

## 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:**                    October 2016

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**Rated voltage 250 V AC**

**Rated inductance 0.2 ... 47 mH**

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

### 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

### 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, rated inductance, date of manufacture (YYWW). Internal ID code

### Delivery mode

- Blister tray in cardboard box



B82721A



B82721J



B82721K

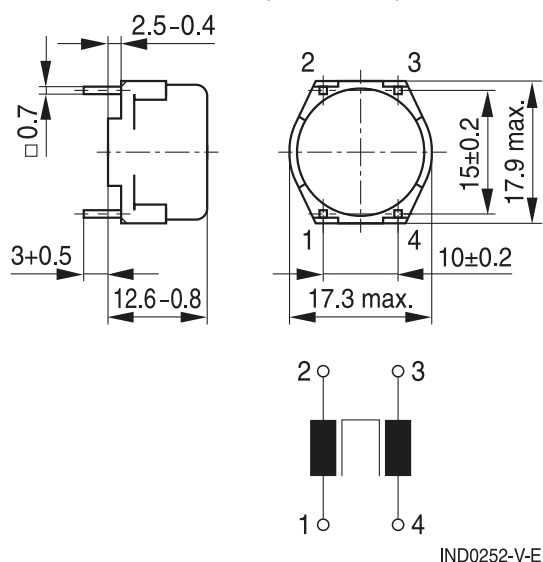
1) UL approval with 300 V AC

2) Certified values:

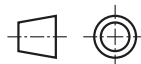
Glow wire test (GWT to IEC 60695-2-11):	+750 °C, 2 s / +850 °C, 30 s
Ball pressure test (BP to IEC 60695-10-2):	+125 °C

# Dimensional drawings and pin configurations

## Horizontal version (B82721A)

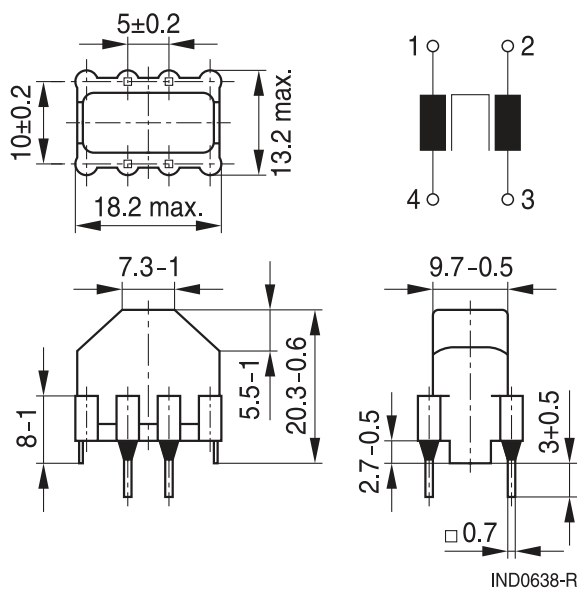


Part tolerances to ISO 2768-cL / ISO 8015.  
Size ISO 14405 (E)  
All dimensions in mm

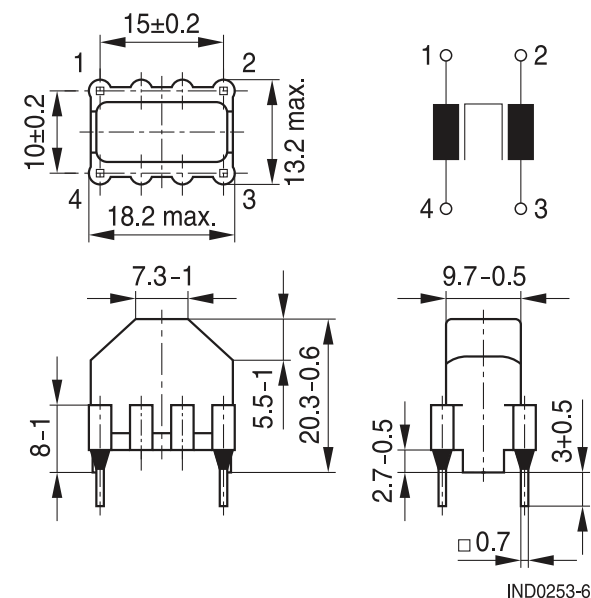


IND1276-L-E

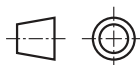
## Vertical version (B82721J)



## Vertical version (B82721K)



Part tolerances to ISO 2768-cL / ISO 8015.  
Size ISO 14405 (E)  
All dimensions in mm





IND1276-L-E

# Technical data and measuring conditions

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

# Characteristics and ordering codes

Horizontal version B82721A

I <sub>R</sub> A	L <sub>R</sub> mH	L <sub>stray, typ</sub> μH	R <sub>typ</sub> mΩ	T <sub>R</sub> °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	×	×

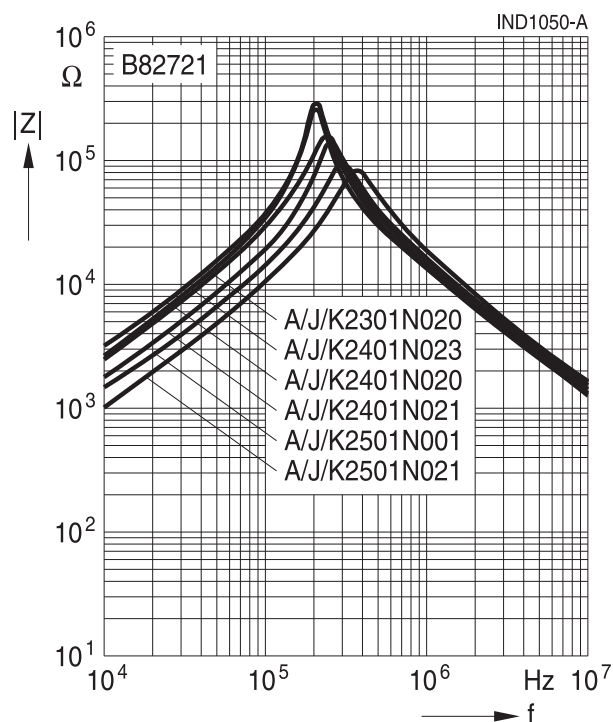
**Power line chokes**
**B82721A/J/K**
**Current-compensated ring core double chokes**

Vertical versions B82721J, B82721K

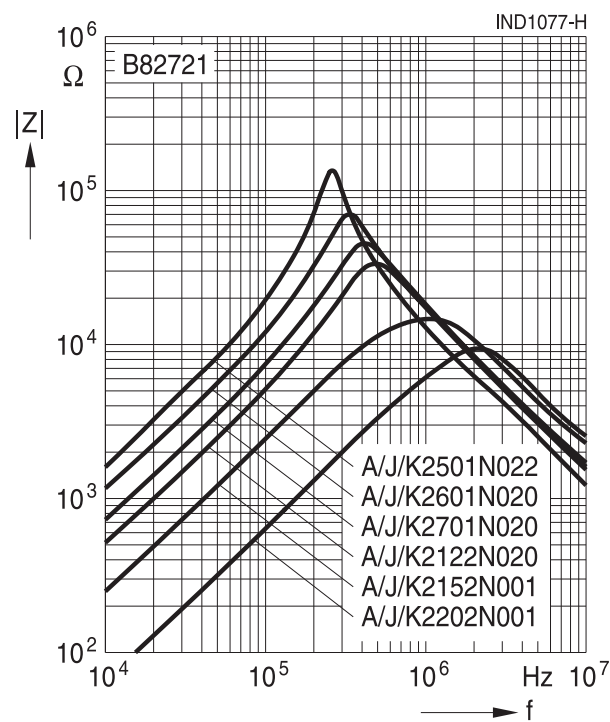
I <sub>R</sub> A	L <sub>R</sub> mH	L <sub>stray,typ</sub> μH	R <sub>typ</sub> mΩ	T <sub>R</sub> °C	Ordering code		Approvals	
					Vertical version (J)	Vertical version (K)		
0.3	47	500	2200	+50	B82721J2301N020	B82721K2301N020	×	×
0.4	39	450	2000	+40	B82721J2401N020	B82721K2401N020	×	×
0.4	27	300	1700	+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

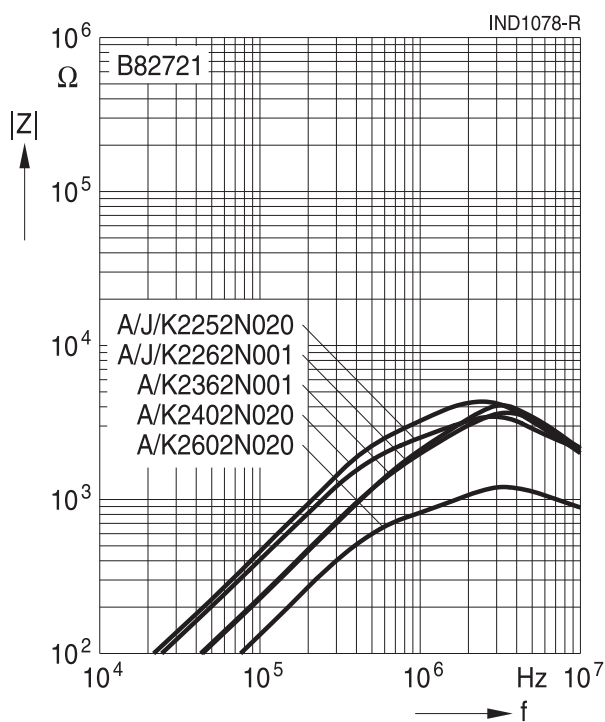
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



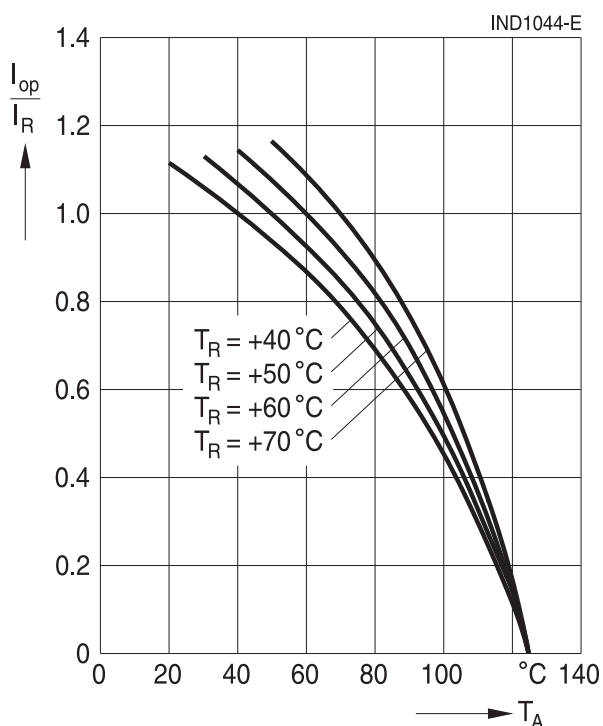
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



**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) and in the data sheets.
  - Particular attention should be paid to the derating curves given there.
  - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.
- 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. In particular, 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 in customer applications:
  - Many potting 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 material used attacks or destroys the wire insulation, plastics or glue.
  - The effect of the potting material can change the high-frequency behaviour of the components.
- Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

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