



Ferrites and accessories

Toroids
R 102, R 140

Series/Type: **B64290**
Date: September 2006

R 102 × 65.8 × 15.0
B64290L0084
R 140 × 103 × 25.0
B64290A0705

■ Epoxy coating

R 102 × 65.8 × 15.0 (mm)
R 4.016 × 2.591 × 0.591 (inch)

Dimensions

d_a (mm)	d_i (mm)	Height (mm)	d_a (inch)	d_i (inch)	Height (inch)	
102.0 ± 2.0	65.8 ± 1.3	15.0 ± 0.5	4.016 ± 0.079	2.591 ± 0.051	0.591 ± 0.020	uncoated ¹⁾
104.8 max.	63.7 min.	16.3 max.	4.126 max.	2.508 min.	0.642 max.	coated

Characteristics and ordering codes

Material	A_L value nH	μ_i (approx.)	Ordering code	Magnetic characteristics				Approx. weight g
				$\Sigma I/A$ mm^{-1}	I_e mm	A_e mm^2	V_e mm^3	
N87	$2880 \pm 25\%$	2200	B64290L0084X087	0.96	255.3	267.2	68220	330
N30	$5500 \pm 25\%$	4200	B64290L0084X830					
T65	$6500 \pm 30\%$	5000	B64290L0084X065					

■ Without coating

R 140 × 103 × 25.0 (mm)
R 5.512 × 4.055 × 0.984 (inch)

Dimensions

d_a (mm)	d_i (mm)	Height (mm)	d_a (inch)	d_i (inch)	Height (inch)	
140.0 ± 3.0	103 ± 2.0	25.0 ± 1.0	5.512 ± 0.118	4.055 ± 0.079	0.984 ± 0.039	uncoated
143.8 max.	100.2 min.	26.8 max.	5.661 max.	3.945 min.	1.055 max.	coated ¹⁾

Characteristics and ordering codes

Material	A_L value nH	μ_i (approx.)	Ordering code	Magnetic characteristics				Approx. weight g
				$\Sigma I/A$ mm^{-1}	I_e mm	A_e mm^2	V_e mm^3	
N30	$6200 \pm 25\%$	4000	B64290A0705X830	0.82	375.8	458.9	172440	860

1) On request

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 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.

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
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