



## **Ferrites and accessories**

Toroids

R 30.5, R 34.0, R 36.0

**Series/Type:**            **B64290**

Date:                        September 2006

**R 30.5 × 20.0 × 12.5**
**B64290L0657**
**R 34.0 × 20.5 × 10.0**
**B64290L0058**

■ Epoxy coating

**R 30.5 × 20.0 × 12.5 (mm)**
**R 1.201 × 0.787 × 0.492 (inch)**

### Dimensions

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
30.5 ±1.0	20.0 ±0.6	12.5 ±0.4	1.201 ±0.039	0.787 ±0.024	0.492 ±0.016	uncoated <sup>1)</sup>
32.3 max.	18.2 min.	13.7 max.	1.272 max.	0.717 min.	0.539 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	2320 ±25%	2200	B64290L0657X087	1.19	77.02	64.66	4980	25
N30	4540 ±25%	4300	B64290L0657X830					
T65	5400 ±30%	5100	B64290L0657X065					
T37	6400 ±25%	6100	B64290L0657X037					
T38	10600 ±30%	10000	B64290L0657X038					

■ Epoxy coating

**R 34.0 × 20.5 × 10.0 (mm)**
**R 1.339 × 0.807 × 0.394 (inch)**

### Dimensions

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
34.0 ±0.7	20.5 ±0.5	10.0 ±0.3	1.339 ±0.028	0.807 ±0.020	0.394 ±0.012	uncoated <sup>1)</sup>
35.5 max.	19.2 min.	11.1 max.	1.398 max.	0.756 min.	0.437 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	2230 ±25%	2200	B64290L0058X087	1.24	82.06	66.08	5423	27
N30	4360 ±25%	4300	B64290L0058X830					
T65	5100 ±30%	5000	B64290L0058X065					
T37	6100 ±25%	6000	B64290L0058X037					
T38	10100 ±30%	10000	B64290L0058X038					

1) On request

**R 34.0 × 20.5 × 12.5**
**B64290L0048**
**R 36.0 × 23.0 × 15.0**
**B64290L0674**

■ Epoxy coating

**R 34.0 × 20.5 × 12.5 (mm)**
**R 1.339 × 0.807 × 0.492 (inch)**
**Dimensions**

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
34.0 ±0.7	20.5 ±0.5	12.5 ±0.3	1.339 ±0.028	0.807 ±0.020	0.492 ±0.012	uncoated <sup>1)</sup>
35.5 max.	19.2 min.	13.6 max.	1.398 max.	0.756 min.	0.535 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	2790 ±25%	2200	B64290L0048X087	0.99	82.06	82.60	6778	33
N30	5460 ±25%	4300	B64290L0048X830					
T65	6400 ±30%	5000	B64290L0048X065					
T37	7600 ±25%	6000	B64290L0048X037					
T38	12700 ±30%	10000	B64290L0048X038					

■ Epoxy coating

**R 36.0 × 23.0 × 15.0 (mm)**
**R 1.417 × 0.906 × 0.591 (inch)**
**Dimensions**

$d_a$ (mm)	$d_i$ (mm)	Height (mm)	$d_a$ (inch)	$d_i$ (inch)	Height (inch)	
36.0 ±0.7	23.0 ±0.5	15.0 ±0.4	1.417 ±0.028	0.906 ±0.020	0.591 ±0.016	uncoated <sup>1)</sup>
37.5 max.	21.7 min.	16.2 max.	1.476 max.	0.854 min.	0.638 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	2940 ±25%	2200	B64290L0674X087	0.94	89.65	95.89	8597	43
N30	5750 ±25%	4300	B64290L0674X830					
T65	6700 ±30%	5000	B64290L0674X065					
T37	8000 ±25%	6000	B64290L0674X037					
T38	13500 ±30%	10000	B64290L0674X038					

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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