# Power line chokes

## Current-compensated ring core double chokes
## 250 V AC, 0.5 … 6 A, 1 … 82 mH

**Series/Type:** **B82724A/J**

Date: October 2008, January 2009

## Current-compensated ring core double chokes

**Rated voltage 250 V AC**
**Rated current 0.5 A to 6 A**
**Rated inductance 1 mH to 82 mH**


B82724A

B82724J

### Construction

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

### Applications

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

### Terminals

- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Pins 0.7 × 0.7 (mm)
- Lead spacing 15 × 12.5 (mm) or 30 × 20 (mm)

### Marking

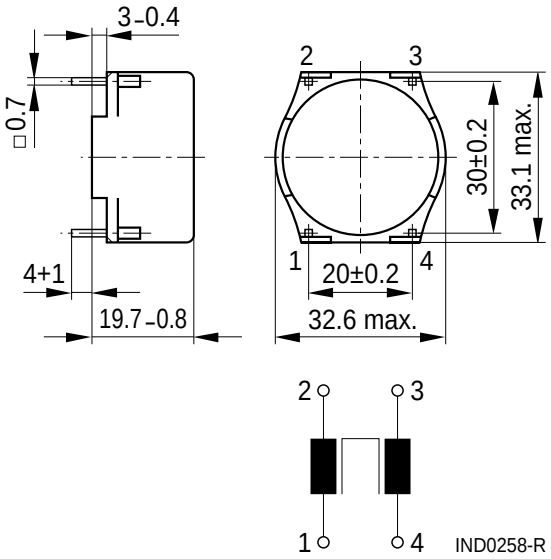
Manufacturer, approval signs and/or VDE standard number, ordering code, graphic symbol, rated current, rated voltage, rated inductance, date of manufacture (YYWWD)

### Delivery mode

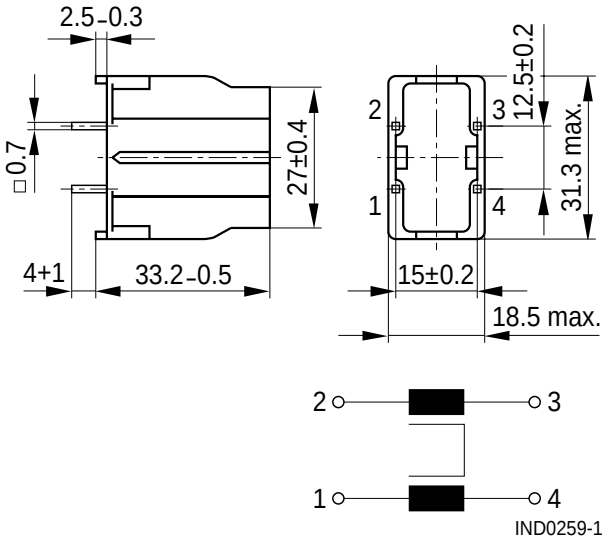
Blister tray in cardboard box

## Dimensional drawings and pin configuration

Horizontal version (B82724A)




Vertical version (B82724J)




Tolerances to ISO 2768-C unless otherwise noted.

Dimensions in mm

## Technical data and measuring conditions

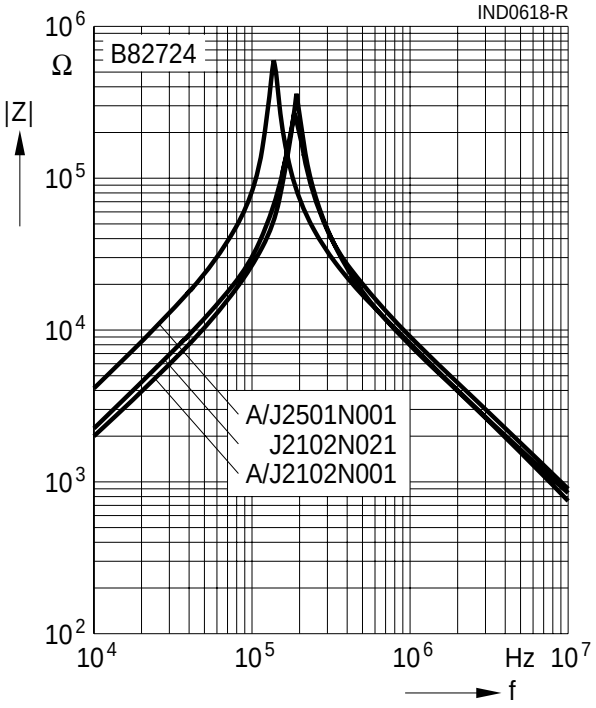
| | |
|---|---|
| Rated voltage $V_R$ | 250 V AC (50/60 Hz) |
| Test voltage $V_{test}$ | 1500 V AC, 2 s (line/line) |
| Rated temperature $T_R$ | 40 °C / 45 °C / 50 °C / 60 °C |
| Rated current $I_R$ | Referred to 50 Hz and rated temperature |
| Rated inductance $L_R$ | Measured with Agilent 4284A at 0.1 mA, 20 °C<br>Measuring frequency: $L_R \leq 1$ mH = 100 kHz<br>$L_R > 1$ mH = 10 kHz<br>Inductance is specified per winding. |
| Inductance tolerance | ±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 = 100 kHz<br>$L_R > 1$ mH = 10 kHz |
| DC resistance $R_{typ}$ | Measured at 20 °C, typical values, specified per winding |
| Solderability (lead-free) | Sn96.5Ag3.0Cu0.5: (245 ±5) °C, (3 ±0.3) s<br>Wetting of soldering area ≥ 95%<br>(to IEC 60068-2-20, test Ta) |
| Resistance to soldering heat (wave soldering) | (260 ±5) °C, (10 ±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, ≤ 75% RH |
| Weight | Approx. 27 g … 32 g |
| Approvals | EN 60938-2, UL 1283 |

## Characteristics and ordering codes

| $I_R$ | $L_R$ | $L_{stray,typ}$ | $R_{typ}$ | $T_R$ | Ordering code | | Approvals | |
|---|---|---|---|---|---|---|---|---|
| A | mH | µH | mΩ | °C | Horizontal version | Vertical version | | |
| 0.5 | 82.0 | 1000 | 2300 | 60 | B82724A2501N001 | B82724J2501N001 | × | × |
| 1.0 | 39.0 | 350 | 750 | 60 | – | B82724J2102N021 | × | × |
| 1.0 | 33.0 | 400 | 750 | 60 | B82724A2102N001 | B82724J2102N001 | × | × |
| 1.4 | 37.0 | 320 | 420 | 60 | – | B82724J2142N021 | × | × |
| 1.4 | 27.0 | 260 | 460 | 50 | B82724A2142N001 | B82724J2142N001 | × | × |
| 1.6 | 10.0 | 120 | 350 | 60 | – | B82724J2162N001 | × | × |
| 1.8 | 33.0 | 300 | 400 | 40 | – | B82724J2182N021 | × | – |
| 2.0 | 6.8 | 80 | 170 | 60 | B82724A2202N001 | B82724J2202N001 | × | × |
| 2.2 | 20.0 | 180 | 250 | 40 | – | B82724J2222N021 | × | – |
| 2.2 | 15.0 | 140 | 210 | 45 | – | B82724J2222N020 | × | × |
| 2.5 | 10.0 | 90 | 140 | 40 | – | B82724J2252N020 | – | – |
| 2.5 | 5.6 | 55 | 125 | 60 | – | B82724J2252N001 | × | × |
| 2.7 | 6.6 | 60 | 110 | 60 | – | B82724J2272N020 | – | – |
| 3.0 | 12.0 | 110 | 125 | 40 | B82724A2302N021 | B82724J2302N021 | – | – |
| 3.3 | 5.6 | 45 | 95 | 40 | – | B82724J2332N001 | – | – |
| 4.0 | 4.7 | 40 | 65 | 60 | – | B82724J2402N020 | × | × |
| 4.0 | 3.3 | 35 | 65 | 60 | B82724A2402N001 | B82724J2402N001 | × | × |
| 5.0 | 2.5 | 25 | 38 | 60 | – | B82724J2502N001 | – | – |
| 5.1 | 4.1 | 30 | 46 | 60 | – | B82724J2512N020 | – | – |
| 6.0 | 3.3 | 17 | 25 | 60 | – | B82724J2602N041 | – | – |
| 6.0 | 1.8 | 20 | 31 | 40 | B82724A2602N020 | – | × | × |
| 6.0 | 1.0 | 12 | 23 | 60 | – | B82724J2602N001 | × | × |

× = approval granted

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




**Impedance |Z| versus frequency f**
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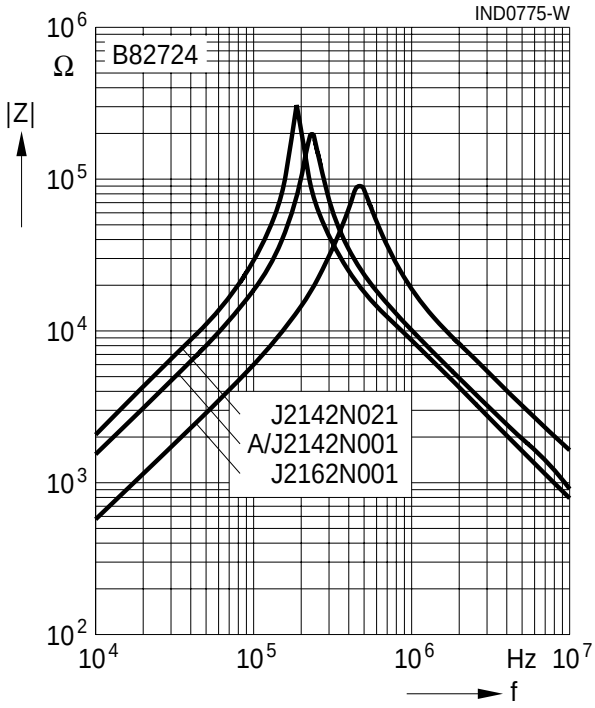


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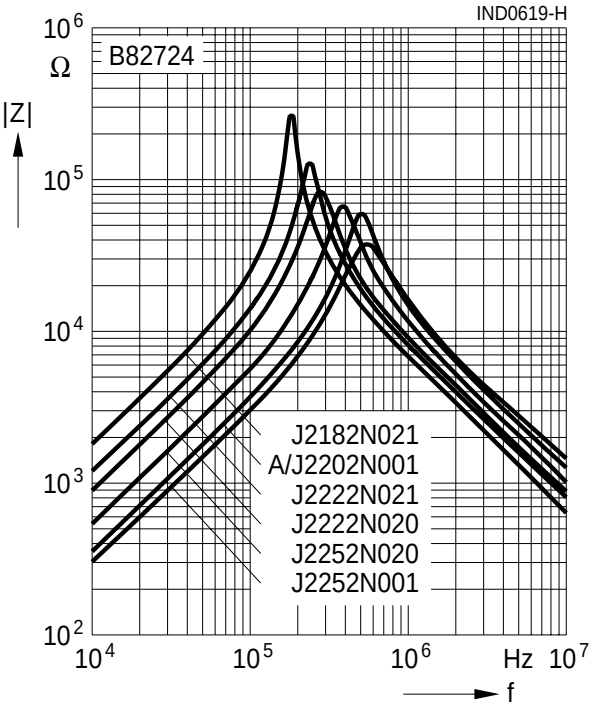


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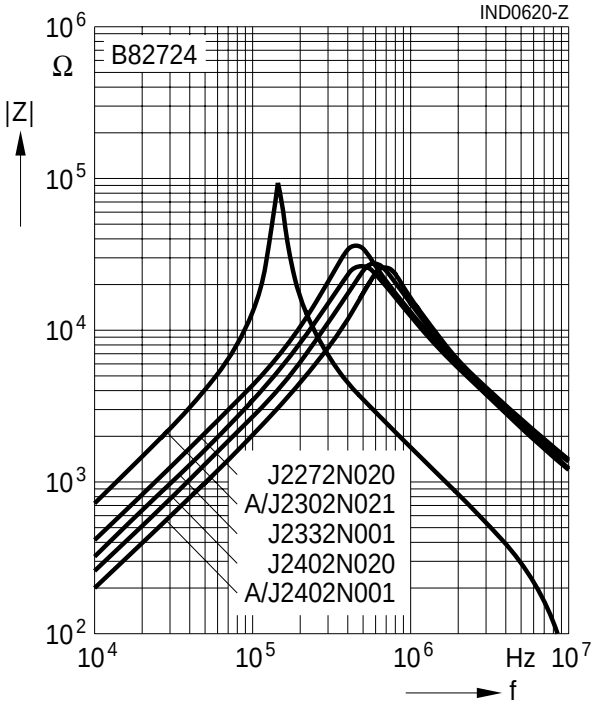

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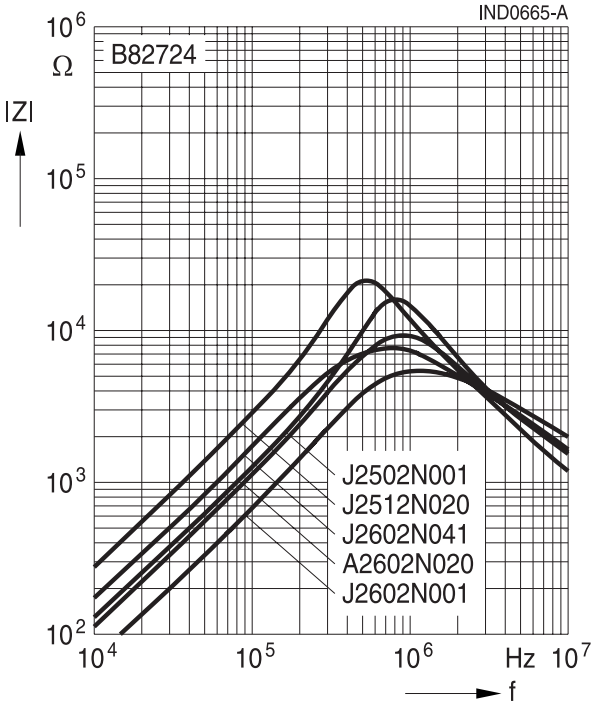
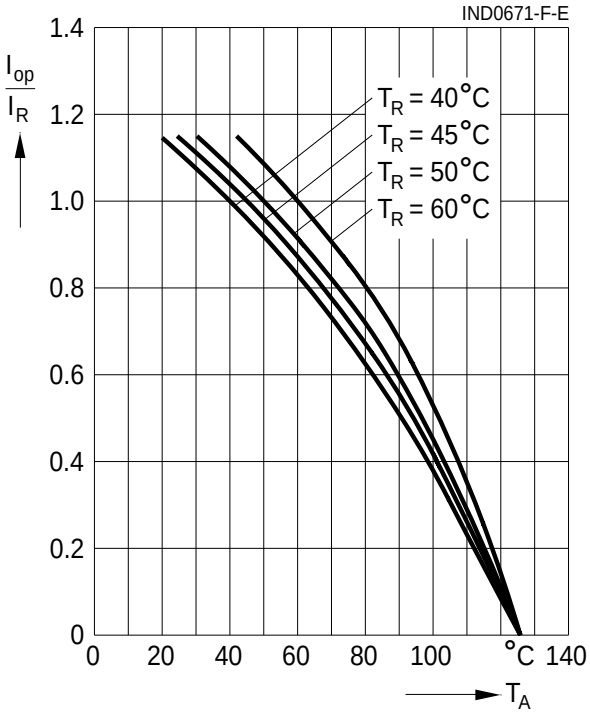
measured with windings in parallel at 20 °C, typical values




**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.
- 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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