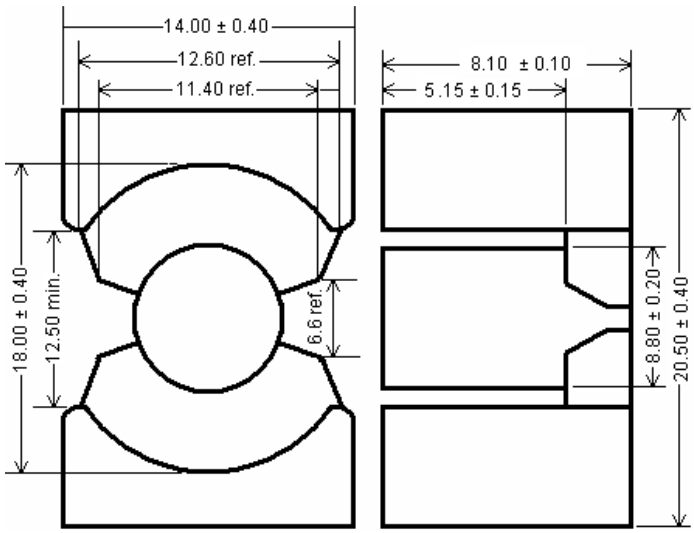
Magnetic characteristics (per set)

$\Sigma l/A$	= 0.579	mm^{-1}
l_e	= 37.0	mm
A_e	= 64.0	mm^2
A_{min}	= 57.6	mm^2
V_e	= 2367	mm^3

Approx. weight : 13.0 g/set

Dimensions (mm**)**

Ungapped



Material	A_L value[1)] nH	μ_e	P_V 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) < 1.62 (100 kHz, 200 mT, 120 °C)	B65875B0000R095
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

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

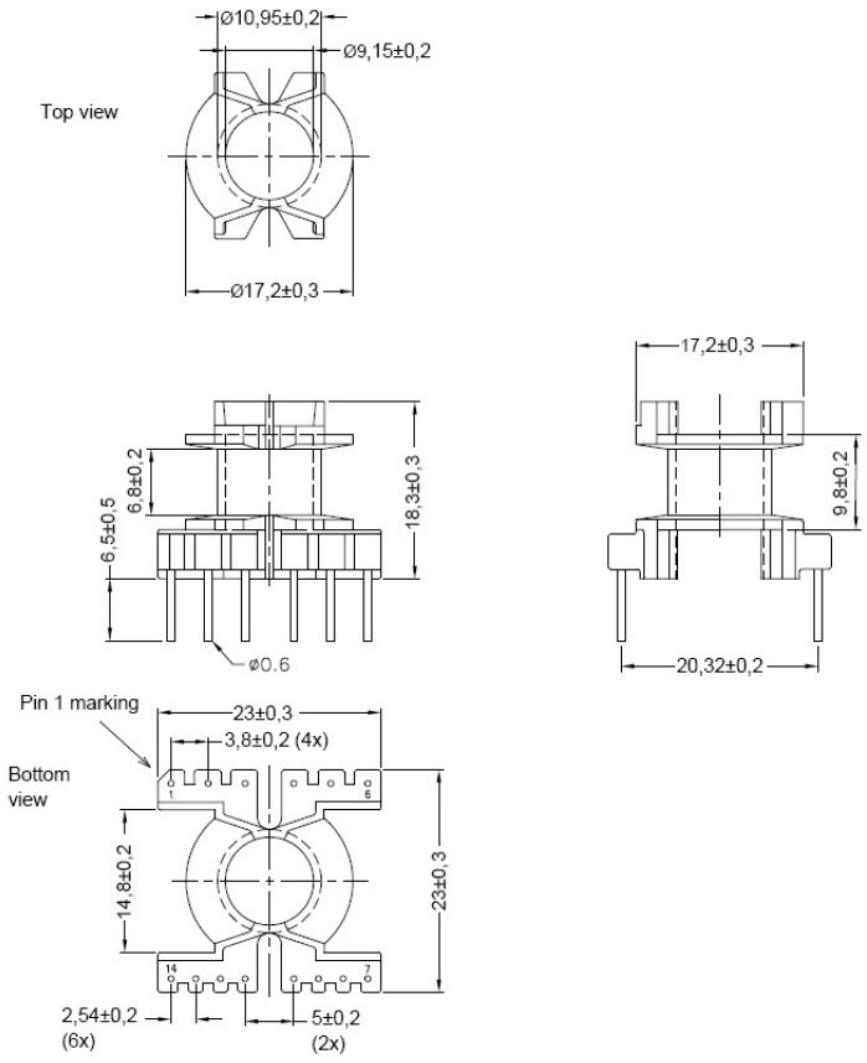
Coil former

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_N mm²	l_N mm	A_R value µΩ	Terminals	Ordering code
1	21	44	72	14	B65876E0014D001



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Effects of core combination on AL value

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Heating up

Ferrites can run hot during operation at higher flux densities and higher frequencies.

NiZn-materials

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Processing notes

– The start of the winding process should be soft. Else the flanges may be destroyed.
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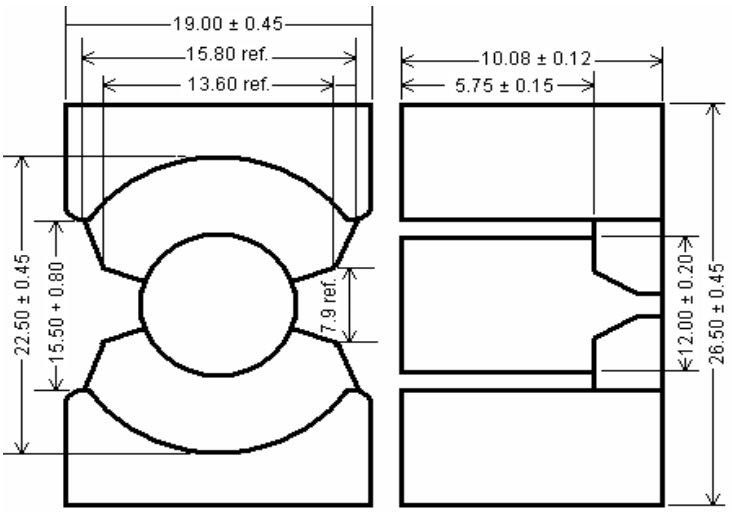
Ferrites

PQ 26/20
Cores and coil formers

Series/Type: **B65877B, B65878E**

Date: 2008-04-14
Version: 1

PQ 26/20



To IEC 62317-13

Delivery mode: sets

Magnetic characteristics (per set)

$\Sigma l/A$	= 0.363	mm^{-1}
l_e	= 44.40	mm
A_e	= 122.3	mm^2
A_{min}	= 108.8	mm^2
V_e	= 5435	mm^3

Approx. weight : 31 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	5000 +30/-20%	1440	< 3.20 (100 kHz, 200 mT, 100 °C)	B65877B0000R087
N97	5150 +30/-20%	1480	< 2.70 (100 kHz, 200 mT, 100 °C)	B65877B0000R097
N95	6300 +30/-20%	1820	< 3.00 (100 kHz, 200 mT, 25 °C-100 °C) < 3.60 (100 kHz, 200 mT, 120 °C)	B65877B0000R095
N49	3850 +30/-20%	1110	< 1.90 (500 kHz, 50 mT, 100 °C)	B65877B0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

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_N mm²	l_N mm	A_R value μΩ	Terminals	Ordering code
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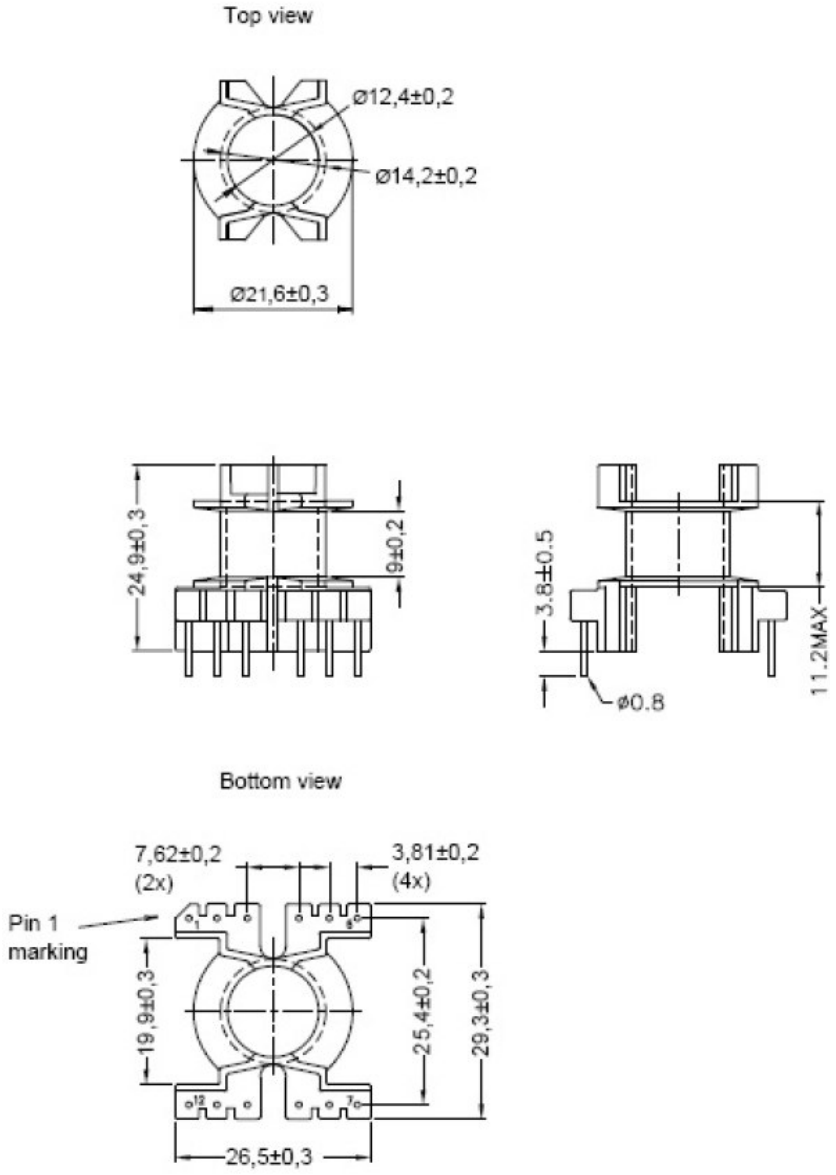

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For detailed information see Data Book 2007, chapter “General – Definitions, 8.1”.

Effects of core combination on AL 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”.
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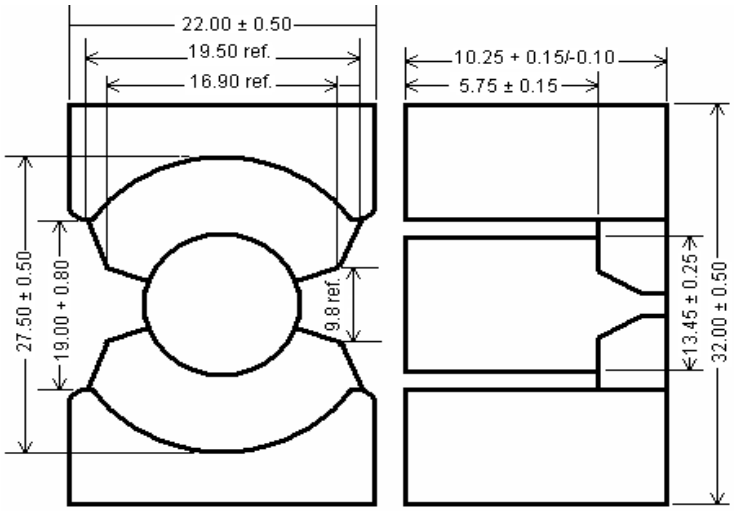
Ferrites

PQ 32/20
Cores and accessories

Series/Type:	**B65879A, B65880E**
Date:	2008-04-14
Version:	1

To IEC 62317-13

Delivery mode: sets



Magnetic characteristics (per set)

$\Sigma l/A$	= 0.314	mm^{-1}
l_e	= 48.40	mm
A_e	= 154.2	mm^2
A_{min}	= 127.5	mm^2
V_e	= 7460	mm^3

Approx. weight : 41 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	6300 +30/-20%	1580	< 5.50 (100 kHz, 200 mT, 100 °C)	B65879A0000R087
N97	6500 +30/-20%	1625	< 4.60 (100 kHz, 200 mT, 100 °C)	B65879A0000R097
N95	7600 +30/-20%	1895	< 4.70 (100 kHz, 200 mT, 25 °C-100 °C) < 5.64 (100 kHz, 200 mT, 120 °C)	B65879A0000R095
N49	4600 +30/-20%	1150	< 2.65 (500 kHz, 50 mT, 100 °C)	B65879A0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

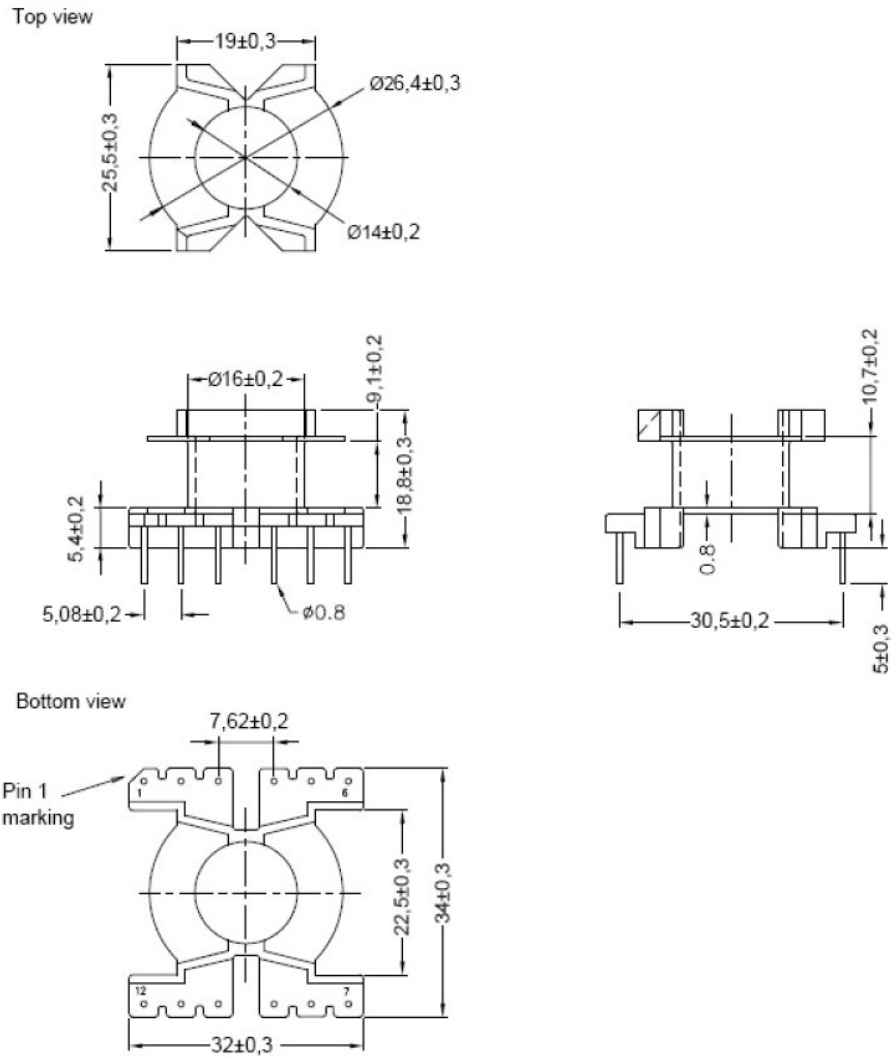
Coil former

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_N mm²	l_N mm	A_R value µΩ	Terminals	Ordering code
1	47	66	48	12	B65880E0012D001



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 AL 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”.
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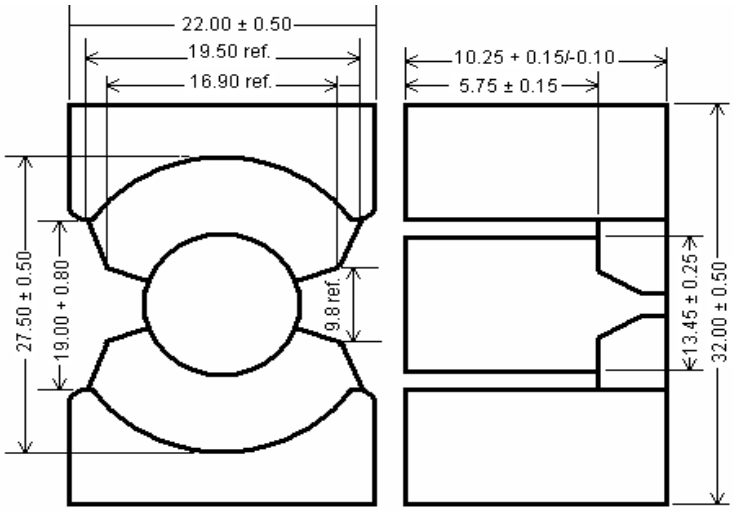
Ferrites

PQ 32/20
Cores and accessories

Series/Type:	**B65879A, B65880E**
Date:	2008-04-14
Version:	1

To IEC 62317-13

Delivery mode: sets



Magnetic characteristics (per set)

$\Sigma l/A$	= 0.314	mm^{-1}
l_e	= 48.40	mm
A_e	= 154.2	mm^2
A_{min}	= 127.5	mm^2
V_e	= 7460	mm^3

Approx. weight : 41 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	6300 +30/-20%	1580	< 5.50 (100 kHz, 200 mT, 100 °C)	B65879A0000R087
N97	6500 +30/-20%	1625	< 4.60 (100 kHz, 200 mT, 100 °C)	B65879A0000R097
N95	7600 +30/-20%	1895	< 4.70 (100 kHz, 200 mT, 25 °C-100 °C) < 5.64 (100 kHz, 200 mT, 120 °C)	B65879A0000R095
N49	4600 +30/-20%	1150	< 2.65 (500 kHz, 50 mT, 100 °C)	B65879A0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

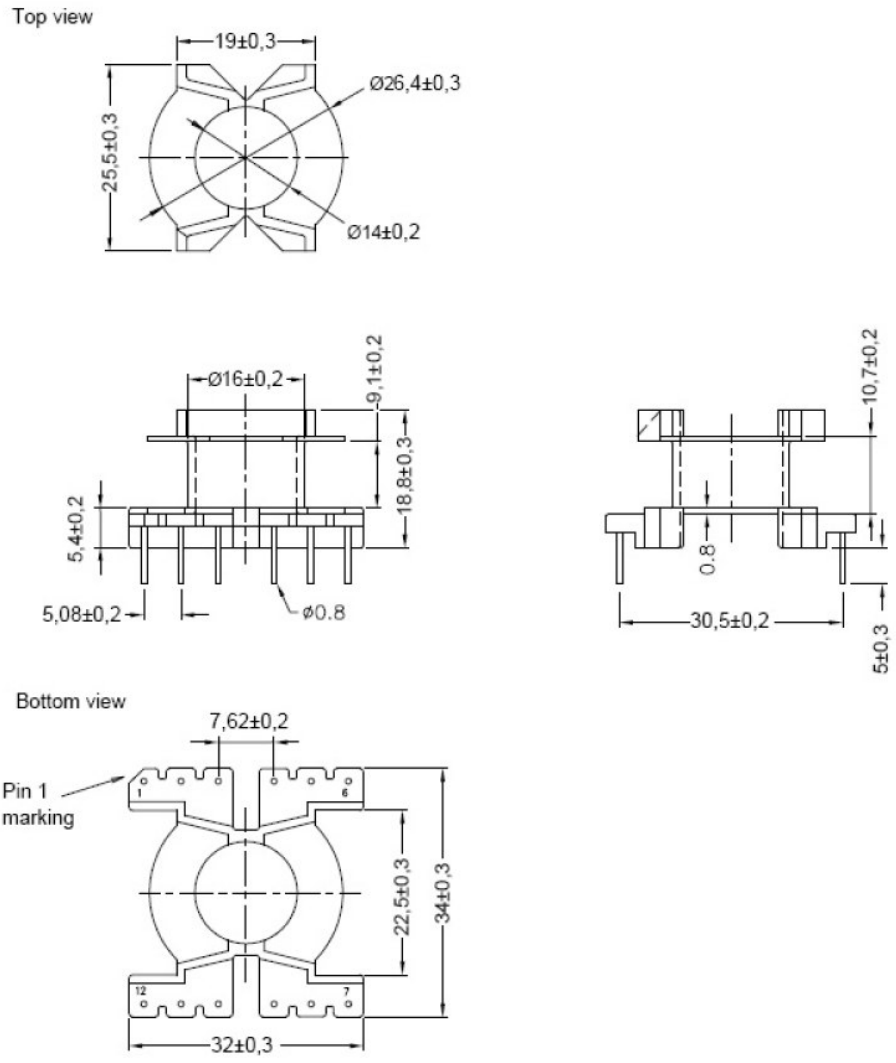
Coil former

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_N mm²	l_N mm	A_R value µΩ	Terminals	Ordering code
1	47	66	48	12	B65880E0012D001



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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”.
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Ferrites

PQ 32/30
Cores and accessories

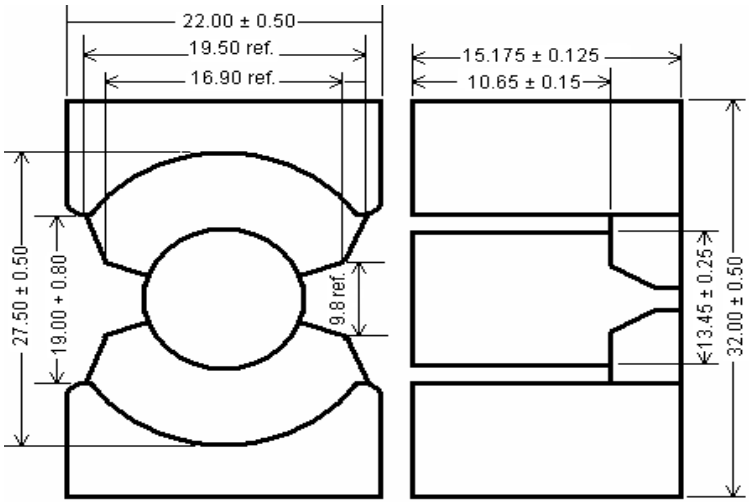
Series/Type: **B65879B, B65880E**

Date: 2008-04-14
Version: 1

PQ 32/30

To IEC 62317-13

Delivery mode: sets



Magnetic characteristics (per set)

$\Sigma l/A$ = 0.441 mm^{-1}
l_e = 67.80 mm
A_e = 153.8 mm^2
A_{min} = 127.5 mm^2
V_e = 10440 mm^3

Approx. weight : 57.4 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	4800 +30/-20%	1700	< 7.00 (100 kHz, 200 mT, 100 °C)	B65879B0000R087
N97	5000 +30/-20%	1760	< 5.80 (100 kHz, 200 mT, 100 °C)	B65879B0000R097
N95	6100 +30/-20%	2140	< 6.30 (100 kHz, 200 mT, 25 °C-100 °C) < 7.56 (100 kHz, 200 mT, 120 °C)	B65879B0000R095
N49	3450 +30/-20%	1210	< 3.65 (500 kHz, 50 mT, 100 °C)	B65879B0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

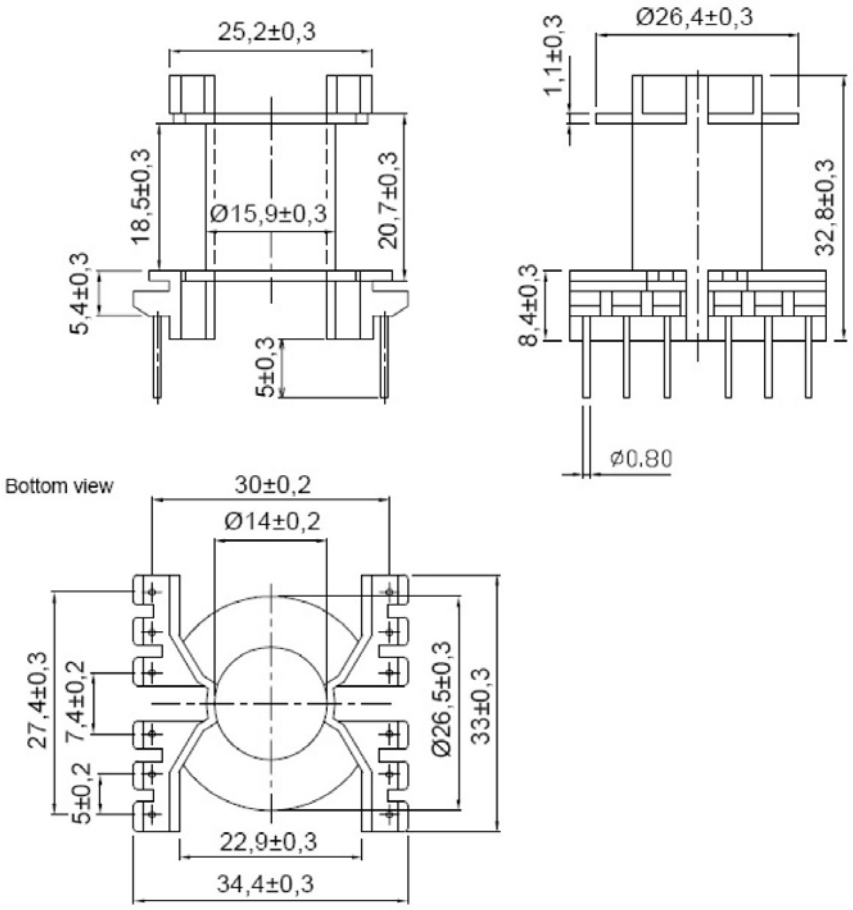
Coil former

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_N mm²	l_N mm	A_R value μΩ	Terminals	Ordering code
1	104	62	21	12	B65880E2012D001



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Heating up

Ferrites can run hot during operation at higher flux densities and higher frequencies.

NiZn-materials

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Processing notes

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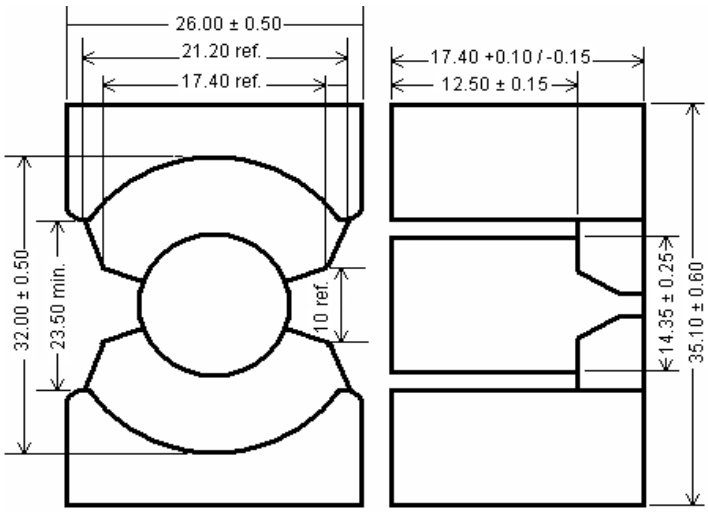
Ferrites

PQ 35/35
Cores and accessories

Series/Type: **B65881A, B65882E**

Date: 2008-04-14
Version: 1

PQ 35/35



To IEC 62317-13

Delivery mode: sets

Magnetic characteristics (per set)

$\Sigma l/A$ = 0.467 mm^{-1}
l_e = 79.20 mm
A_e = 169.7 mm^2
A_{min} = 146.5 mm^2
V_e = 13440 mm^3

Approx. weight : 74 g/set

Dimensions (mm)

Ungapped

Material	A_L value[1)] nH	μ_e	P_V W/Set	Ordering code
N87	4500 +30/-20%	1670	< 8.75 (100 kHz, 200 mT, 100 °C)	B65881A0000R087
N97	4700 +30/-20%	1750	< 7.10 (100 kHz, 200 mT, 100 °C)	B65881A0000R097
N95	5700 +30/-20%	2120	< 7.92 (100 kHz, 200 mT, 25 °C-100 °C) < 9.50 (100 kHz, 200 mT, 120 °C)	B65881A0000R095
N92	3300 +30/-20%	1225	< 10.5 (100 kHz, 200 mT, 100 °C)	B65881A0000R092
N49	3300 +30/-20%	1225	< 3.75 (500 kHz, 50 mT, 100 °C)	B65881A0000R049

1) Measurement parameter: 10 kHz, 0.25 mT, 100 turns, room temperature.
A_L 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_L value).

Coil former

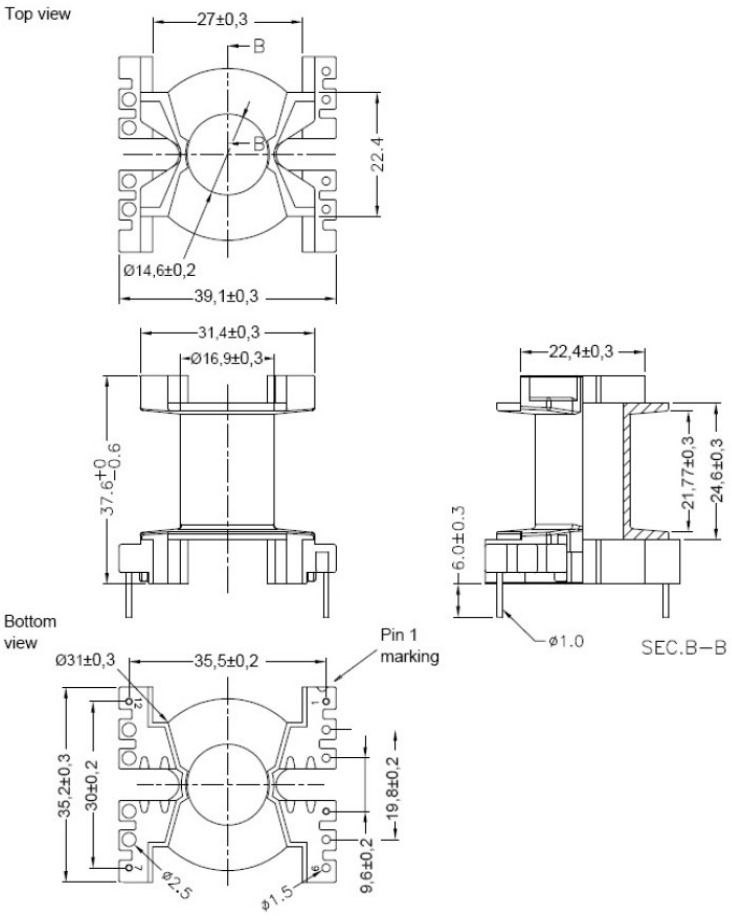
Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F = max. operating temperature 155°C), color code nature

Rynite FR 530 [E41938 (M)], E I DUPONT DE NEMOURS & CO INC

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

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350°C, 3.5s

Sections	A_N mm²	l_N mm	A_R value µΩ	Terminals	Ordering code
1	158	76	16,5	4	B65882E0004T001



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 AL 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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