Data and signal line chokes

Common-mode chokes, ring core
4.7 ... 68 mH, 200 ... 700 mA, +60 °C

Series/Type: **B82794C0**

Date: June 2025

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Rated voltage 42 V AC/80 V DC
Rated current 200 ... 700 mA
Nominal inductance 4.7 ... 68 mH

Construction

- Current-compensated ring core double choke
- Ferrite core
- Plastic case (UL 94 V-0)
- Silicone potting
- Bifilar winding
- Colors of material may vary

Features

- Suitable for reflow soldering
- RoHS-compatible

Function

Suppression of asymmetrical interference coupled in on lines, whereas data signals up to some MHz can pass unaffectedly.

Applications

- Telecom applications
- RF equipment

Terminals

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

Marking

- Marking on component:
  Product brand, ordering code,
  nominal inductance, graphic symbol,
  date of manufacture (YYWWD), production place identification code (optional)
- Minimum data on reel:
  Manufacturer, ordering code,
  L value, current, quantity, date of packing

Delivery mode and packing unit

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

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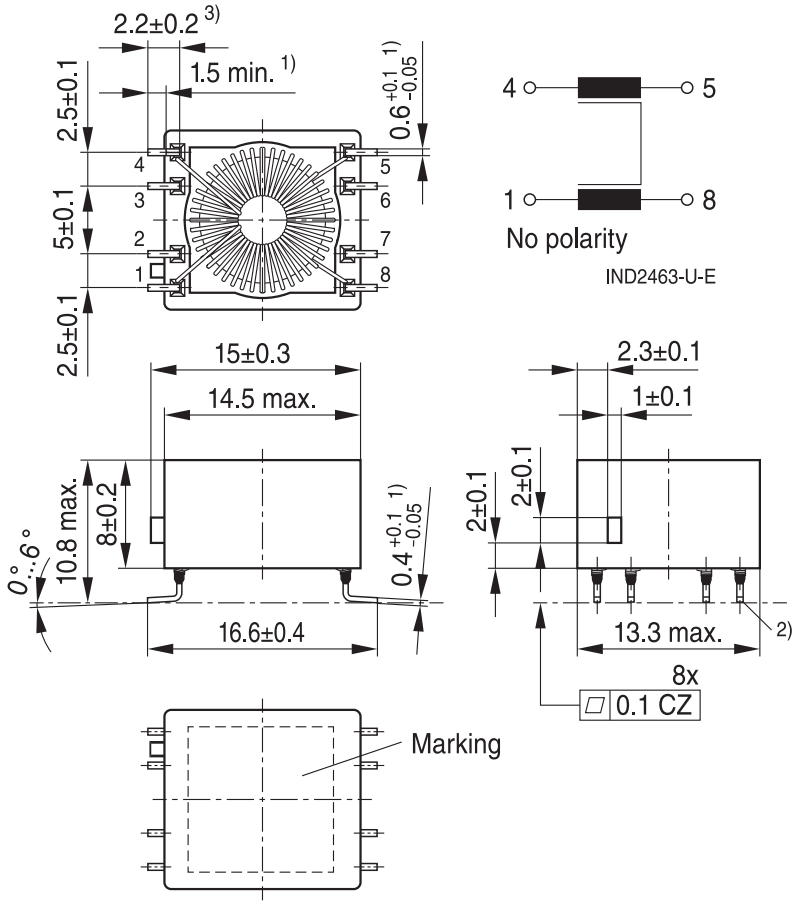
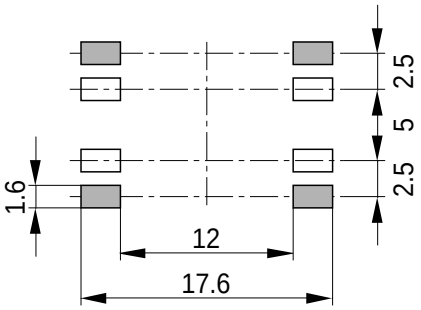
Dimensional drawing and pin configuration



1) Soldering area
2) Tin tips permissible
3) Dimension does not include tin tip

IND2136-7-E

Layout recommendation

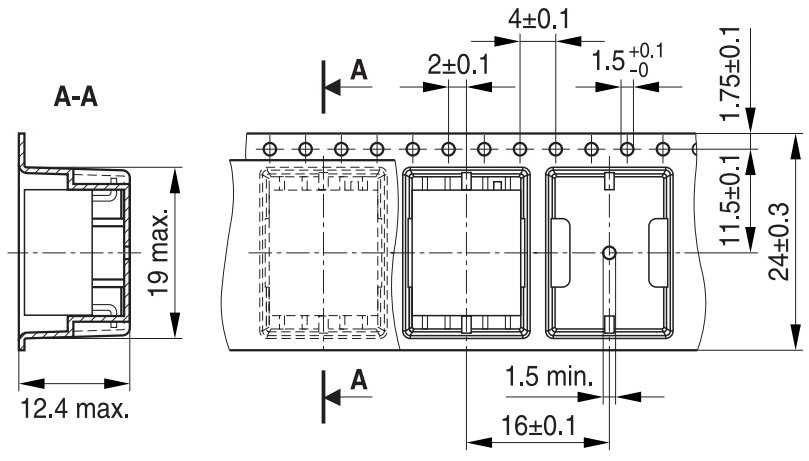


Part tolerances to ISO 2768-c / ISO 8015.
Size ISO 14405 (E)
All dimensions in mm

IND2140-B-E

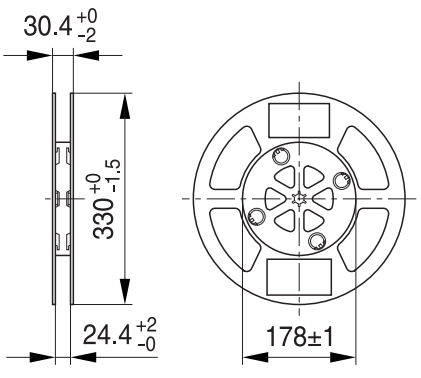
Taping

Blister tape



Dimensions in mm

Reel



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Technical data and measuring conditions

Rated voltage V_R	42 V AC (50/60 Hz) / 80 V DC
Rated temperature T_R	+60 °C
Rated current I_R	Referred to 50 Hz and rated temperature
Nominal inductance L_N	Measured with Agilent 4284A at 10 kHz, 50 mV, +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, 50 mV, +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. 2.7 g

Characteristics and ordering codes

L_N mH	$L_{stray,typ}$ nH	I_R mA	R_{typ} mΩ	V_{test} V DC, 2 s	Ordering code
4.7	350	700	500	750	B82794C0475N465
10	450	600	700	750	B82794C0106N465
28	800	400	1200	750	B82794C0286N465
47	1200	300	2800	750	B82794C0476N465
68	1300	200	3400	750	B82794C0686N465

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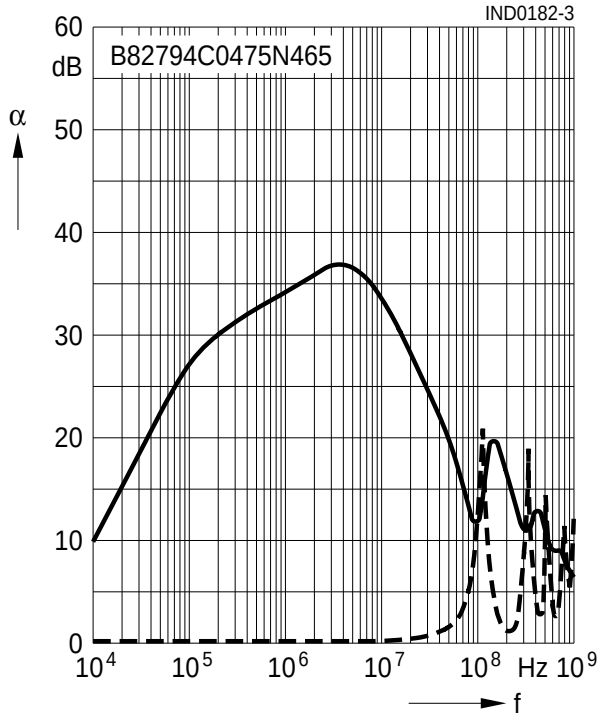
Insertion loss α (typical values at |Z| = 50 Ω, +20 °C)

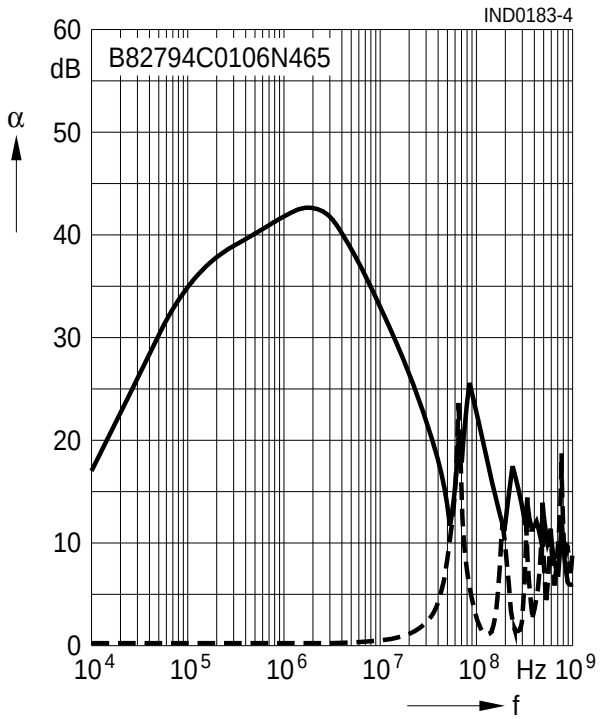
——————— asymmetrical, all branches in parallel (common mode)

- - - - - - - - - - - - symmetrical (differential mode)

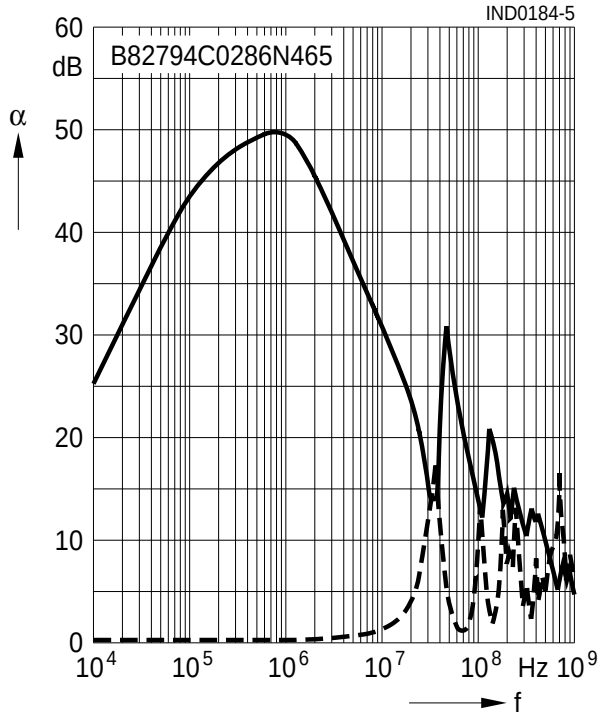
L_N = 4.7 mH



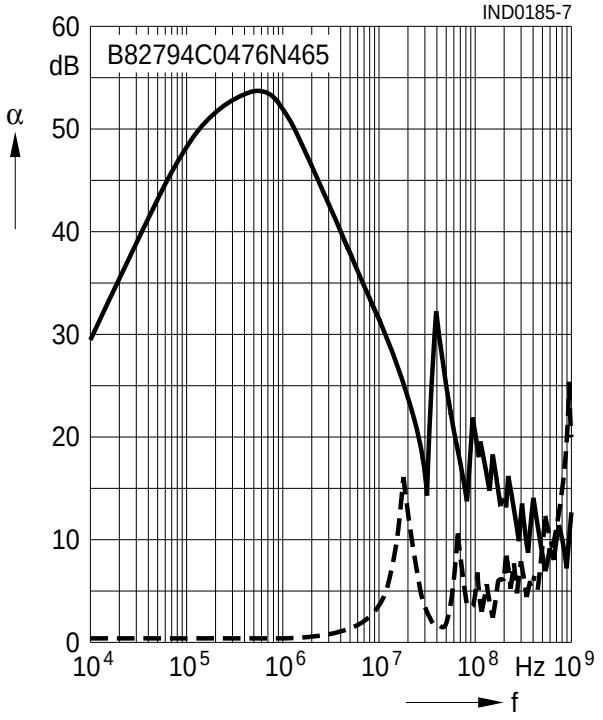
L_N = 10 mH



L_N = 28 mH



L_N = 47 mH



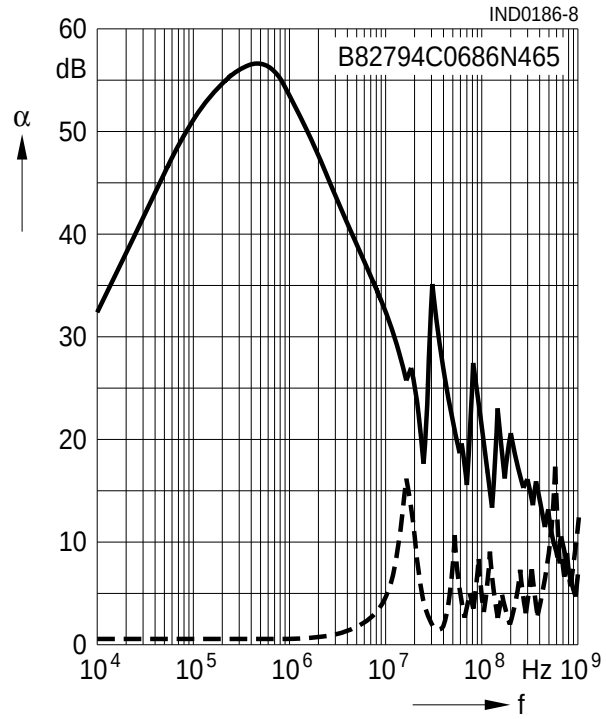
SMD

Insertion loss α (typical values at |Z| = 50 Ω, +20 °C)

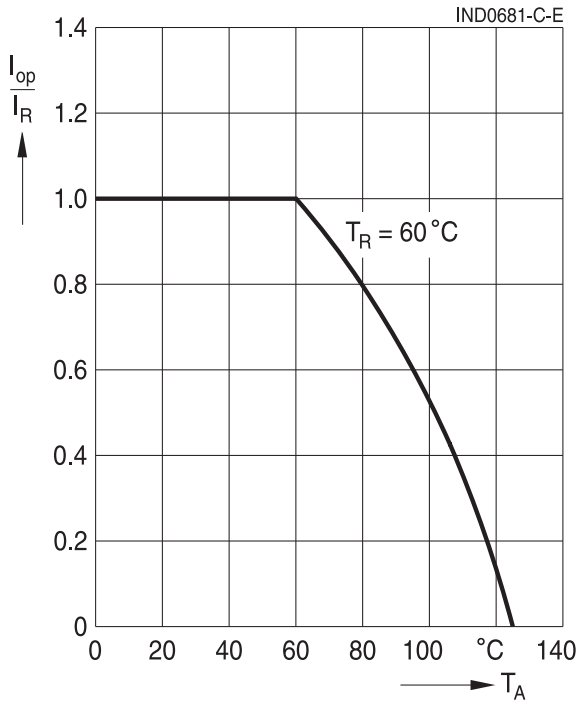
——————— asymmetrical, all branches in parallel (common mode)

- - - - - - - - - - - - symmetrical (differential mode)

L_N = 68 mH



Current derating I_{op}/I_R versus ambient temperature



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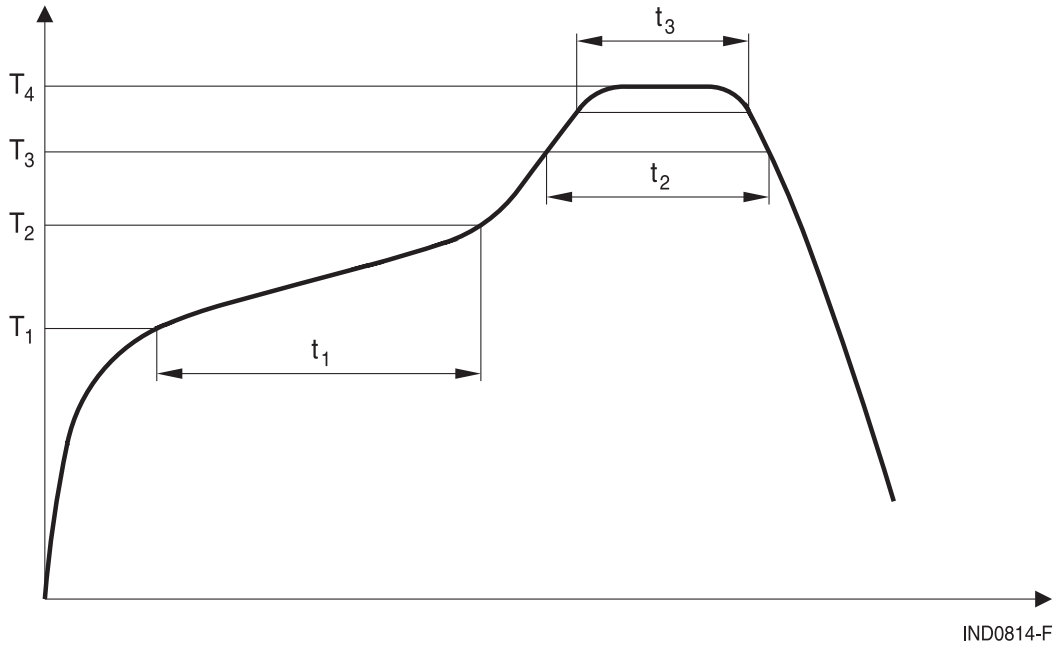
Recommended reflow soldering curve

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 @ T_4 –5 °C

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

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 pins only. Temperatures specified in relation to reflow soldering can also refer to the pins or terminals for products with larger thermal mass, as in such cases, the temperature difference to the top of the component is too big (e.g., high proportion of core within the component).
- 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.

Release 2024-08-08

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3. **The warnings, cautions and product-specific notes must be observed**.

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