

## Power line chokes

Current-compensated ring core double chokes  
250 V AC, 0.4 ... 47 mH, 0.4 ... 2.8 A, +70 °C

**Series/Type:**            **B82721K2\*U\***

**Date:**                    August 2017

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**Rated voltage 250 V AC**

**Rated inductance 0.4 ... 47 mH**


**Rated current 0.4 ... 2.8 A / +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
- Completely potted for local reduction of pollution degree (micro-environment)
- Suitable for wave soldering
- Plastic material approved to EN 60335-1 (VDE 0700-1) clause 30<sup>1)</sup>
- Design complies with EN 60938-2 (VDE 0565-2)
- UL<sup>2)</sup> and ENEC (VDE) approvals 
- RoHS-compatible

### Applications

- Suppression of common-mode interferences
- Switch-mode power applications
- Household appliances ("white goods")
- Heating control systems

### Terminals

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

### Marking

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

### Delivery mode

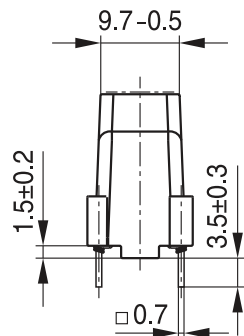
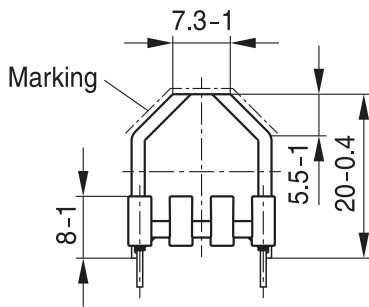
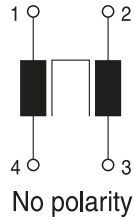
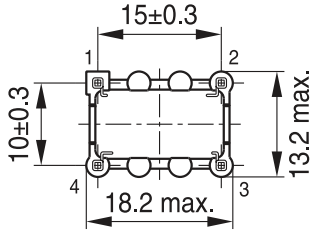
- Blister tray in cardboard box

1) Certified values:

Glow wire flammability index (GWFI to IEC 60695-2-12):	+850 °C
Glow wire ignition temperature (GWIT to IEC 60695-2-13):	+775 °C
Comparative tracking index (CTI to IEC 60112):	600 V
Ball pressure test (BP to IEC 60695-10-2):	+190 °C

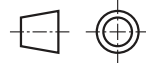
2) UL approval with 300 V AC

Dimensional drawings and pin configurations



IND1309-K-E

Part tolerances to ISO 2768-cL / ISO 8015.  
 Size ISO 14405  $\text{\textcircled{E}}$   
 All dimensions in mm



IND1276-L-E

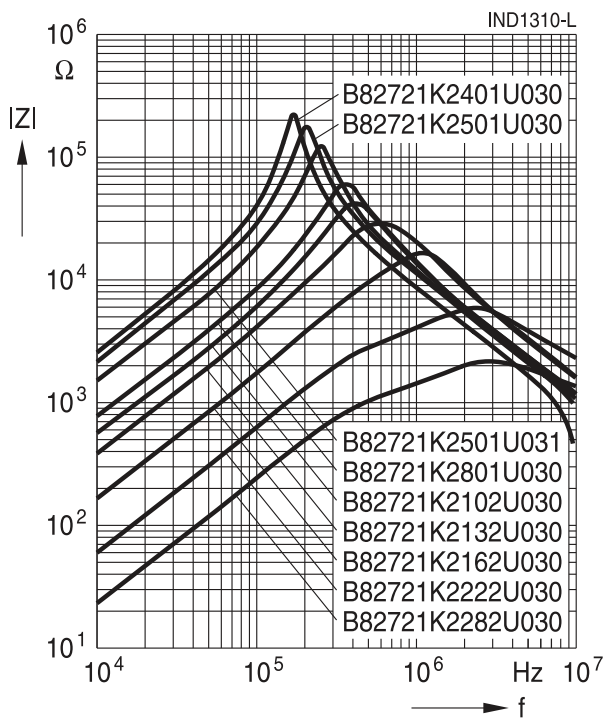
**Technical data and measuring conditions**

Rated voltage $V_R$	250 V AC (50/60 Hz)
Test voltage $V_{test}$	2000 V AC, 2 s (line/line)
Rated temperature $T_R$	+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. 6.5 g
Approvals	IEC / EN 60938-2, UL 1283 (E70122)

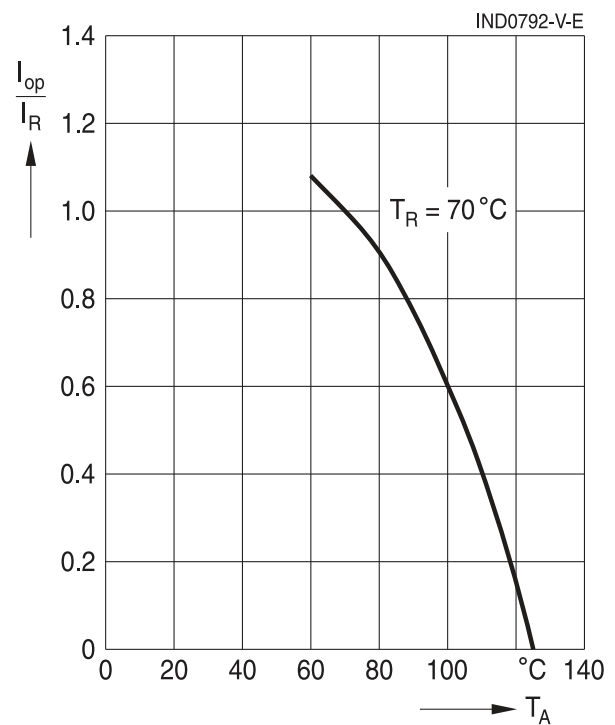
**Characteristics and ordering codes**

$I_R$ A	$L_R$ mH	$L_{\text{stray,typ}}$ $\mu\text{H}$	$R_{\text{typ}}$ $\text{m}\Omega$	Ordering code	Approvals	
0.4	47	460	1560	B82721K2401U030	×	×
0.5	39	370	1380	B82721K2501U030	×	×
0.5	27	280	1140	B82721K2501U031	×	×
0.8	15	150	470	B82721K2801U030	×	×
1.0	10	100	330	B82721K2102U030	×	×
1.3	6.8	65	200	B82721K2132U030	×	×
1.6	3.3	30	130	B82721K2162U030	×	×
2.2	1.0	10	70	B82721K2222U030	×	×
2.8	0.4	4	45	B82721K2282U030	×	×

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



**Current derating  $I_{\text{op}}/I_R$**   
**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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