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## 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


**B82721A**
**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


**B82721J**
**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)


**B82721K**
**Marking**

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

**Delivery mode**

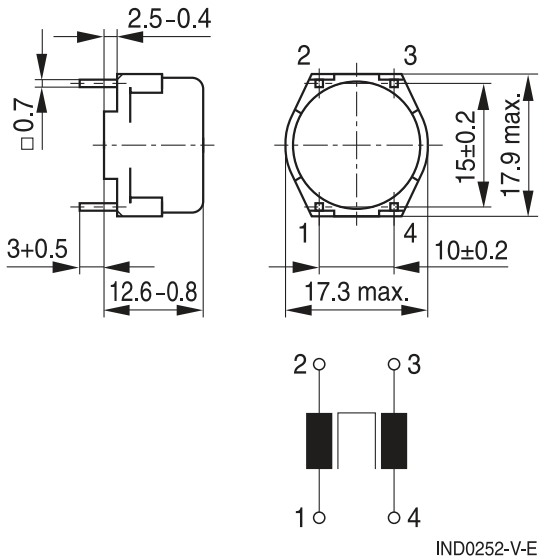
- Blister tray in cardboard box

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

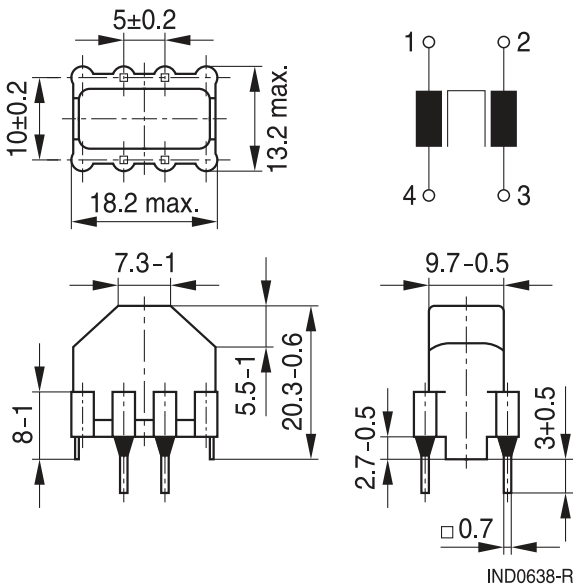
Horizontal version (B82721A)



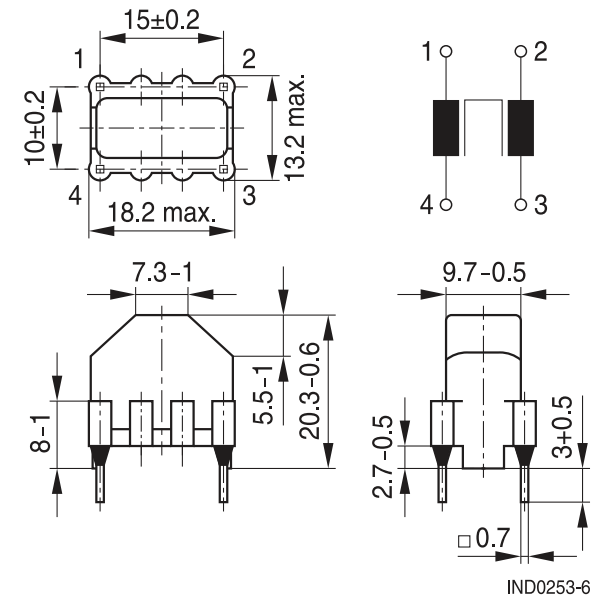
Part tolerances to ISO 2768-cL / ISO 8015.  
 Size ISO 14405 (E)  
 All dimensions in mm

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<br>Measuring frequency: $L_R \leq 1$ mH: $f=100$ kHz<br>$L_R > 1$ mH: $f= 10$ kHz<br>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<br>Measuring frequency: $L_R \leq 1$ mH: $f= 100$ kHz<br>$L_R > 1$ 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<br>Wetting of soldering area $\geq 95\%$<br>(to IEC 60068-2-20, test Ta)   |
| Resistance to soldering heat (wave soldering) | +(260 $\pm$ 5) °C, (10 $\pm$ 1) s<br>(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><br>A | L <sub>R</sub><br>mH | L <sub>stray,typ</sub><br>μH | R <sub>typ</sub><br>mΩ | T <sub>R</sub><br>°C | Ordering code<br>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                     | ×   | ×   |

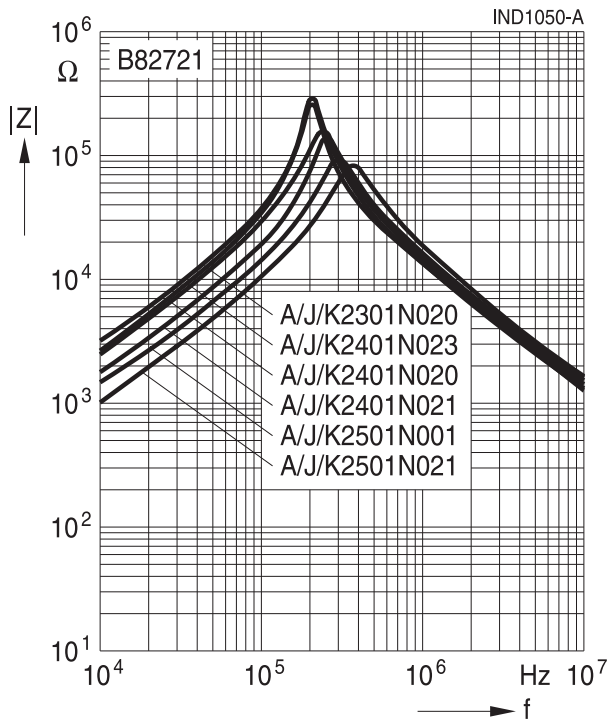
Vertical versions B82721J, B82721K

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

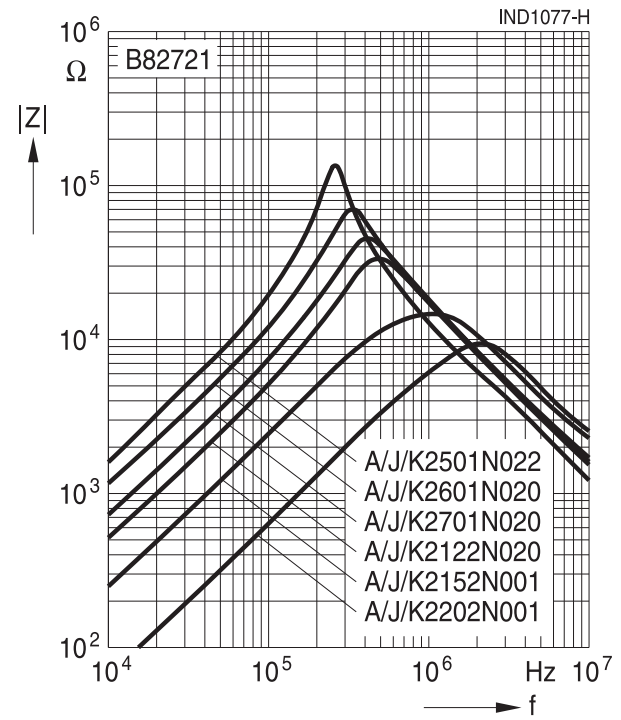
× = approval granted

Current-compensated ring core double chokes

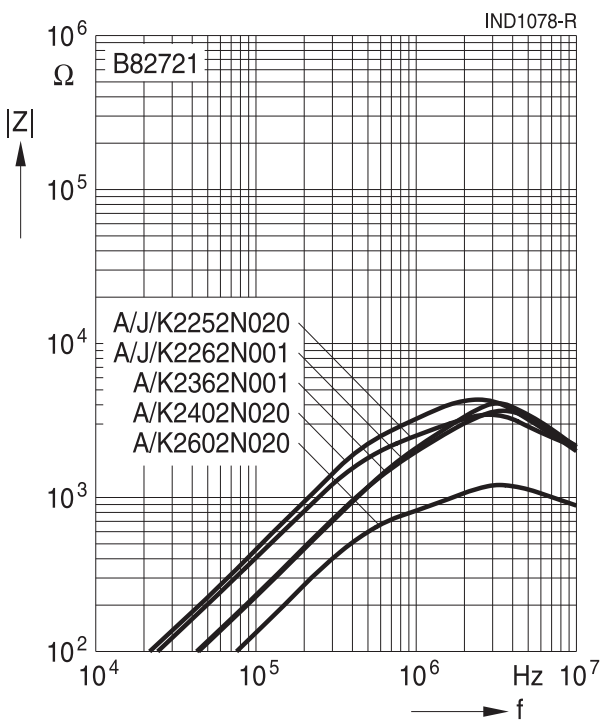
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



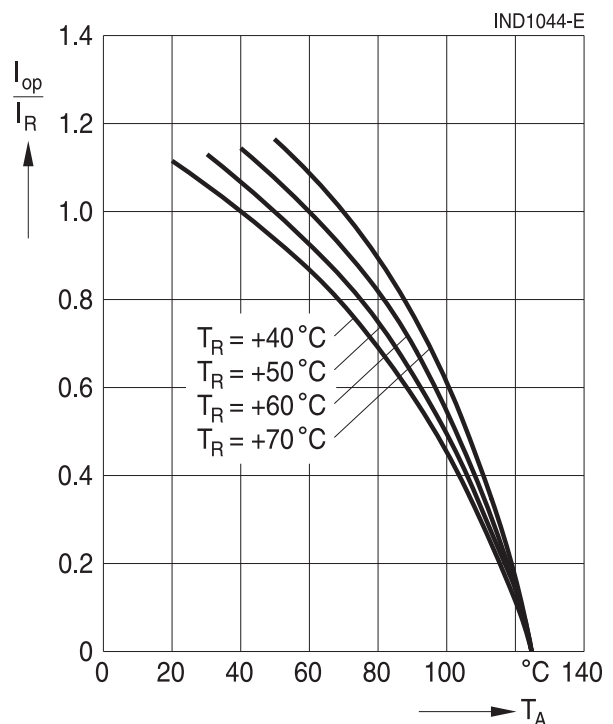
**Impedance  $|Z|$  versus frequency  $f$**   
measured with windings in parallel at +20 °C,  
typical values



**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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