Data and signal line chokes

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

Series/Type: **B82794C0**

Date: January 2010

EPCOS AG is a TDK Group Company.

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

Construction

- Current-compensated ring core double choke
- Ferrite core
- LCP case (UL 94 V-0)
- Silicone potting
- Bifilar winding

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:
  Manufacturer, ordering code, inductance, graphic symbol, date of manufacture (YYWWD)
- 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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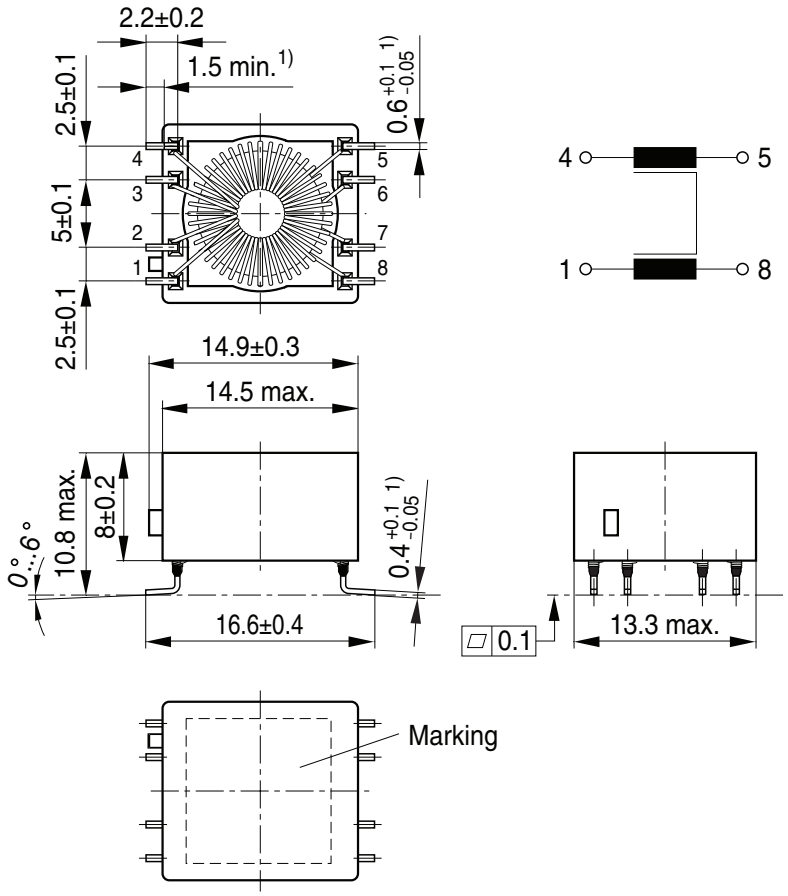
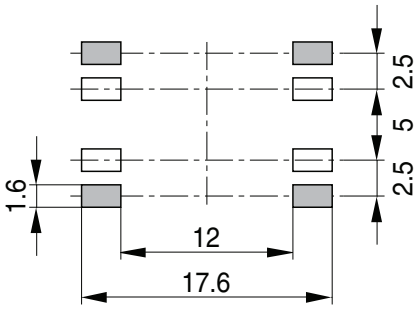
Dimensional drawing and pin configuration



1) Soldering area

IND0180-P-E

Layout recommendation

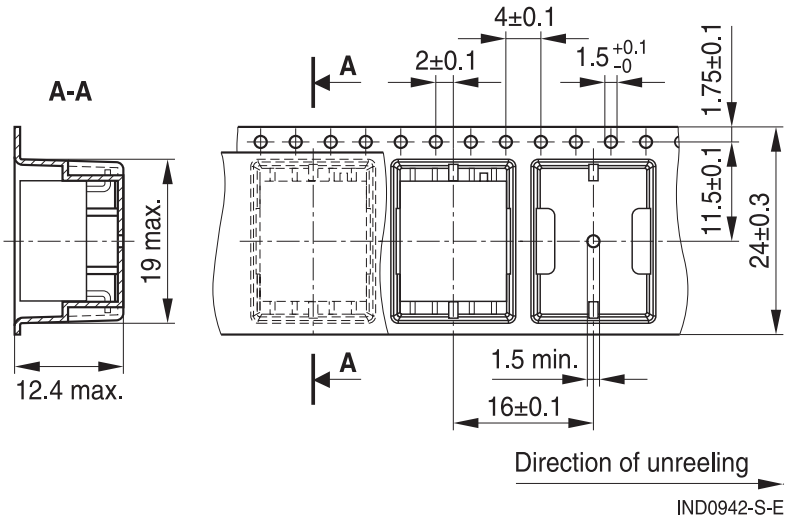


IND0181-T

Dimensions in mm

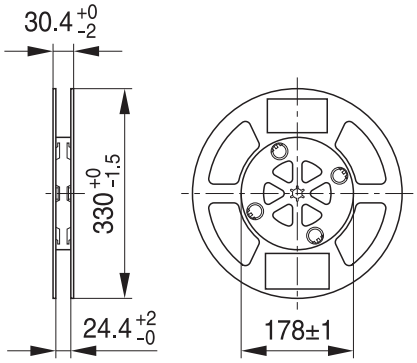
Taping and packing

Blister tape



IND0942-S-E

Reel



IND0941-R

Dimensions in mm

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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
Rated inductance L_R	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 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-58)
Resistance to soldering heat	(260 ±5) °C, (10 ±1) s (to IEC 60068-2-58)
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_R 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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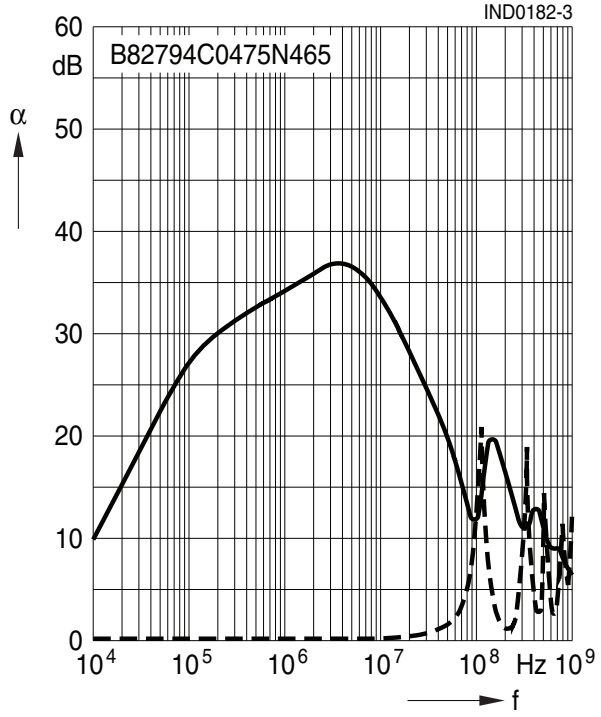
Insertion loss α (typical values at |Z| = 50 Ω, 20 °C)

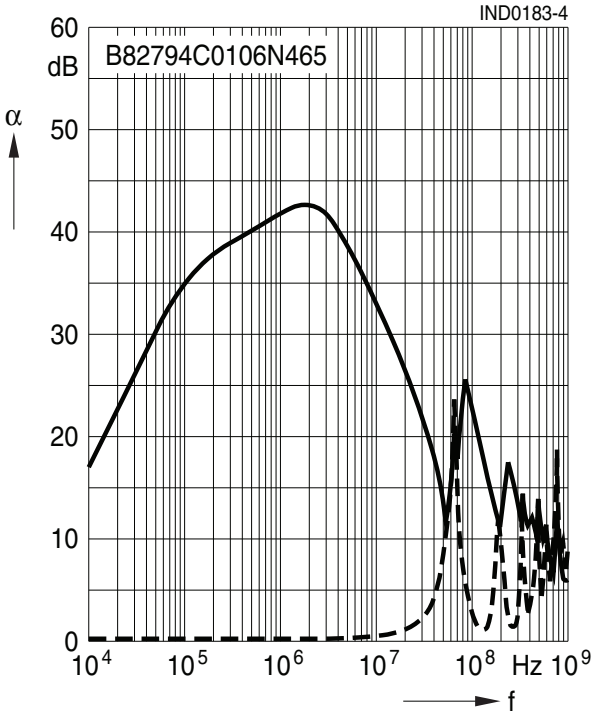
——— asymmetrical, all branches in parallel (common mode)

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

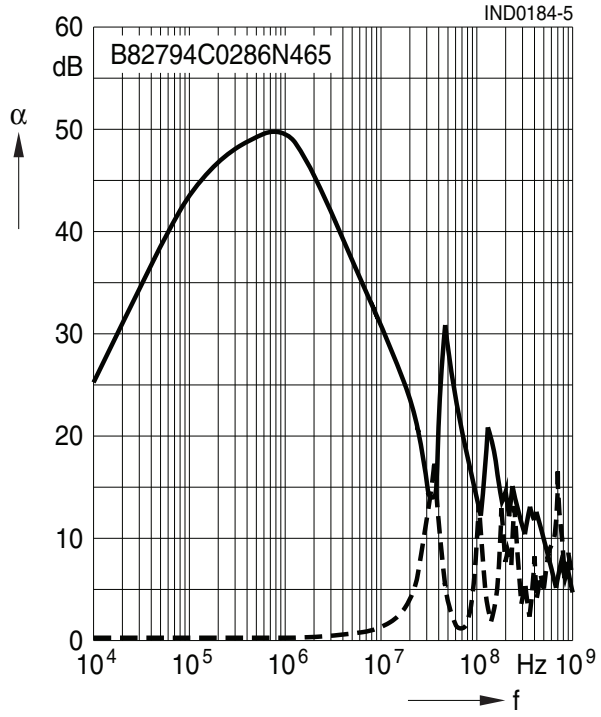
L_R = 4.7 mH



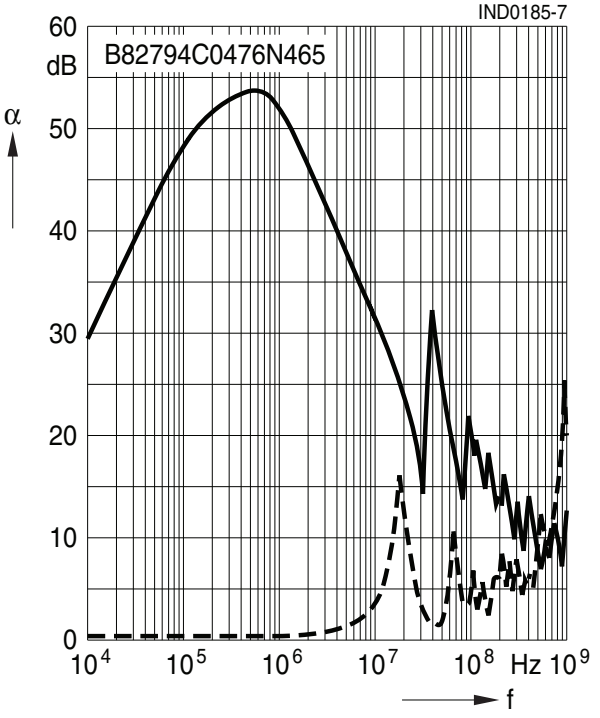
L_R = 10 mH



L_R = 28 mH



L_R = 47 mH



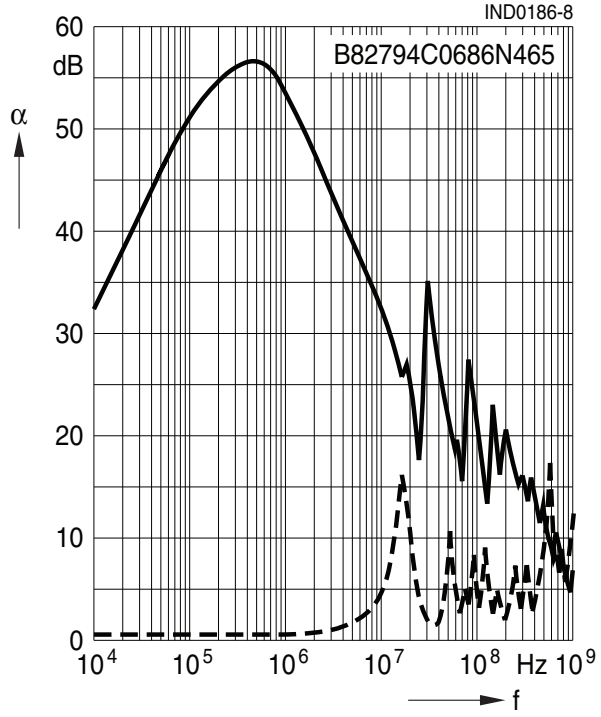
SMD

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

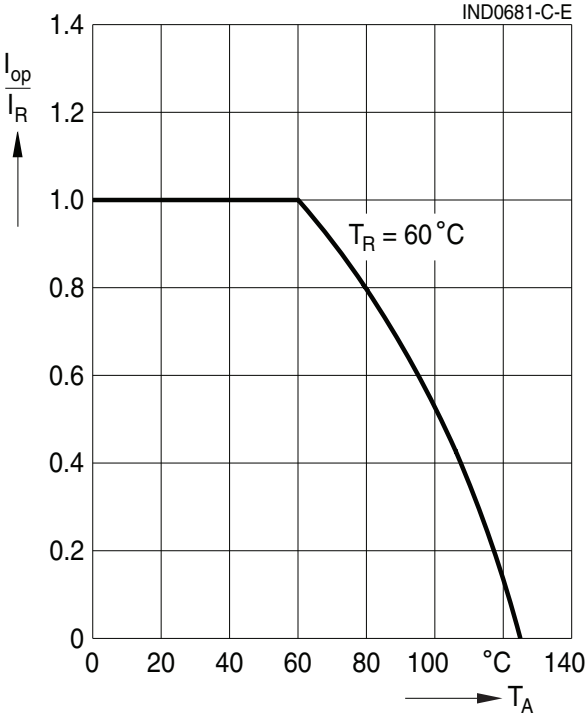
——— asymmetrical, all branches in parallel (common mode)

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

L_R = 68 mH



Current derating I_{op}/I_R versus ambient temperature



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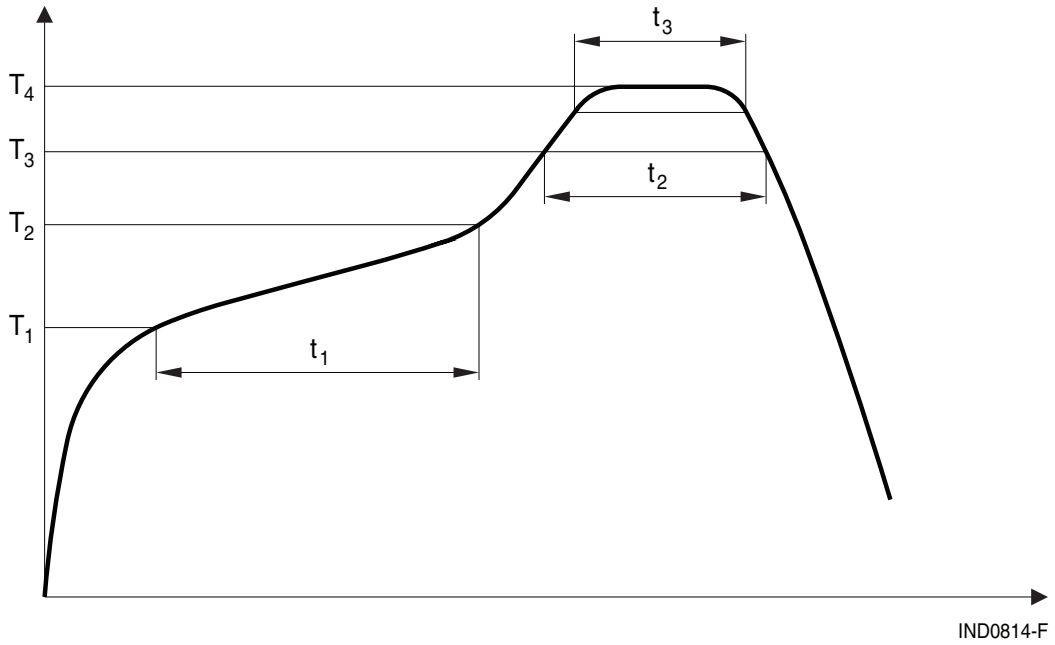
Recommended reflow soldering curve

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



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) 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.
- 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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