



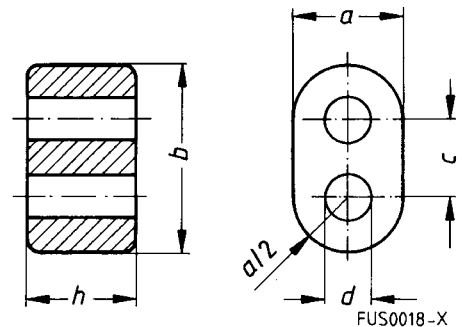
## **Ferrites and accessories**

### Double-aperture cores

**Series/Type:** B62152  
**Date:** September 2006

**Primarily used for broadband transformers up to high frequencies**
**Application examples**

- SIFERRIT material N30 for low frequencies and for pulse applications
- SIFERRIT material K1 for matching transformers and baluns up to about 250 MHz in antenna feeders or in input circuits of VHF and TV receivers



Dimensions <sup>1)</sup>					Magnetic characteristics				Weight g
h (mm)	b (mm)	a (mm)	c (mm)	d (mm)	$\Sigma l/A^2$ mm <sup>-1</sup>	$l_e^{(2)}$ mm	$A_e^{(2)}$ mm <sup>2</sup>	$V_e^{(2)}$ mm <sup>3</sup>	
14.5 – 1.0	14.50 – 1.0	8.5 – 0.5	5.85 ±0.25	3.4 + 0.80	0.31	15.3	49.7	760	4.0
8.3 – 0.6	14.50 – 1.0	8.5 – 0.5	5.85 ±0.25	3.4 + 0.60	0.54	15.3	28.4	435	2.5
6.2 – 0.5	7.25 – 0.5	4.2 – 0.4	2.90 ±0.15	1.7 + 0.30	0.75	7.6	10.2	78	0.4
2.5 – 0.2	3.60 – 0.3	2.1 – 0.3	1.45 ±0.10	0.8 + 0.15	1.78	3.7	2.1	7.8	0.1
2.0 – 0.2	3.60 – 0.3	2.1 – 0.3	1.45 ±0.10	0.8 + 0.15	2.20	3.7	1.7	6.3	0.1

**Overview of available types**

Core height h (mm)	Material	$A_L$ value <sup>2)</sup> nH (Tol. ±30%)	Ordering code <sup>3)</sup>
14.5 – 1.0	K1	330	B62152A0001X001
8.3 – 0.6	K1	190	B62152A0004X001
	N30	10000	B62152A0004X030
6.2 – 0.5	K1	140	B62152A0007X001
	N30	7300	B62152A0007X030
2.5 – 0.2	K1	60	B62152A0008X001
	N30	3100	B62152A0008X030
	M13	1440	B62152A0008X013
2.0 – 0.2	K1	42	B62152A0027X001
	N30	2400	B62152A0027X030
	M13	1100	B62152A0027X013

1) Cores made of NiZn ferrite may exceed the specified dimensions by up to 5%.

2) Magnetic characteristics and  $A_L$  value are based on winding of center leg.

3) Double-aperture cores are available with parylene coating on request. In this case the thickness of the coating is approx. 10 to 15 µm. Ordering code for coated version: B62152P...

### **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.

## Important notes

The following applies to all products named in this publication:

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