



## **Ferrites and accessories**

Toroids  
R 9.53, R 10.0

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

**R 9.53 × 4.75 × 3.17**
**B64290L0062**
**R 10.0 × 6.00 × 4.00**
**B64290L0038**

■ Epoxy coating

**R 9.53 × 4.75 × 3.17 (mm)**
**R 0.375 × 0.187 × 0.125 (inch)**
**Dimensions**

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
9.53 ±0.19	4.75 ±0.12	3.17 ±0.15	0.375 ±0.007	0.187 ±0.005	0.125 ±0.006	uncoated <sup>1)</sup>
10.5 max.	3.8 min.	4.1 max.	0.413 max.	0.130 min.	0.161 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	970 ±25%	2200	B64290L0062X087	2.85	20.72	7.28	151	0.8
N30	1900 ±25%	4300	B64290L0062X830					
T65	2050 ±30%	4600	B64290L0062X065					
T35	2650 ±25%	6000	B64290L0062X035					
T38	4410 ±30%	10000	B64290L0062X038					
T46	6400 ±30%	15000	B64290L0062X046					

■ Epoxy coating

**R 10.0 × 6.00 × 4.00 (mm)**
**R 0.394 × 0.236 × 0.157 (inch)**
**Dimensions**

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
10.0 ±0.2	6.0 ±0.15	4.00 ±0.15	0.394 ±0.008	0.236 ±0.006	0.157 ±0.006	uncoated <sup>1)</sup>
10.8 max.	5.25 min.	4.75 max.	0.433 max.	0.199 min.	0.195 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	900 ±25%	2200	B64290L0038X087	3.07	24.07	7.83	188	0.9
N30	1760 ±25%	4300	B64290L0038X830					
T65	1900 ±30%	4700	B64290L0038X065					
T35	2460 ±25%	6000	B64290L0038X035					
T37	2660 ±25%	6500	B64290L0038X037					
T38	4090 ±30%	10000	B64290L0038X038					
T46	6000 ±30%	15000	B64290L0038X046					

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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