



## Power line chokes

Current-compensated D core double chokes  
250 V AC, 0.35 ... 1.8 A, 3.3 ... 100 mH, +40 °C

**Series/Type:**            **B82731M/H**

**Date:**                      July 2012

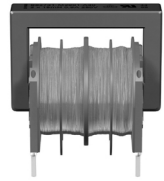
**Rated voltage 250 V AC**

**Rated current 0.35 ... 1.8 A**

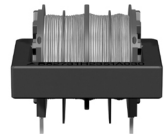
**Rated inductance 3.3 ... 100 mH**

### Construction

- Current-compensated double choke
- Closed rectangular ferrite core
- Closed polycarbonate coil former (UL 94 V-0)
- Without encapsulation
- 2-section winding
- Clearance and creepage distances  $\geq 3$  mm



**B82731M**



**B82731H**

### Features

- High resonance frequency due to 2-section winding
- Approx. 1% stray inductance for symmetrical interference suppression
- Low leakage due to closed core shape
- High pulse strength
- Low whirring noise
- Suitable for wave soldering
- Design complies with EN 60938-2 (VDE 0565-2) and UL 1283
- UL<sup>1)</sup> and ENEC (VDE) approvals 
- Recyclable owing to omission of encapsulation and glue
- RoHS-compatible

### Applications

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

### Terminals

- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Pins 0.6 × 0.6 (mm)
- Lead spacing 10 × 12.5 (mm)

### Marking

- B82731M: Manufacturer, rated inductance, rated current, ordering code, approval symbols, date of manufacture (WWYY)
- B82731H: Manufacturer, ordering code

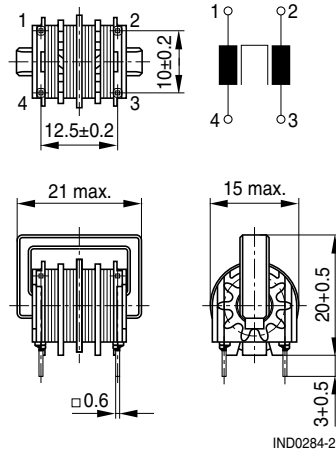
### Delivery mode

Blister tray in cardboard box

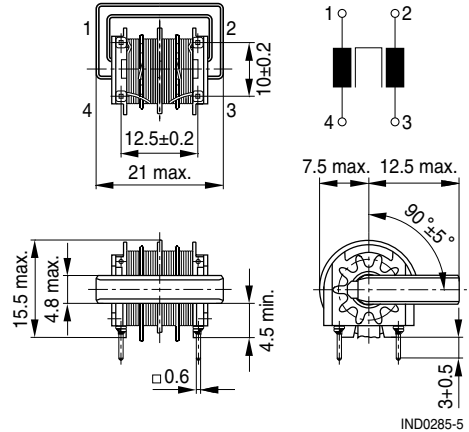
1) UL approval with 300 V AC.

### Dimensional drawings and pin configurations

Vertical version (B82731M)



Horizontal version (B82731H)



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                                                                                                        |
| Rated current $I_R$                           | Referred to 50 Hz and rated temperature                                                                       |
| Rated inductance $L_R$                        | Measured with Agilent 4284A at 10 kHz, 0.1 mA, +20 °C. Inductance is specified per winding.                   |
| Inductance tolerance                          | -30/+50% 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 10 kHz, 5 mA, +20 °C, typ. values                                              |
| 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. 8 g                                                                                                   |
| Approvals                                     | EN 60938-2, UL 1283                                                                                           |

### Characteristics and ordering codes

| $I_R$<br>A | $L_R$<br>mH | $L_{\text{stray,typ}}$<br>$\mu\text{H}$ | $R_{\text{typ}}$<br>$\text{m}\Omega$ | Ordering code    |                    | Approvals                                                                         |                                                                                    |
|------------|-------------|-----------------------------------------|--------------------------------------|------------------|--------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|            |             |                                         |                                      | Vertical version | Horizontal version |  |  |
| 0.35       | 100         | 1000                                    | 4500                                 | B82731M2351A030  | B82731H2351A030    | ×                                                                                 | ×                                                                                  |
| 0.4        | 68          | 700                                     | 3000                                 | B82731M2401A033  | B82731H2401A033    | ×                                                                                 | ×                                                                                  |
| 0.5        | 47          | 470                                     | 2000                                 | B82731M2501A030  | B82731H2501A030    | ×                                                                                 | ×                                                                                  |
| 0.6        | 39          | 390                                     | 1500                                 | B82731M2601A030  | B82731H2601A030    | ×                                                                                 | ×                                                                                  |
| 0.7        | 27          | 270                                     | 1000                                 | B82731M2701A030  | B82731H2701A030    | ×                                                                                 | ×                                                                                  |
| 0.8        | 22          | 220                                     | 800                                  | B82731M2801A030  | B82731H2801A030    | ×                                                                                 | ×                                                                                  |
| 0.9        | 15          | 150                                     | 600                                  | B82731M2901A030  | B82731H2901A030    | ×                                                                                 | ×                                                                                  |
| 1.1        | 10          | 100                                     | 400                                  | B82731M2112A030  | B82731H2112A030    | ×                                                                                 | ×                                                                                  |
| 1.3        | 6.8         | 70                                      | 280                                  | B82731M2132A030  | B82731H2132A030    | ×                                                                                 | ×                                                                                  |
| 1.8        | 3.3         | 35                                      | 140                                  | B82731M2182A030  | B82731H2182A030    | ×                                                                                 | ×                                                                                  |

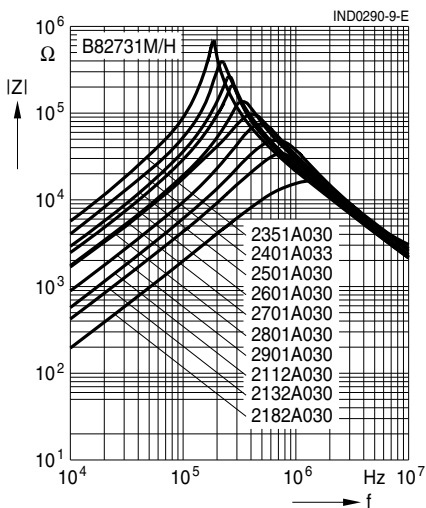
× = approval granted

Sample kit available. Ordering code: B82731X001

For more information refer to chapter "Sample kits".

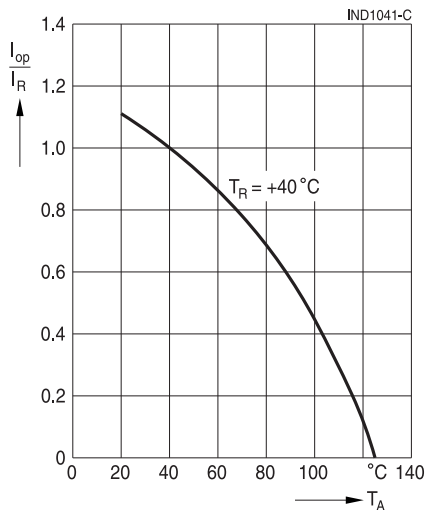
### Impedance $|Z|$ versus frequency $f$

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



### Current derating $I_{op}/I_R$

versus ambient 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

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
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