

## Power line chokes

Current-compensated frame core double chokes  
300 V AC / 500 V DC, 0.7 ... 2.3 A, 10 ... 100 mH, +40 °C

**Series/Type:**            **B82733F/V**

**Date:**                    November 2023

## Power line chokes

B82733F/V

### Current-compensated frame core double chokes

**Rated voltage 300 V AC / 500 V DC**

**Rated current 0.7 ... 2.3 A (+40 °C)**

**Rated inductance 10 ... 100 mH**

#### Construction

- Current-compensated frame core double choke
- Closed magnetic circuit with frame construction made of ferrite
- Epoxy coating (UL94 V-0)
- Plastic coil former (UL94 V-0)
- 4-section winding with direct winding on the core
- Sector winding
- Clearance and creepage distances >4 mm

#### Features

- High inductance with low resistance
- Approx. 2% stray inductance for symmetrical interference suppression
- High pulse-handling capability
- Very good inductance/rated current ratio
- Low height (14 mm, B82733F)
- Suitable for wave soldering
- Design complies with IEC/EN 60938-2 (VDE 0565-2) and UL/IEC 60939-3
- VDE/ENEC10<sup>1)</sup> and UL/ENEC15<sup>2)</sup> approvals  
- RoHS-compatible

#### Applications

- Suppression of common-mode and differential-mode interferences
- Electronic ballasts for lamps
- Switch-mode power applications

#### Terminals

- Base material CP wire
- Hot dipped
- Pins 0.7 × 0.7 mm
- Lead spacing: B82733F: 20 × 22.5 mm  
B82733V: 10 × 18.75 mm

#### Marking

Product brand (EPCOS), date of manufacture (YYWWD), production place identification code, ordering code, approval signs  

#### Delivery mode

- Blister tray (anti-static) in cardboard box



1) VDE approval with 300 V AC

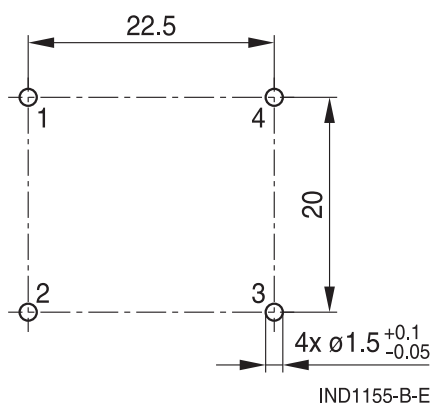
2) UL approval with 300 V AC / 500 V DC

## Current-compensated frame core double chokes

## dimensional drawing and layout recommendation

### B82733F (horizontal version)

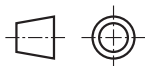
Recommended PCB layout  
(top view)



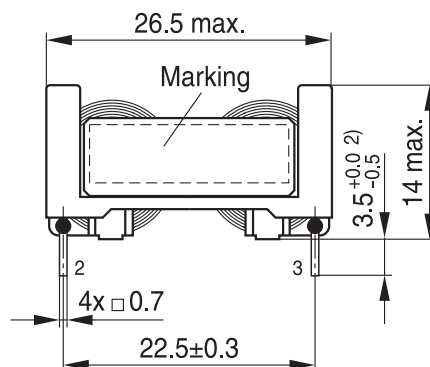
Part tolerances to ISO 2768-c / ISO 8015.

Size ISO 14405 (E)

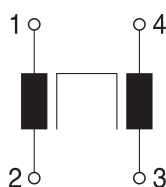
All dimensions in mm



IND2140-B-E

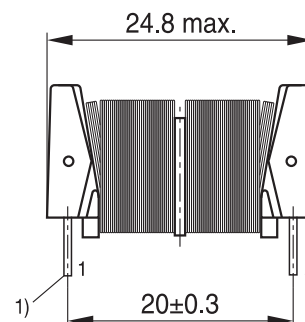


- 1) Tin tips permissible
- 2) Dimension does not include tin tip



No polarity

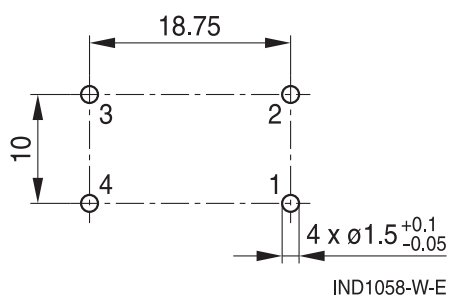
IND1499-V-E



IND2208-N-E

### B82733V (vertical version)

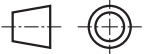
Recommended PCB layout  
(top view)



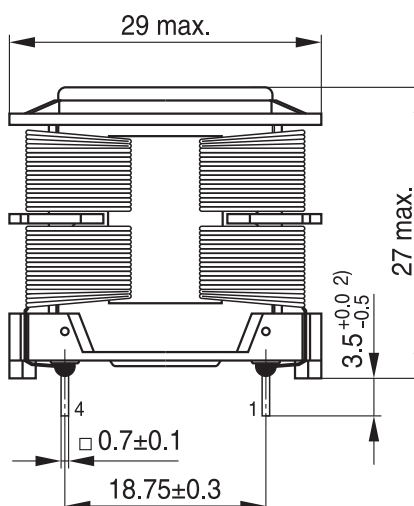
Part tolerances to ISO 2768-c / ISO 8015.

Size ISO 14405 (E)

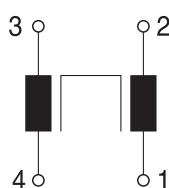
All dimensions in mm



IND2140-B-E

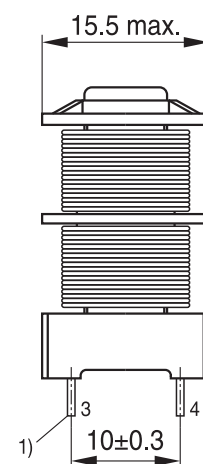


- 1) Tin tips permissible
- 2) Dimension does not include tin tip



No polarity

IND1500-X-E



IND2209-O-E

**Power line chokes**
**B82733F/V**
**Current-compensated frame core double chokes**
**Technical data and measuring conditions**

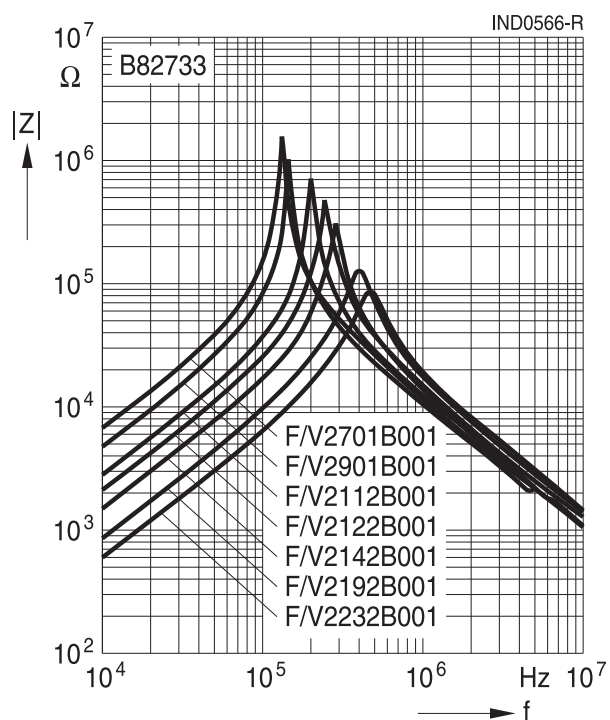
|                                                  |                                                                                                               |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Rated voltage $V_R$                              | 300 V AC (50/60 Hz)<br>500 V DC (DC-link)                                                                     |
| Test voltage $V_{test}$                          | 2000 V DC, 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.<br>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,<br>typical 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<br>(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)                                                                                    |
| Pollution degree                                 | P2 (to IEC 61558-1)                                                                                           |
| Storage conditions (packaged)                    | −25 °C ... +40 °C, ≤ 75% RH                                                                                   |
| Weight                                           | Approx. 18 g                                                                                                  |
| Approvals                                        | IEC/EN 60938-2, UL/IEC 60939-3                                                                                |

**Characteristics and ordering codes**

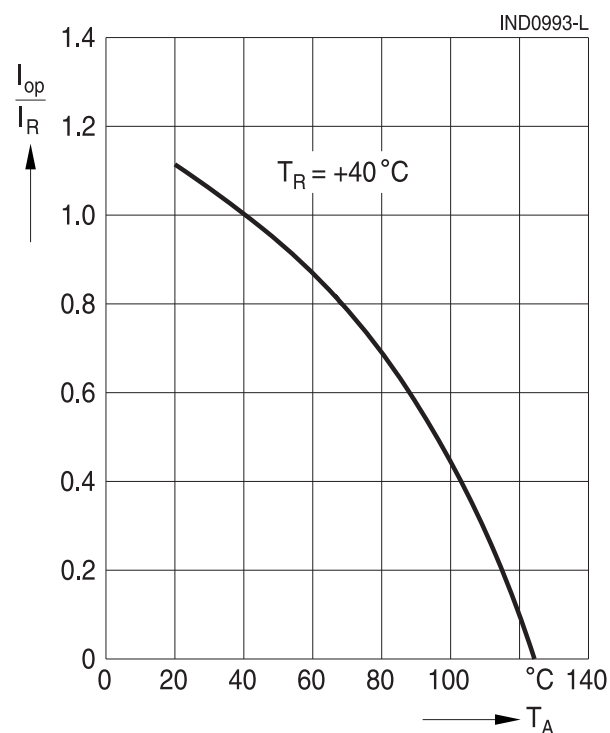
| $I_R$<br>A | $L_R$<br>mH | $L_{stray,typ}$<br>μH | $R_{typ}$<br>mΩ | Ordering code<br>horizontal | Ordering code   | Approvals |   |
|------------|-------------|-----------------------|-----------------|-----------------------------|-----------------|-----------|---|
|            |             |                       |                 |                             |                 |           |   |
| 0.7        | 100         | 2100                  | 1810            | B82733F2701B001             | B82733V2701B001 | ×         | × |
| 0.9        | 68          | 1440                  | 1100            | B82733F2901B001             | B82733V2901B001 | ×         | × |
| 1.1        | 47          | 970                   | 804             | B82733F2112B001             | B82733V2112B001 | ×         | × |
| 1.2        | 39          | 800                   | 696             | B82733F2122B001             | B82733V2122B001 | ×         | × |
| 1.4        | 27          | 550                   | 440             | B82733F2142B001             | B82733V2142B001 | ×         | × |
| 1.9        | 15          | 310                   | 279             | B82733F2192B001             | B82733V2192B001 | ×         | × |
| 2.3        | 10          | 210                   | 188             | B82733F2232B001             | B82733V2232B001 | ×         | × |

× = approval granted

**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

- Please note the recommendations in our Inductors data book (latest edition), online catalogs and in the data sheets.
  - Particular attention should be paid to the derating curves, if given. Derating applies in the case the ambient temperature in application exceeds the rated temperature of the component.
  - Ensure the operation temperature of the component in application not to exceed the maximum specified value or the upper climatic category temperature.
  - 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. 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, sealed, or varnished in customer applications:
  - Many potting, sealing, or varnishing 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, sealing or varnishing materials used attack or destroy the wire insulation, plastics, or glue.
  - The effect of the potting, sealing, or varnishing materials may change the high-frequency behavior of the components.
- Magnetic core materials such as ferrites are sensitive to direct impact. This can cause the core material to flake or lead to breakage of the magnetic core material.
- Any type of tension or pressure on the product may result in damage and affect its functionality and reliability.
  - The products are only to be attached to fixings or mounting holes provided for this purpose in accordance with the data sheet.
  - If additional mechanical forces are applied to the component, e.g., application of gap pads, it is necessary to check whether they attack or destroy any part of the component.
  - It is not permitted for the product specified in the data sheet to assume a mechanical function in the final application.
- Inductance value can drop if external metallic or magnetic parts will be put close to the coil or into the air gap of the coil or core or magnetic material.
- 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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## Important notes

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