SMD common-mode chokes

Current-compensated SMD ring core double chokes
0.88 mH, 1.8 A / + 40 °C

Series/Type: **B82720S0**

Date: November 2021

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Current-compensated SMD ring core double chokes

Rated current 1.8 A / +40 °C
Nominal inductance 0.88 mH



Construction

- Current−compensated ring core double choke
- Ferrite core with epoxy coating (UL 94 V−0)
- Plastic case (UL 94 V−0)
- Silicon glue
- Sector windings
- SMD terminals

Features

- Approx. 0.8% stray inductance for differential−mode interference suppression
- Low height and compact design
- Suitable for reflow soldering
- RoHS-compatible

Applications

- Suppression of common−mode interferences
- Compact switch−mode applications
- Low voltage applications
- DC/DC power converters

Terminals

- Base material phosphor bronze
- Layer composition Ni, Sn

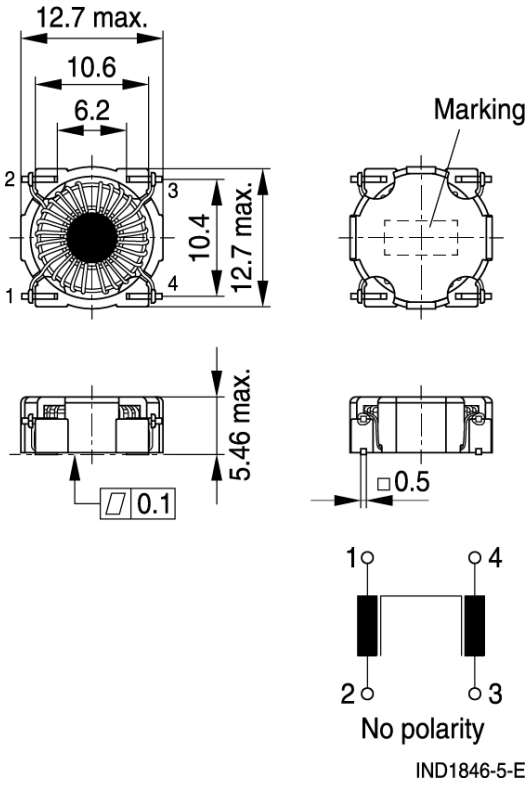
Marking

- Marking on component:
  Product brand (EPCOS), ordering code,
  graphic symbol, date of manufacture (YYWWD), production place identification code
- Minimum data on reel:
  Product brand (EPCOS), ordering code
  quantity, date of packing

Delivery mode and packing unit

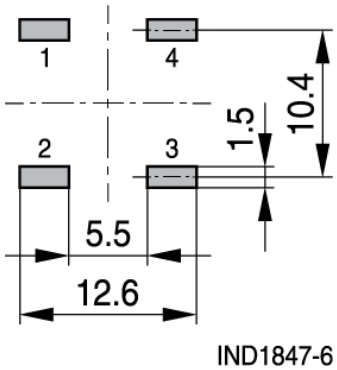
- 24-mm blister tape, wound on 330-mm Ø reel
- Packing unit: 500 pcs./reel

Dimensional drawing and pin configuration



IND1846-5-E

Layout recommendation (top view)



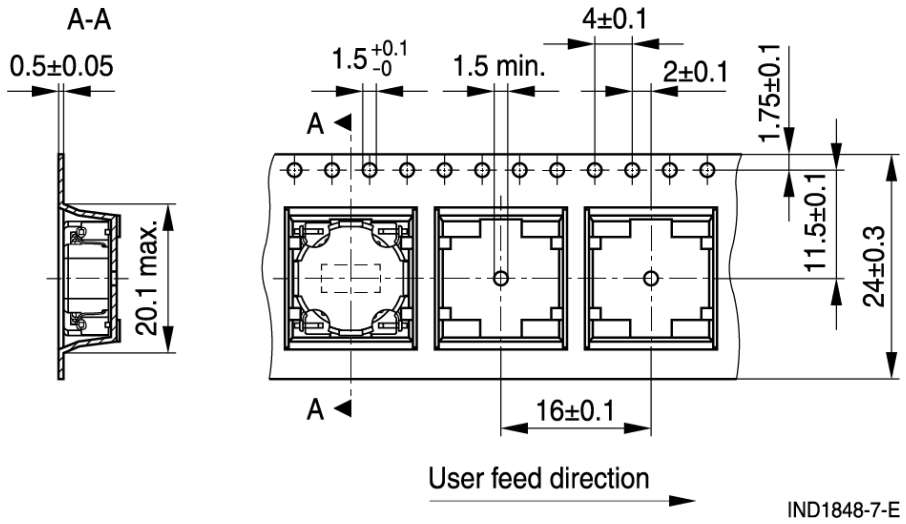
IND1847-6

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

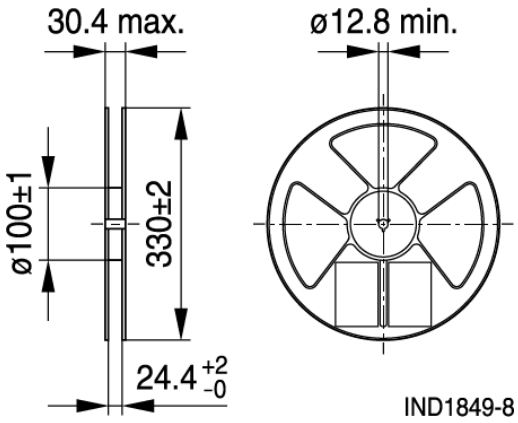
IND1276-L-E

Taping and packing

Blister tape



Reel



Dimensions in mm

Blister tape and reel are designed to IEC 60286-3

Technical data and measuring conditions

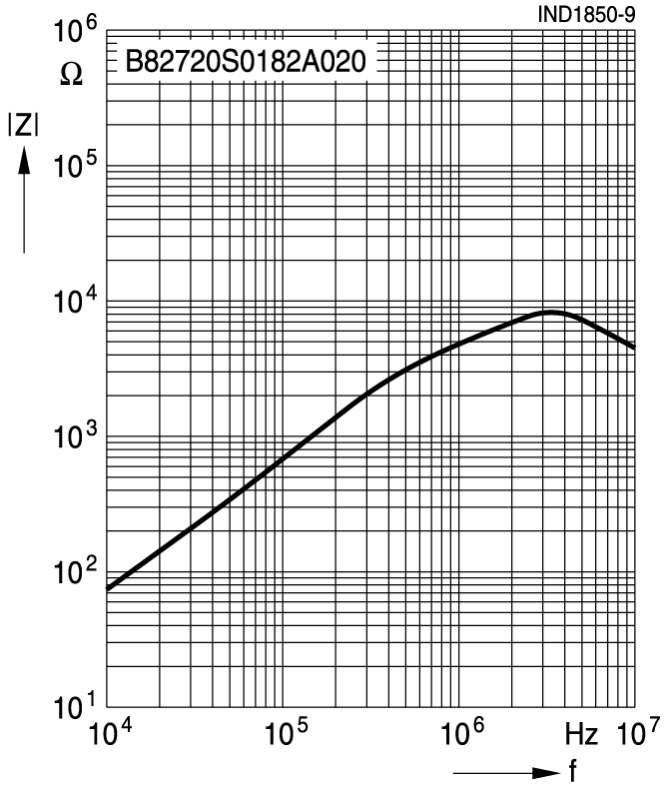
Rated Voltage V_R	48 V AC (50/60 Hz) / 80 V DC
Test voltage V_{test}	1000 V_{RMS}, 2 s (line/line)
Rated temperature T_R	+40 °C
Rated current I_R	Referred to DC or 50/60 Hz and rated temperature (free−air convection cooling)
Nominal inductance L_N	Measured with Agilent 4284A at 100 kHz, 0.1 mA, +20 °C Inductance is specified per winding
Inductance tolerance	±35% 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 100 kHz, 5 mA, +20 °C, typical value
DC resistance R_{typ}	Measured at +20 °C, typical value, 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 to +40 °C, ≤ 75% RH
Weight	Approx. 2 g

Characteristics and ordering codes

I_R A	L_N mH	$L_{stray,typ}$ µH	R_{typ} mΩ	Ordering code
1.8	0.88	7	90	B82720S0182A020

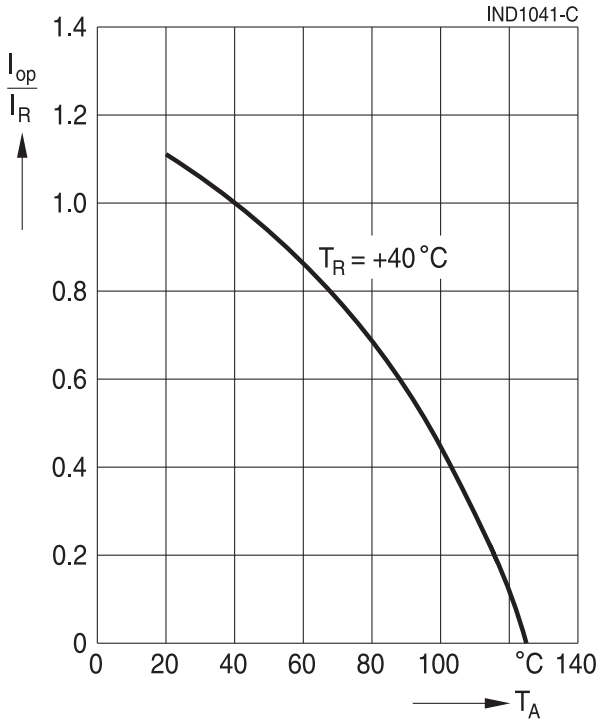
Impedance |Z| versus frequency f

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



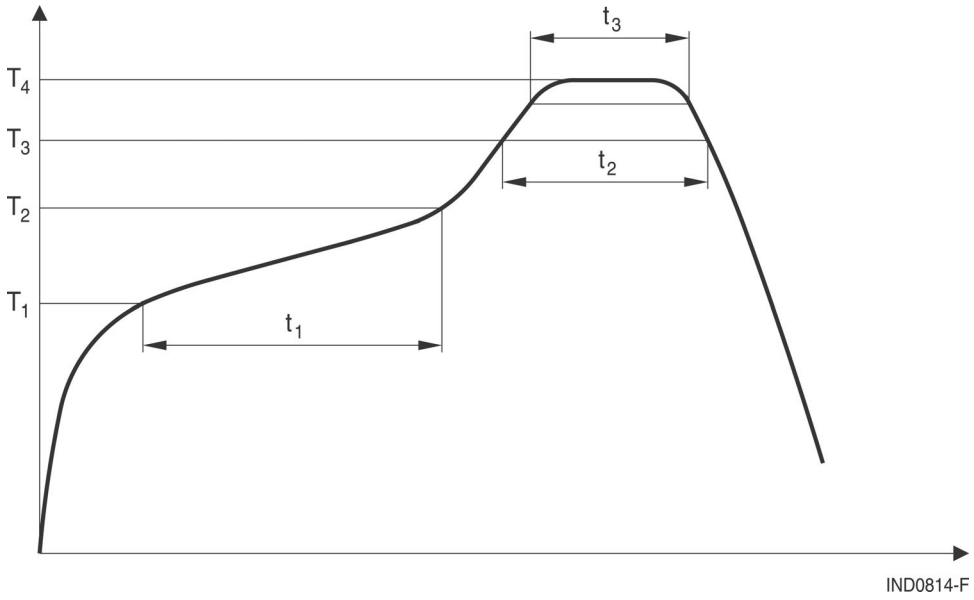
Current derating I_{op}/I_R versus temperature T_A

rated temperature = +40 °C



Recommended reflow soldering profile

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



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 at 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, wire insulation, plastics or glue.
  - The effect of the potting material can change the high-frequency behaviour of the components.
  - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component.
    Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / 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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