Power line chokes

Current-compensated SMD ring core double chokes
250 V AC, 1.1 … 22 mH, 0.3 … 2 A, +40 °C

Series/Type: **B82720S**

Date: December 2016

EPCOS AG is a TDK Group Company.

Current-compensated ring core double chokes

SMD

Rated voltage 250 V AC
Rated inductance 1.1 ... 22 mH
Rated current 0.3 ... 2 A / +40 °C

Construction

- Current-compensated ring core double choke
- Ferrite core with epoxy coating (UL 94 V-0)
- Plastic case (UL 94 V-0)
- Silicone glue
- Sector winding

Features

- Approx. 0.7% stray inductance for differential-mode interference suppression
- Suitable for reflow soldering
- Design complies with EN 60938-2 (VDE 0565-2) and UL 1283
- RoHS-compatible

Applications

- Suppression of common-mode interferences
- Compact electronic ballasts in lamps
- Compact switch-mode power supplies

Terminals

- Base material CuSn6
- Layer composition Ni, Sn
- Hot-dipped

Marking

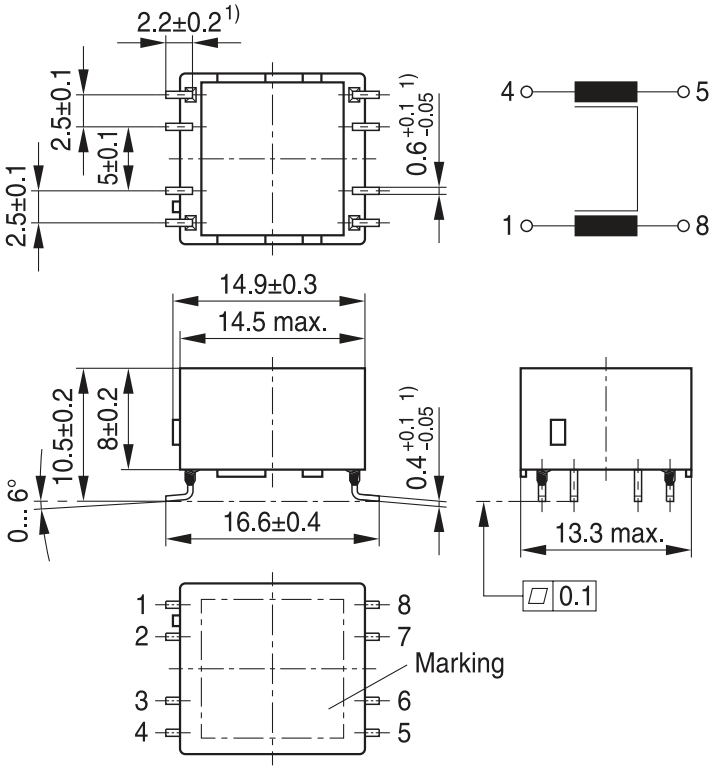
- Marking on component:
  Product brand, ordering code, rated inductance, rated current, graphic symbol, rated voltage, date of manufacture (YYWWD)
- Minimum data on reel:
  Product brand, ordering code, rated inductance, rated current, quantity, date of packing

Delivery mode and packing unit

- 24-mm blister tape, wound on 330-mm ∅ reel
- Packing unit: 250 pcs./reel

SMD

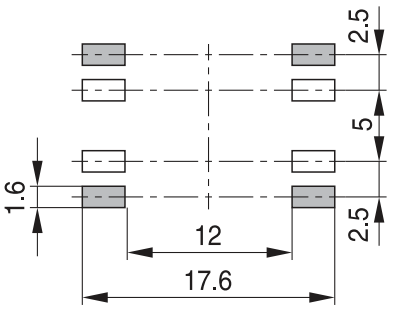
Dimensional drawing and pin configuration



1) Soldering area

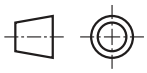
IND0243-T-E

Layout recommendation



IND0244-2

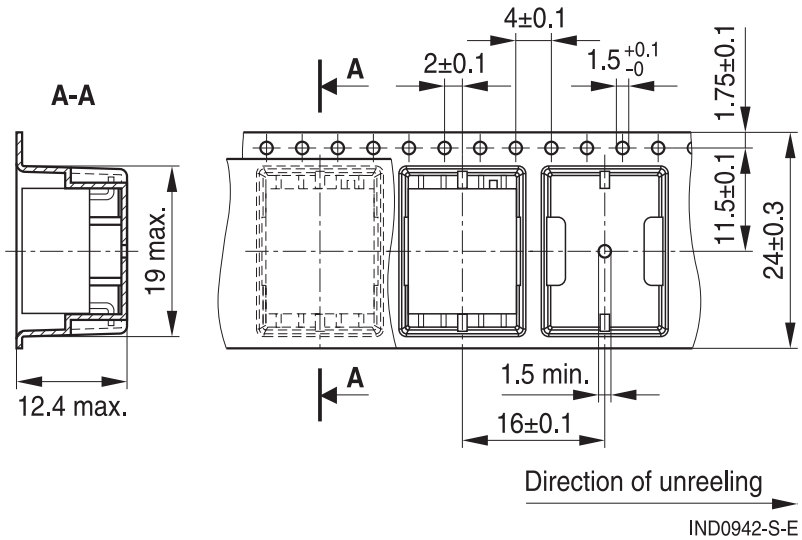
Part tolerances to ISO 2768-cL / ISO 8015.
Size ISO 14405 Ⓔ
All dimensions in mm



IND1276-L-E

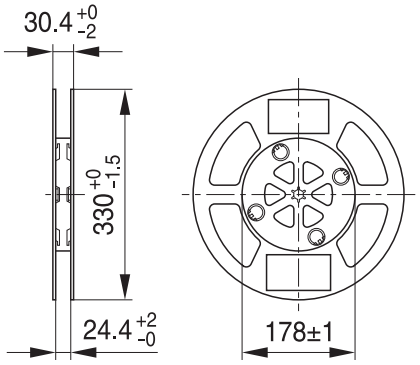
Taping and packing

Blister tape



IND0942-S-E

Reel



IND0941-R

All dimensions in mm

Current-compensated ring core double chokes

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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, typical values
DC resistance R_{typ}	Measured at +20 °C, typical values, specified per winding
Solderability (lead free)	Sn96.5Ag3.0Cu0.5: +(245 ±3) °C, (3 ±0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-58, test Td_1, method 1)
Resistance to soldering heat	+(260 ±5) °C, (10 ±1) s (to IEC 60068-2-58, test Td_2, method 1)
Climatic category	40/125/56 (to IEC 60068-1)
Storage conditions (packaged)	–25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 2.5 g

Characteristics and ordering codes

I_R A	L_R mH	$L_{stray,typ}$ µH	R_{typ} mΩ	Ordering code
0.3	22	130	1500	B82720S2301N042
0.3	12	80	1100	B82720S2301N040
0.6	4.4	30	400	B82720S2601N040
1.0	3.0	20	220	B82720S2102N040
1.5	1.6	10	110	B82720S2152N040
2.0	1.1	6	65	B82720S2202N040

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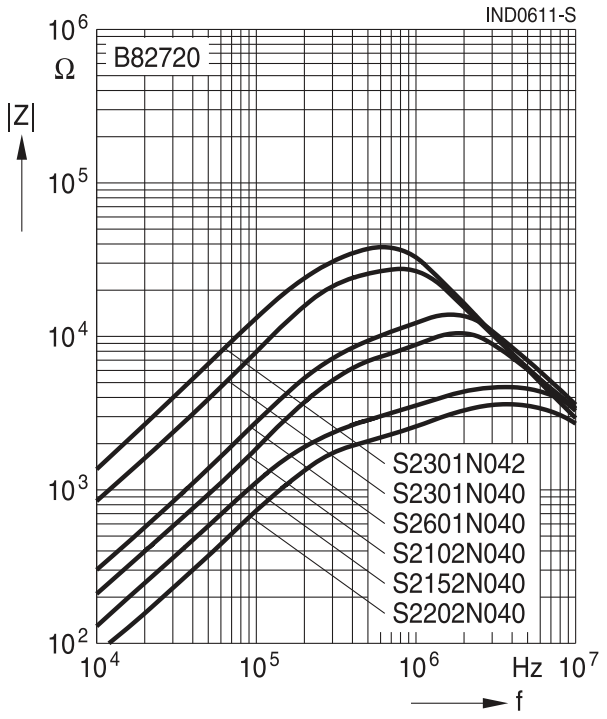
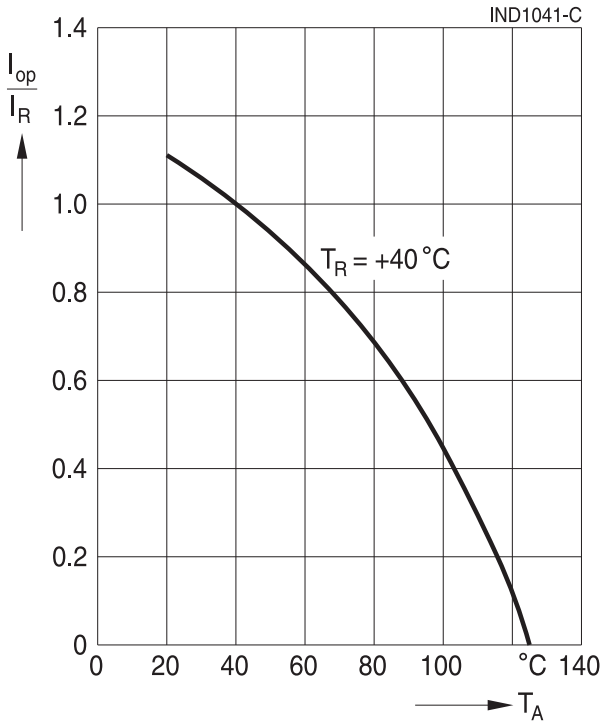
Impedance |Z| versus frequency f
measured with windings in parallel at +20 °C, typical values



Current derating I_{op}/I_R versus temperature T_A



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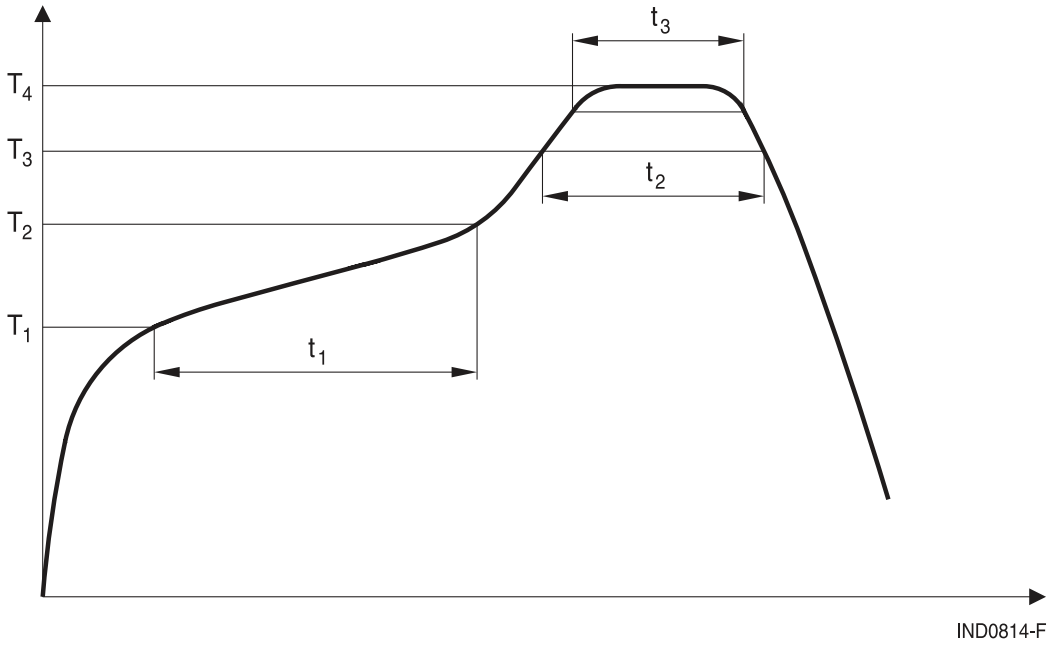
Recommended reflow soldering profile

Pb-free solder material (based on JEDEC J-STD 020D)



T_1 °C	T_2 °C	T_3 °C	T_4 °C	t_1 s	t_2 s	t_3 s
150	200	217	245	< 110	< 90	< 30 @ T_4 –5 °C

Time from +25 °C to T_4: max 300 s
Max. numbers of reflow cycles: 3

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.
  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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