



## **Ferrites and accessories**

Toroids  
R 18.4, R 20.0

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

**R 18.4 × 5.90 × 5.90**
**B64290L0697**
**R 20.0 × 10.0 × 7.00**
**B64290L0632**

■ Epoxy coating

**R 18.4 × 5.90 × 5.90 (mm)**
**R 0.724 × 0.232 × 0.232 (inch)**

### Dimensions

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
18.4 ±0.4	5.9 ±0.3	5.90 ±0.2	0.724 ±0.016	0.232 ±0.012	0.232 ±0.008	uncoated <sup>1)</sup>
19.5 max.	4.8 min.	6.7 max.	0.768 max.	0.189 min.	0.264 max.	coated

### Characteristics and ordering codes

Material	$A_L$ value nH	$\mu_i$ (approx.)	Ordering code	Magnetic characteristics				Approx. weight g
				$\Sigma I/A$ mm <sup>-1</sup>	$l_e$ mm	$A_e$ mm <sup>2</sup>	$V_e$ mm <sup>3</sup>	
N87	2950 ±25%	2200	B64290L0697X087	0.94	31.03	33.14	1029	6.9
N30	5770 ±25%	4300	B64290L0697X830					
T65	6680 ±30%	5000	B64290L0697X065					
T35	8020 ±25%	6000	B64290L0697X035					
T37	8690 ±25%	6500	B64290L0697X037					
T38	13400 ±30%	10000	B64290L0697X038					

■ Epoxy coating

**R 20.0 × 10.0 × 7.00 (mm)**
**R 0.787 × 0.394 × 0.276 (inch)**

### Dimensions

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
20.0 ±0.4	10.0 ±0.25	7.00 ±0.3	0.787 ±0.016	0.394 ±0.010	0.276 ±0.012	uncoated <sup>1)</sup>
21.2 max.	8.95 min.	8.1 max.	0.835 max.	0.352 min.	0.319 max.	coated

### Characteristics and ordering codes

Material	$A_L$ value nH	$\mu_i$ (approx.)	Ordering code	Magnetic characteristics				Approx. weight g
				$\Sigma I/A$ mm <sup>-1</sup>	$l_e$ mm	$A_e$ mm <sup>2</sup>	$V_e$ mm <sup>3</sup>	
N87	2130 ±25%	2200	B64290L0632X087	1.30	43.55	33.63	1465	7.6
N30	4160 ±25%	4300	B64290L0632X830					
T35	5000 ±25%	5100	B64290L0632X035					
T65	5050 ±30%	5200	B64290L0632X065					
T37	6280 ±25%	6500	B64290L0632X037					
T38	9740 ±30%	10000	B64290L0632X038					

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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