Ferrites and accessories

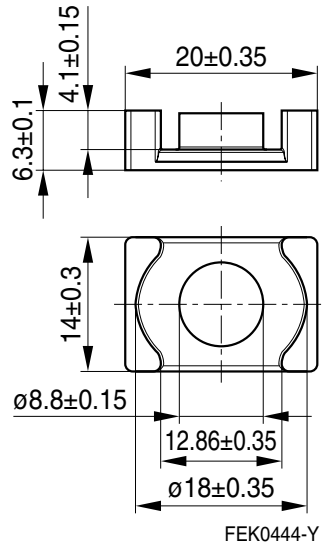
EEQ 20, EIQ 20
Core set

Series/Type: **B66483G, B66483P**
Date: September 2006

Core set EEQ 20
Combination: EQ 20/6 with EQ 20/6

- To IEC 62317-9
- Optimized cross section
- Small overall footprint (core and winding)
- Less EMI
- Minimized winding length
- Delivery mode: single units

EQ 20/6



Magnetic characteristics (per set)

$\Sigma l/A$ = 0.56 mm^{-1}
l_e = 33.2 mm
A_e = 59.0 mm^2
A_{min} = 55.0 mm^2
V_e = 1960 mm^3

Approx. weight: 11 g/set

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code
N49	2400 ±25%	1070	< 0.51 (50 mT, 500 kHz, 100 °C)	B66483G0000X149
N92	2450 ±25%	1090	< 1.80 (200 mT, 100 kHz, 100 °C)	B66483G0000X192
N87	3100 ±25%	1400	< 1.10 (200 mT, 100 kHz, 100 °C)	B66483G0000X187
N97	3200 ±25%	1430	< 1.00 (200 mT, 100 kHz, 100 °C)	B66483G0000X197

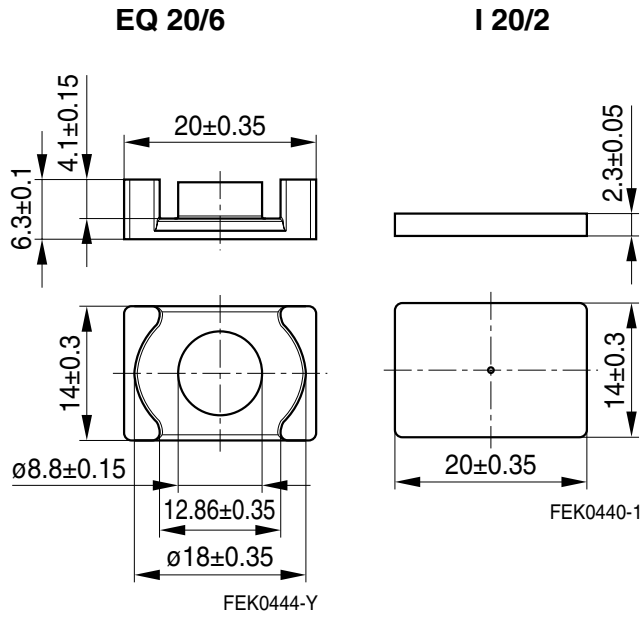
Core set EIQ 20
Combination: EQ 20/6 with I 20/2

- To IEC 62317-9
- Optimized cross section
- Small overall footprint (core and winding)
- Less EMI
- Minimized winding length
- Delivery mode: single units

Magnetic characteristics (per set)

$\Sigma l/A$ = 0.42 mm^{-1}
l_e = 25.1 mm
A_e = 59.8 mm^2
A_{min} = 55.0 mm^2
V_e = 1550 mm^3

Approx. weight: 8.5 g/set



Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code
N92	2950 ±25%	985	< 1.50 (200 mT, 100 kHz, 100 °C)	B66483G0000X192 (EQ core) B66483P0000X192 (I core)
N49	3000 ±25%	1000	< 0.40 (50 mT, 500 kHz, 100 °C)	B66483G0000X149 (EQ core) B66483P0000X149 (I core)
N87	3680 ±25%	1230	< 0.85 (200 mT, 100 kHz, 100 °C)	B66483G0000X187 (EQ core) B66483P0000X187 (I core)
N97	3770 ±25%	1260	< 0.81 (200 mT, 100 kHz, 100 °C)	B66483G0000X197 (EQ core) B66483P0000X197 (I core)

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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