Data and signal line chokes

Common-mode chokes, ring core
4.7 … 50 mH, 100 … 600 mA, 60 °C

Series/Type: **B82792C0**

Date: April 2008

EPCOS AG is a TDK Group Company.

SMD

Rated voltage 42 V AC/80 V DC
Rated inductance 4.7 mH to 50 mH
Rated current 100 mA to 600 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 interfaces
- ISDN systems

Terminals

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

Marking

- Marking on component:
  Manufacturer, ordering code, inductance, date of manufacture (YYWWD)
- Minimum data on reel:
  Manufacturer, ordering code, L value and tolerance, quantity, date of packing

Delivery mode and packing unit

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

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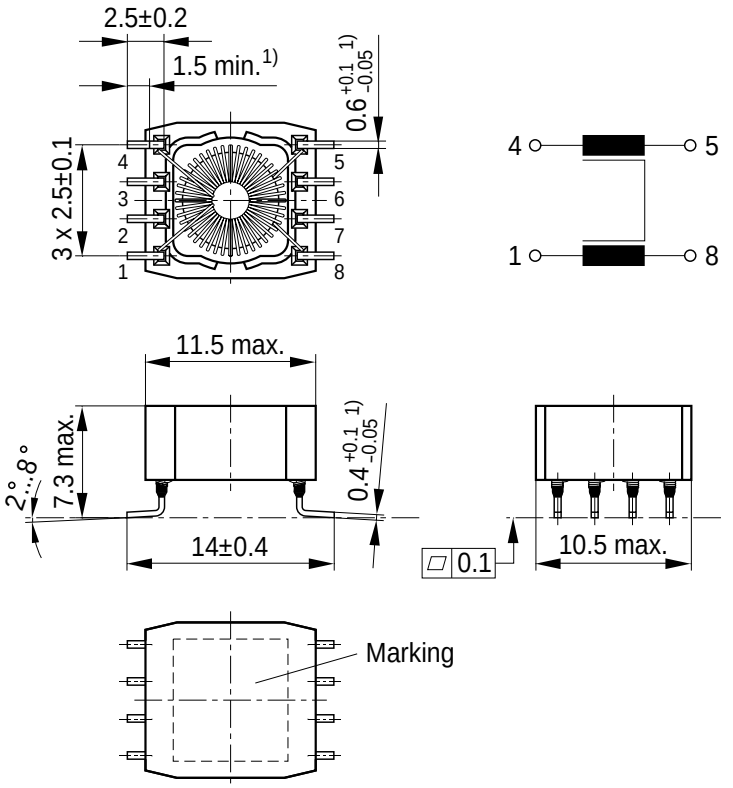
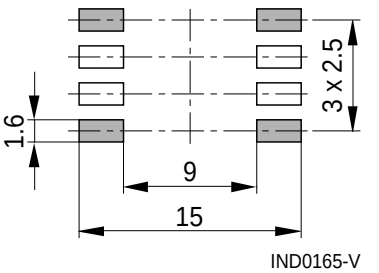
Dimensional drawing and pin configuration



1) Soldering area

IND0164-H-E

Layout recommendation

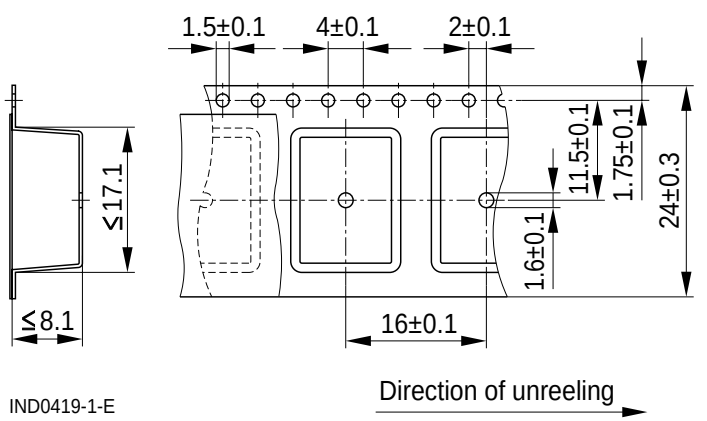


IND0165-V

Dimensions in mm

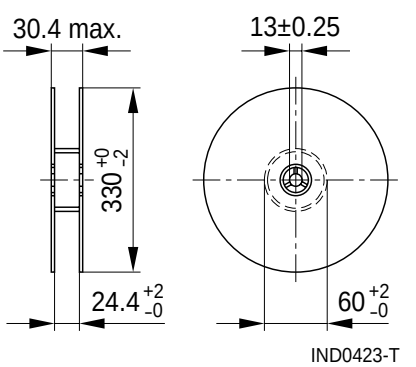
Taping and packing

Blister tape



IND0419-1-E

Reel



IND0423-T

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. 1.3 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	240	600	400	750	B82792C0475N365
6.8	300	600	500	750	B82792C0685N365
10	350	500	1100	750	B82792C0106N365
22	700	200	1600	750	B82792C0226N365
33	850	100	2000	750	B82792C0336N365
50	1100	100	2600	750	B82792C0506N365

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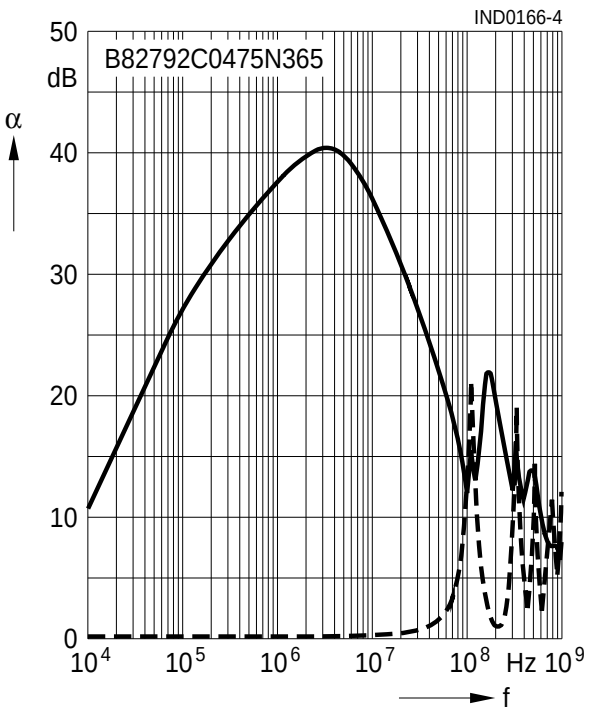
Insertion loss α (typical values at |Z| = 50 Ω, 20 °C)

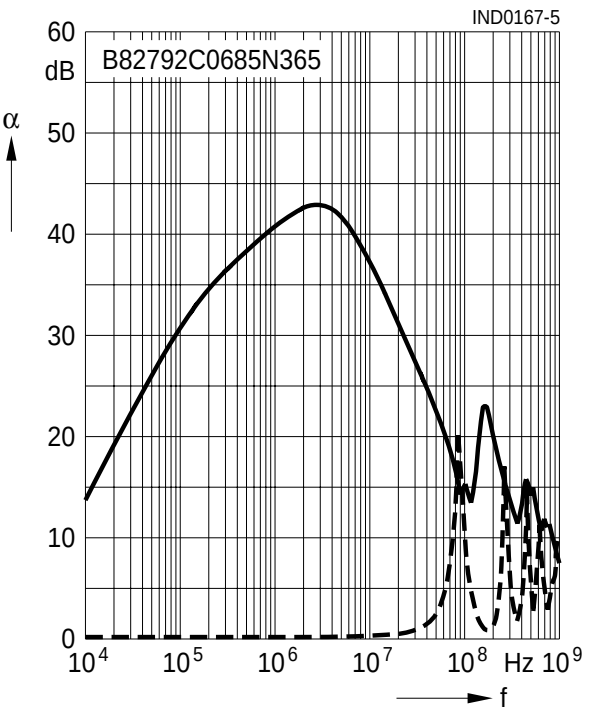
——— asymmetrical, all branches in parallel (common mode)

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

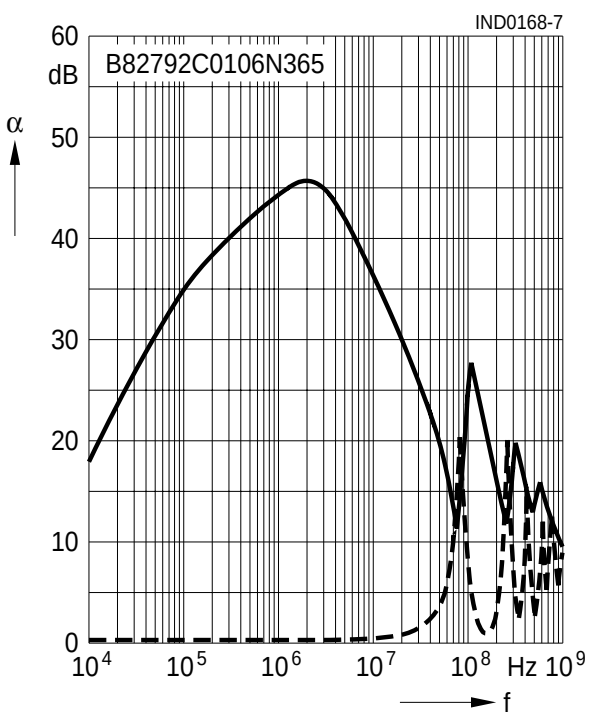
L_R = 4.7 mH



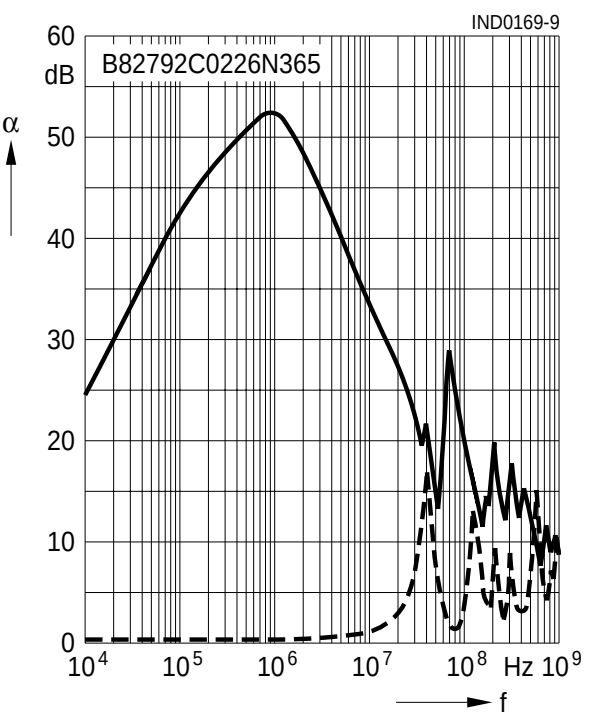
L_R = 6.8 mH



L_R = 10 mH



L_R = 22 mH



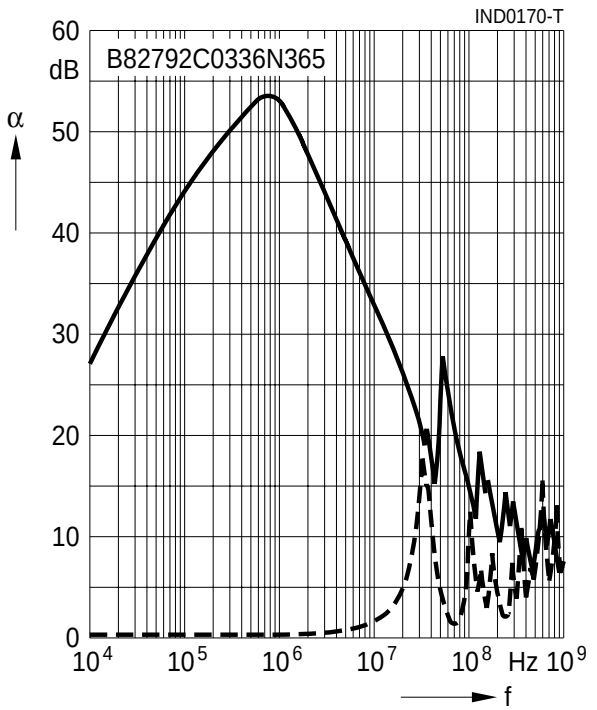
SMD

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

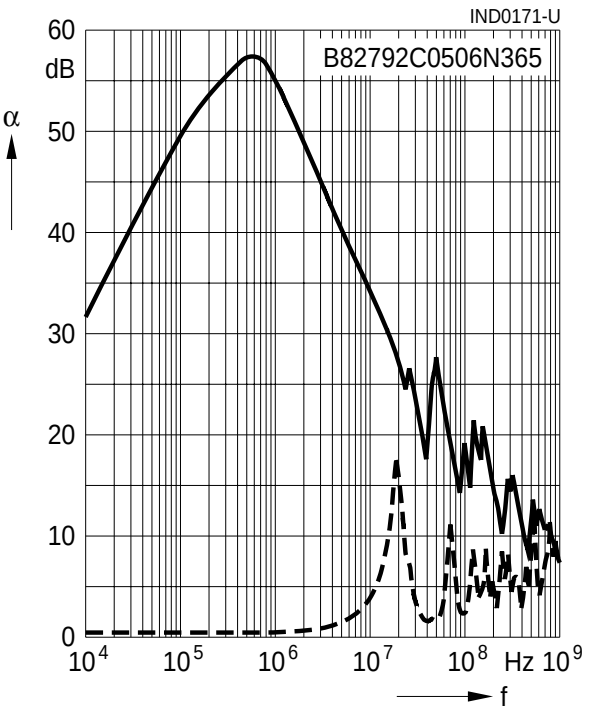
——— asymmetrical, all branches in parallel (common mode)

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

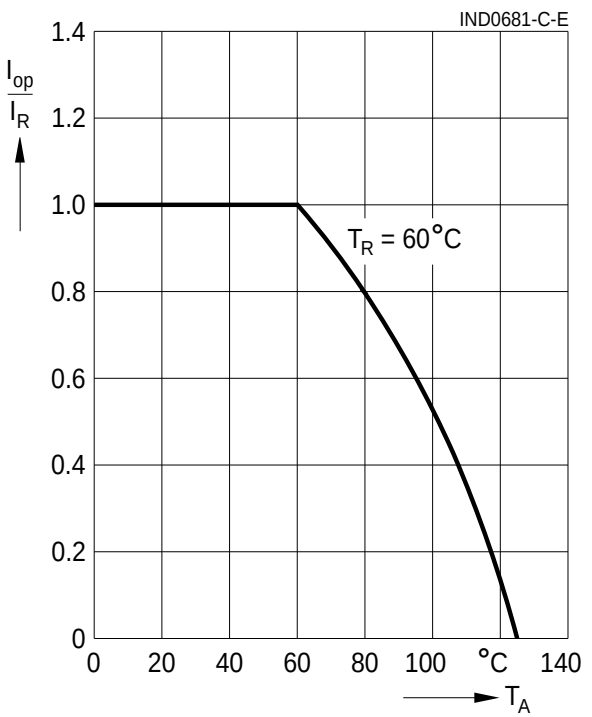
L_R = 33 mH



L_R = 50 mH



Current derating I_{op}/I_R versus ambient temperature



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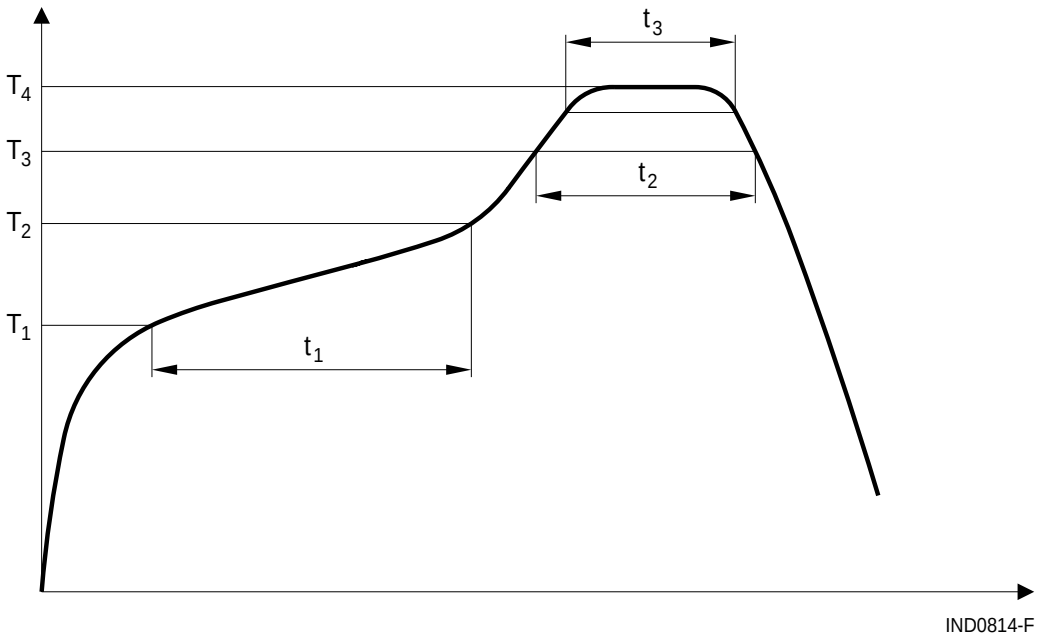
Recommended reflow soldering curve

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	250	< 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.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.** As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

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