

## Power line chokes

Current-compensated ring core double chokes

250 V AC, 0.2 ... 47 mH, 0.3 ... 6 A, +40 °C / + 50 °C / +60 °C / +70 °C

**Series/Type:**            **B82721A/J/K**

**Date:**                    June 2025

## Power line chokes

B82721A/J/K

## Current-compensated ring core double chokes

**Rated voltage 250 V AC**




**Rated current 0.3 ... 6 A / +40 °C, +50 °C, +60 °C, +70 °C**

**Nominal inductance 0.2 ... 47 mH**

### Construction

- Current-compensated ring core double choke
- Ferrite core with epoxy coating (UL 94 V-0)
- Plastic case (UL 94 V-0)
- Potting (UL 94 V-0)
- Sector winding
- Color of materials may vary

### Features

- High resonance frequency due to special winding technique
- Approx. 1% stray inductance for symmetrical interference suppression
- Suitable for wave soldering
- Design complies with EN 60938-2 (VDE 0565-2) and UL 1283
- UL<sup>1)</sup> and /or ENEC (VDE) approvals   
- Construction approved to EN 60335-1 (VDE 0700-1)<sup>2)</sup>
- RoHS-compatible

### Applications

- Suppression of common-mode interferences
- Switch-mode power applications
- Electronic ballasts in lamps
- Power inverters

### Terminals

- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Pins 0.7 × 0.7 (mm)
- Lead spacing 10 × 5 (mm) or 10 × 15 (mm)

### Marking

Product brand, approval signs and VDE standard number, ordering code, graphic symbol, rated current, rated voltage, nominal inductance, date of manufacture (YYWWD.internal ID code)

### Delivery mode

- Blister tray in cardboard box
- Delivery in tube magazine is available on request for B82721A\*

1) UL approval with 300 V AC

2) Certified values:

Glow wire test (GWT to IEC 60695-2-11):	+750 °C, 2 s / +850 °C, 30 s
Ball pressure test (BP to IEC 60695-10-2):	+125 °C



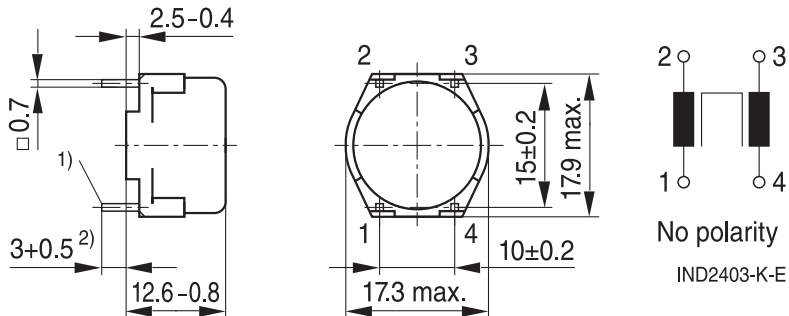
B82721A



B82721J



B82721K

**Dimensional drawings and pin configurations**
**Horizontal version (B82721A)**


1) Tin tips permissible

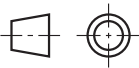
2) Dimension does not include tin tip

IND2217-W-E

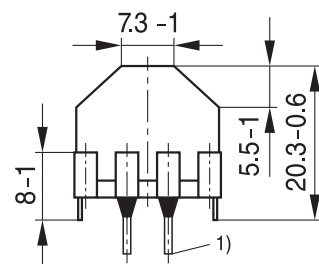
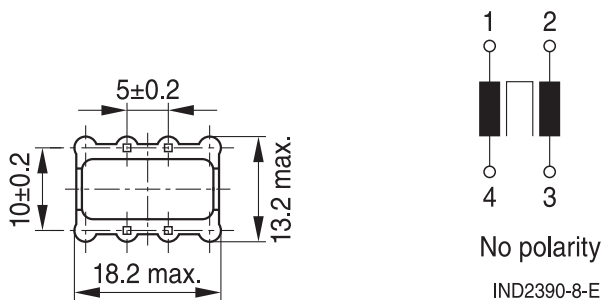
Tolerances to ISO 2768-c / ISO 8015.

Size ISO 14405 (E)

All dimensions in mm

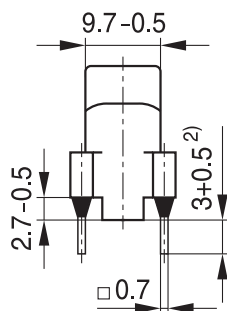


IND2200-F-E

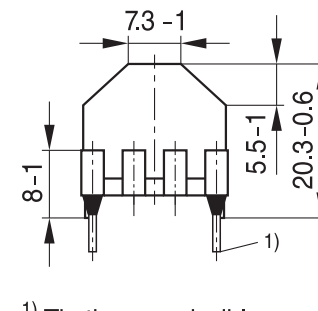
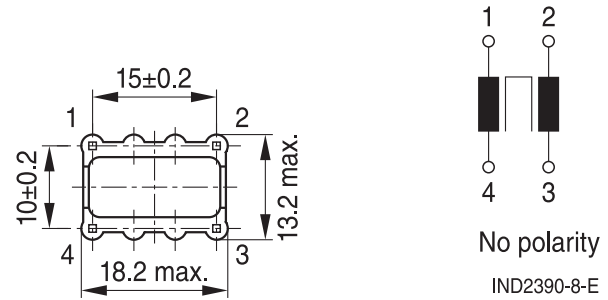
**Vertical version (B82721J)**


1) Tin tips permissible

2) Dimension does not include tin tip

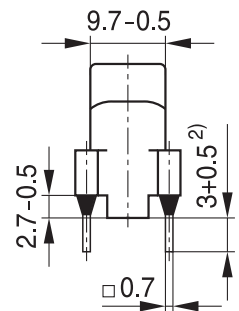


IND2218-X-E

**Vertical version (B82721K)**


1) Tin tips permissible

2) Dimension does not include tin tip

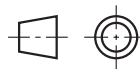


IND2219-Y-E

Tolerances to ISO 2768-c / ISO 8015.

Size ISO 14405 (E)

All dimensions in mm





IND2200-F-E

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**B82721A/J/K**
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**Technical data and measuring conditions**

Rated voltage $V_R$	250 V AC (50/60 Hz)
Test voltage $V_{\text{test}}$	1500 V AC, 2 s (line/line)
Rated temperature $T_R$	+40 °C / +50 °C / +60 °C / +70 °C
Rated current $I_R$	Referred to 50 Hz and rated temperature
Nominal inductance $L_N$	Measured with Agilent 4284A at 0.1 mA, +20 °C Measuring frequency: $L_R \leq 1 \text{ mH}$ : $f=100 \text{ kHz}$ $L_R > 1 \text{ mH}$ : $f=10 \text{ kHz}$ Inductance is specified per winding.
Inductance tolerance	$\pm 30\%$ at +20 °C
Inductance decrease $\Delta L/L_0$	$< 10\%$ at DC magnetic bias with $I_R$ , +20 °C
Stray inductance $L_{\text{stray,typ}}$	Measured with Agilent 4284A at 5 mA, +20 °C, typical values Measuring frequency: $L_R \leq 1 \text{ mH}$ : $f=100 \text{ kHz}$ $L_R > 1 \text{ mH}$ : $f=10 \text{ kHz}$
DC resistance $R_{\text{typ}}$	Measured at +20 °C, typical values, specified per winding
Solderability (lead-free)	Sn96.5Ag3.0Cu0.5: $+(245 \pm 3) \text{ °C}$ , $(3 \pm 0.3) \text{ s}$ Wetting of soldering area $\geq 95\%$ (to IEC 60068-2-20, test Ta)
Resistance to soldering heat (wave soldering)	$+(260 \pm 5) \text{ °C}$ , $(10 \pm 1) \text{ s}$ (to IEC 60068-2-20, test Tb)
Climatic category	40/125/56 (to IEC 60068-1)
Storage conditions (packaged)	$-25 \text{ °C} \dots +40 \text{ °C}$ , $\leq 75\% \text{ RH}$
Weight	Approx. 5 g
Approvals	IEC / EN 60938-2, UL 1283 (E70122)



**Power line chokes**
**B82721A/J/K**
**Current-compensated ring core double chokes**
**Characteristics and ordering codes**

Horizontal version B82721A

$I_R$ A	$L_N$ mH	$L_{\text{stray, typ}}$ $\mu\text{H}$	$R_{\text{typ}}$ $\text{m}\Omega$	$T_R$ $^{\circ}\text{C}$	Ordering code Horizontal version	Approvals	
							
0.3	47	500	2200	+50	B82721A2301N020	×	×
0.4	39	450	2000	+40	B82721A2401N020	×	×
0.4	27	300	1700	+40	B82721A2401N021	×	×
0.4	39	450	2000	+70	B82721A2401N023	×	×
0.5	27	290	1100	+60	B82721A2501N022	×	×
0.5	18	250	1400	+40	B82721A2501N001	×	×
0.5	15	160	800	+40	B82721A2501N021	×	×
0.6	15	170	700	+40	B82721A2601N020	×	×
0.7	10	110	550	+60	B82721A2701N020	×	×
1.2	6.8	80	280	+40	B82721A2122N020	×	×
1.5	3.3	37	180	+40	B82721A2152N001	×	×
2.0	1.0	13	80	+40	B82721A2202N001	×	×
2.5	0.6	8	60	+40	B82721A2252N020	×	×
2.6	0.4	6	55	+40	B82721A2262N001	×	×
3.6	0.4	6	35	+40	B82721A2362N001	×	×
4.0	0.7	7	30	+40	B82721A2402N020	×	×
6.0	0.2	2.5	15	+40	B82721A2602N020	×	×

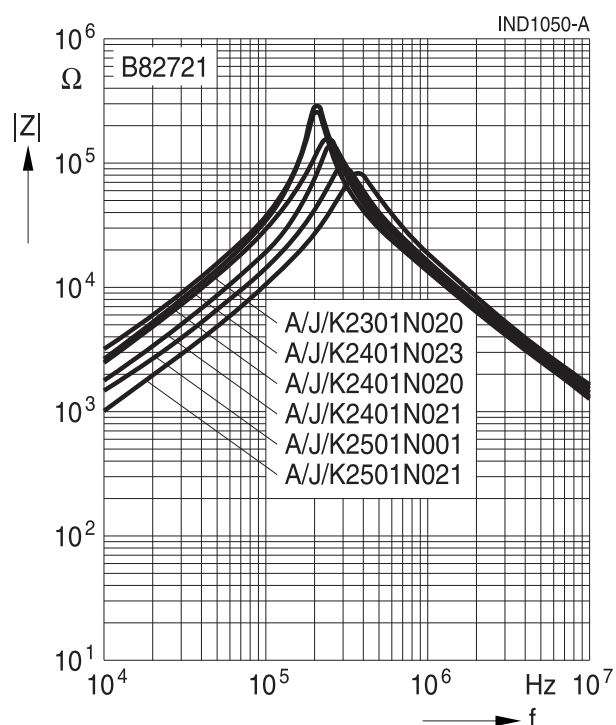
**Power line chokes**
**B82721A/J/K**
**Current-compensated ring core double chokes**

Vertical versions B82721J, B82721K

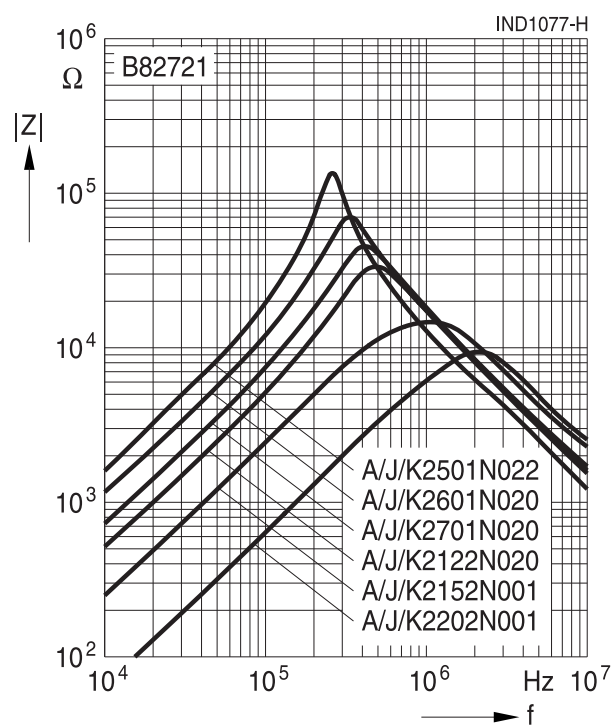
I <sub>R</sub> A	L <sub>N</sub> mH	L <sub>stray,typ</sub> μH	R <sub>typ</sub> mΩ	T <sub>R</sub> °C	Ordering code		Approvals	
					Vertical version (J)	Vertical version (K)		
0.3	47	500	2200	+50	B82721J2301N020	B82721K2301N020	×	×
0.4	39	450	2000	+40	B82721J2401N020	B82721K2401N020	×	×
0.4	27	300	1700	+40	B82721J2401N021	B82721K2401N021	×	×
0.4	39	450	2000	+70	B82721J2401N023	B82721K2401N023	×	×
0.5	27	290	1100	+60	B82721J2501N022	B82721K2501N022	×	×
0.5	18	250	1400	+40	B82721J2501N001	B82721K2501N001	×	×
0.5	15	160	800	+40	B82721J2501N021	B82721K2501N021	×	×
0.6	15	170	700	+40	B82721J2601N020	B82721K2601N020	×	×
0.7	10	110	550	+60	B82721J2701N020	B82721K2701N020	×	×
1.2	6.8	80	280	+40	B82721J2122N020	B82721K2122N020	×	×
1.5	3.3	37	180	+40	B82721J2152N001	B82721K2152N001	×	×
2.0	1.0	13	80	+40	B82721J2202N001	B82721K2202N001	×	×
2.5	0.6	8	60	+40	B82721J2252N020	B82721K2252N020	×	×
2.6	0.4	6	55	+40	B82721J2262N001	B82721K2262N001	×	×
3.6	0.4	6	35	+40	—	B82721K2362N001	×	×
4.0	0.7	7	30	+40	—	B82721K2402N020	×	×
6.0	0.2	2.5	15	+40	—	B82721K2602N020	×	×

× = approval granted

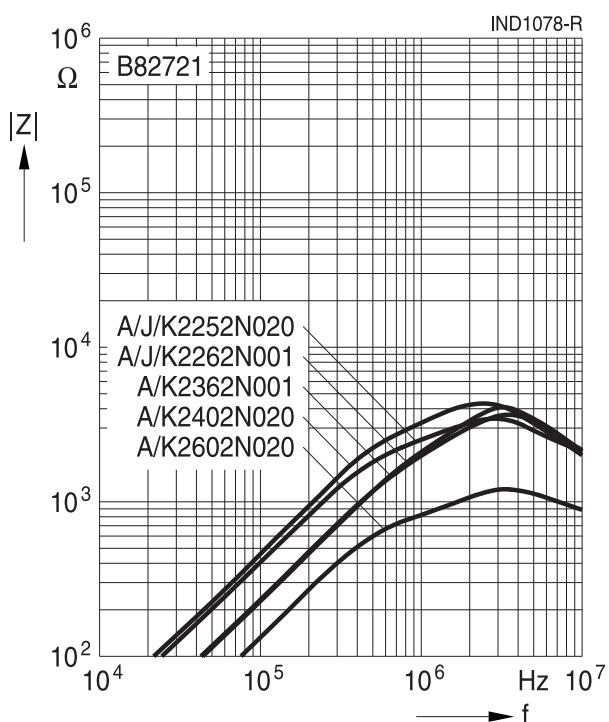
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



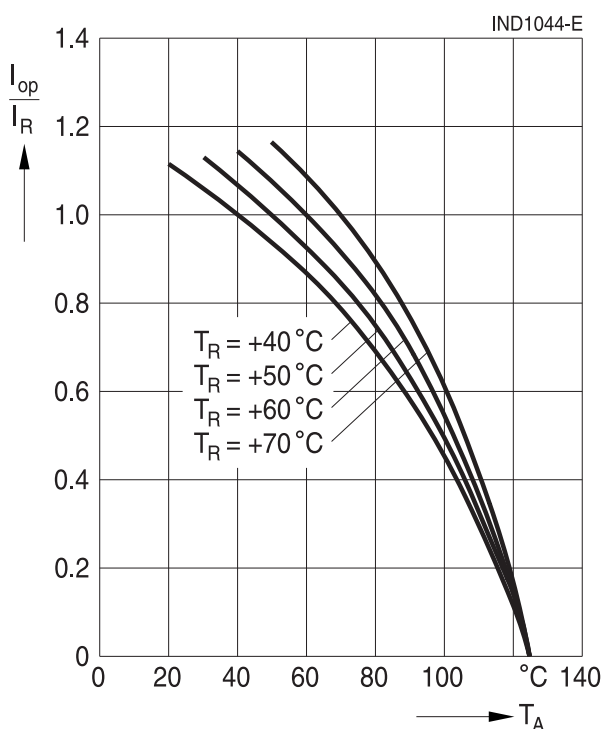
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



**Current derating  $I_{op}/I_R$   
versus temperature  $T_A$**



## Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition), online catalogs and in the data sheets.
  - Particular attention should be paid to the derating curves, if given. Derating applies in the case the ambient temperature in application exceeds the rated temperature of the component.
  - Ensure the operation temperature of the component in application not to exceed the maximum specified value or the upper climatic category temperature.
  - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pins only. Temperatures specified in relation to reflow soldering can also refer to the pins or terminals for products with larger thermal mass, as in such cases, the temperature difference to the top of the component is too big (e.g., high proportion of core within the component).
- If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. It is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.  
 Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g., ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- The following points must be observed if the components are potted, sealed, or varnished in customer applications:
  - Many potting, sealing, or varnishing materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
  - It is necessary to check whether the potting, sealing or varnishing materials used attack or destroy the wire insulation, plastics, or glue.
  - The effect of the potting, sealing, or varnishing materials may change the high-frequency behavior of the components.
- Magnetic core materials such as ferrites are sensitive to direct impact. This can cause the core material to flake or lead to breakage of the magnetic core material.
- Any type of tension or pressure on the product may result in damage and affect its functionality and reliability.
  - The products are only to be attached to fixings or mounting holes provided for this purpose in accordance with the data sheet.
  - If additional mechanical forces are applied to the component, e.g., application of gap pads, it is necessary to check whether they attack or destroy any part of the component.
  - It is not permitted for the product specified in the data sheet to assume a mechanical function in the final application.
- Inductance value can drop if external metallic or magnetic parts will be put close to the coil or into the air gap of the coil or core or magnetic material.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

Release 2024-08-08



**Display of ordering codes for TDK Electronics products**

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.** Detailed information can be found on the Internet under [www.tdk-electronics.tdk.com/orderingcodes](http://www.tdk-electronics.tdk.com/orderingcodes).



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The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
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## Important notes

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