

## Power line chokes

I core chokes

400 V AC, 0.5 and 15 A, 0.025 ... 47 mH

**Series/Type:** B82503U\*E

**Date:** July 2012

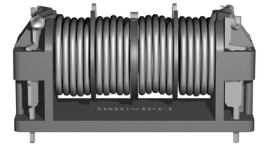
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**Rated voltage 400 V AC/450 V DC**

**Rated current 0.5 ... 15 A**

**Rated inductance 0.025 ... 47 mH**



### Construction

- I core choke
- Enamel copper wire winding
- Polycarbonate coil former (UL 94 V-0)

### Features

- Low power dissipation
- Suppression of broadband interference
- Suitable for wave soldering
- Design complies with EN 60938-2 (VDE 0565-2)
- RoHS-compatible

### Applications

- Suppression of symmetrical and asymmetrical interference
- High-performance power supplies
- Industrial applications

### Terminals

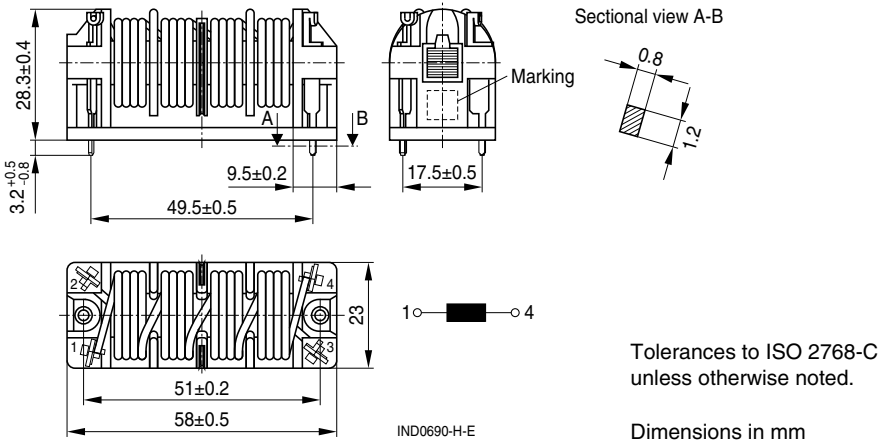
- 4 solder terminals
- Base material CuZn37
- Hot tinned

### Marking

Manufacturer, ordering code, rated inductance, rated current, date of manufacture (MM.YY)

### Delivery mode

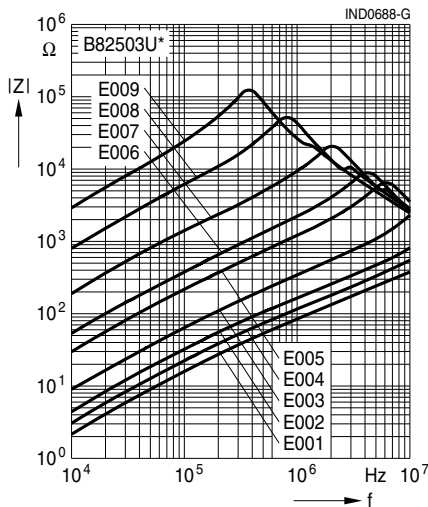
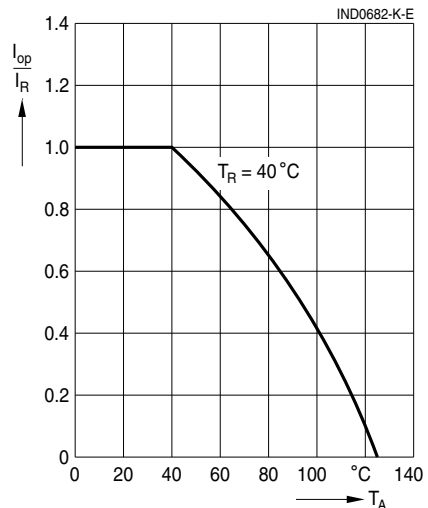
Cardboard box

**Dimensional drawing**

**Technical data and measuring conditions**

Rated voltage $V_R$	400 V AC (50/60 Hz) / 450 V DC During operation between winding and metal parts (VDE 0565-2).
Test voltage $V_{test}$	2800 V AC, 2 s (winding/core)
Rated temperature $T_R$	+40 °C
Rated current $I_R$	Referred to 50 Hz and rated temperature
Permissible operating current at 400 Hz	$0.75 \cdot I_R$
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 tolerance	±20% at +20 °C
DC resistance $R_{typ}$	Measured at +20 °C, typical values
Solderability (lead-free)	Sn96.5Ag3.0Cu0.5: +(245 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-20, test Ta)
Resistance to soldering heat (wave soldering)	+(260 ±5) °C, (10 ±1) s (to IEC 60068-2-20, test Tb)
Storage conditions (packaged)	-25 °C ... +40 °C, ≤ 75% RH
Climatic category	40/125/56 (to IEC 60068-1)

**Characteristics and ordering codes**

$I_R$ A	$L_R$ mH	$R_{typ}$ $\Omega$	Approx. weight g	Ordering code
0.5	47	10	80	B82503U0000E009
1	15	2.7	80	B82503U0000E008
2	3.3	0.7	80	B82503U0000E007
4	0.68	0.2	80	B82503U0000E006
6	0.33	0.1	85	B82503U0000E005
10	0.10	0.03	75	B82503U0000E003
10	0.05	0.025	55	B82503U0000E002
10	0.035	0.018	65	B82503U0000E004
15	0.025	0.015	50	B82503U0000E001

**Impedance  $|Z|$  versus frequency  $f$**   
 measured 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) 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.

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