



Ferrites and accessories

Toroids
R 12.5, R 12.7

Series/Type: B64290
Date: September 2006

R 12.5 × 7.50 × 5.00
B64290L0044
R 12.7 × 7.90 × 6.35
B64290L0742

■ Epoxy coating

R 12.5 × 7.50 × 5.00 (mm)
R 0.492 × 0.295 × 0.197 (inch)
Dimensions

d_a (mm)	d_i (mm)	Height (mm)	d_a (inch)	d_i (inch)	Height (inch)	
12.5 ±0.3	7.5 ±0.2	5.00 ±0.15	0.492 ±0.012	0.295 ±0.008	0.197 ±0.005	uncoated ¹⁾
13.6 max.	6.5 min.	5.95 max.	0.535 max.	0.256 min.	0.234 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	l_e mm	A_e mm ²	V_e mm ³	
N87	1120 ±25%	2200	B64290L0044X087	2.46	30.09	12.23	368	1.8
N30	2200 ±25%	4300	B64290L0044X830					
T65	2400 ±30%	4700	B64290L0044X065					
T35	3060 ±25%	6000	B64290L0044X035					
T37	3320 ±25%	6500	B64290L0044X037					
T38	5110 ±30%	10000	B64290L0044X038					

■ Epoxy coating

R 12.7 × 7.90 × 6.35 (mm)
R 0.500 × 0.311 × 0.250 (inch)
Dimensions

d_a (mm)	d_i (mm)	Height (mm)	d_a (inch)	d_i (inch)	Height (inch)	
12.7 ±0.3	7.9 ±0.25	6.35 ±0.2	0.500 ±0.012	0.311 ±0.010	0.250 ±0.008	uncoated ¹⁾
13.6 max.	7.15 min.	7.15 max.	0.535 max.	0.281 min.	0.281 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	l_e mm	A_e mm ²	V_e mm ³	
N87	1330 ±25%	2200	B64290L0742X087	2.08	31.17	14.96	466	2.4
N30	2600 ±25%	4300	B64290L0742X830					
T65	2850 ±30%	4700	B64290L0742X065					
T35	3620 ±25%	6000	B64290L0742X035					
T37	3920 ±25%	6500	B64290L0742X037					
T38	6030 ±30%	10000	B64290L0742X038					

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.

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