

Power line chokes

Current-compensated ring core double chokes
250 V AC, 0.3 ... 6 A, 0.2 ... 47 mH


Series/Type: B82721A/J/K

Date: July 2012

Rated voltage 250 V AC
Rated current 0.3 ... 6 A
Rated inductance 0.2 ... 47 mH
Construction

- Current-compensated ring core double choke
- Ferrite core with epoxy coating (UL 94 V-0)
- Polycarbonate case (UL 94 V-0)
- Polyurethane 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
- UL¹⁾ and /or ENEC (VDE) approvals 
- RoHS-compatible


B82721J
Applications

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


B82721K
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

- Manufacturer, approval signs and/or VDE standard number, ordering code, graphic symbol, rated current, rated voltage, rated inductance, date of manufacture (YYWWDD.internal ID code)

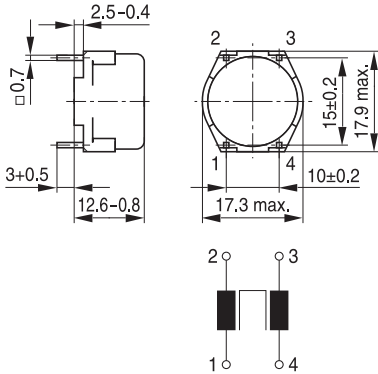
Delivery mode

- Blister tray in cardboard box

1) UL approval with 300 V AC

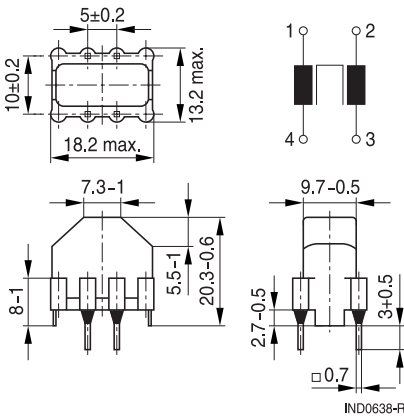
Dimensional drawings and pin configurations

Horizontal version (B82721A)

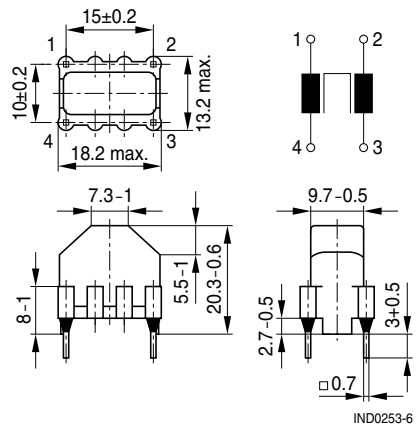


Tolerances to ISO 2768-C unless otherwise noted.
Dimensions in mm

Vertical version (B82721J)



Vertical version (B82721K)



Tolerances to ISO 2768-C unless otherwise noted.
Dimensions in mm.





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: $L_R \leq 1 \text{ mH} = 100 \text{ kHz}$ $L_R > 1 \text{ mH} = 10 \text{ kHz}$ 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: $L_R \leq 1 \text{ mH} = 100 \text{ kHz}$ $L_R > 1 \text{ mH} = 10 \text{ kHz}$
DC resistance R_{typ}	Measured at +20 °C, typical values, specified per winding
Solderability (lead-free)	Sn96.5Ag3.0Cu0.5: +(245 \pm 5) °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	EN 60938-2, UL 1283

Characteristics and ordering codes

Horizontal version B82721A

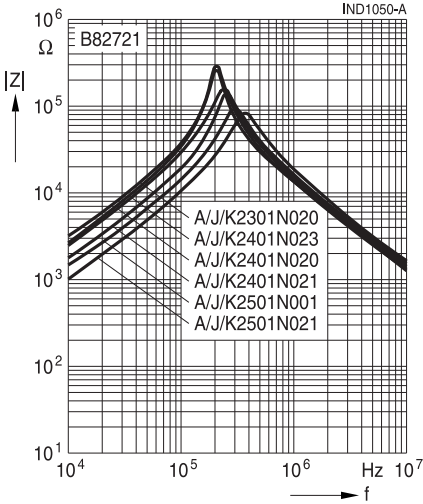
I _R A	L _R mH	L _{stray,typ} μH	R _{typ} mΩ	T _R °C	Ordering code Horizontal version	Approvals	
							
0.3	47	500	2200	+50	B82721A2301N020	×	—
0.4	39	450	2000	+40	B82721A2401N020	×	×
0.4	27	300	1700	+40	B82721A2401N021	×	×
0.4	39	450	2000	+70	B82721A2401N023	—	—
0.5	27	290	1100	+60	B82721A2501N022	×	×
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	×	×

Vertical versions B82721J, B82721K

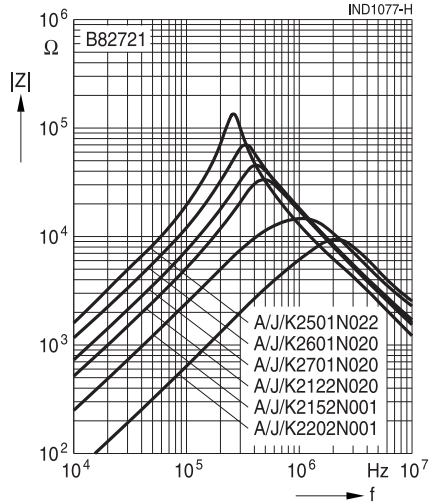
I _R A	L _R mH	L _{stray,typ} μH	R _{typ} mΩ	T _R °C	Ordering code		Approvals	
					Vertical version (J)	Vertical version (K)		
0.3	47	500	2200	+50	B82721J2301N020	B82721K2301N020	×	×
0.4	39	450	2000	+40	B82721J2401N020	B82721K2401N020	×	×
0.4	27	300	1700	+40	B82721J2401N021	B82721K2401N021	×	×
0.4	39	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

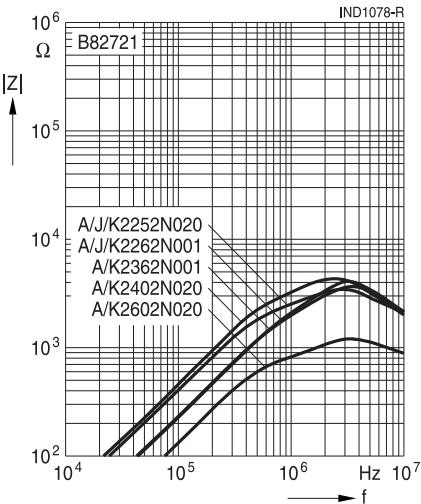
Impedance $|Z|$ versus frequency f
 measured with windings in parallel at +20 °C,
 typical values



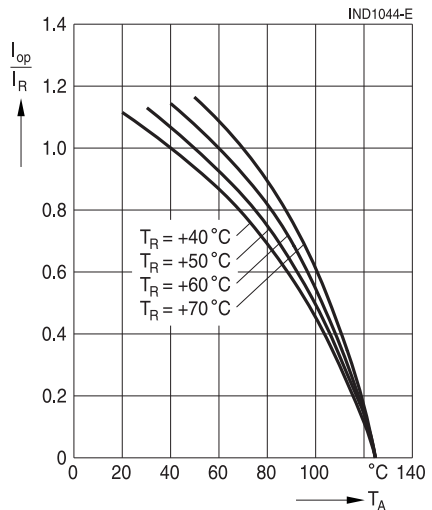
Impedance $|Z|$ versus frequency f
 measured with windings in parallel at +20 °C,
 typical values



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

Current-compensated ring core double chokes

- 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. Derating must be applied in case the ambient temperature in the application exceeds the rated temperature of the component.
 - Ensure the operation temperature (which is the sum of the ambient temperature and the temperature rise caused by losses / self-heating) of the component in the application does not exceed the maximum value specified in the climatic category.
 - 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.

Important notes

Current-compensated ring core double chokes

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