

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

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

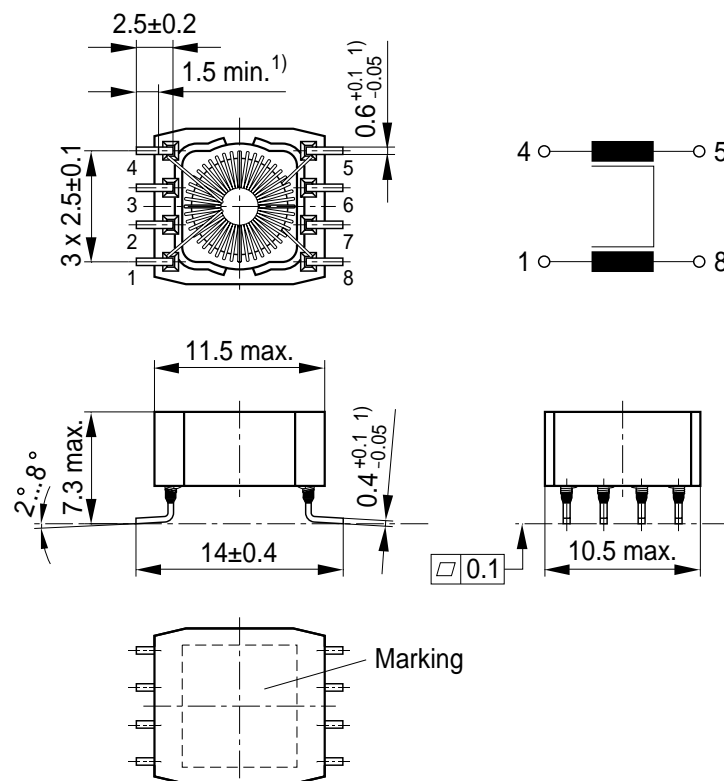
- Marking on component:
Manufacturer, ordering code, inductance, date of manufacture (YYWWD)
- Minimum data on reel:
Manufacturer, ordering code, L value and tolerance, quantity, date of packing

Delivery mode and packing unit

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

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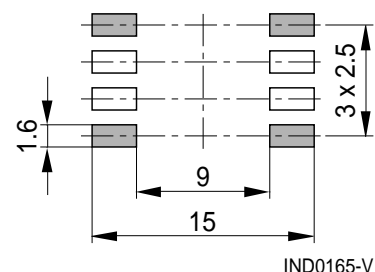
Dimensional drawing and pin configuration



1) Soldering area

IND0164-H-E

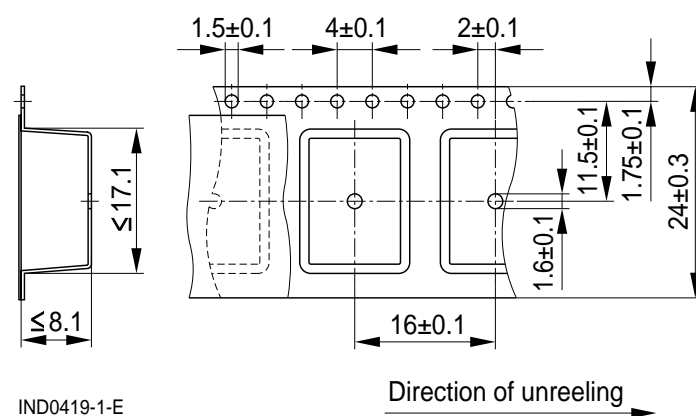
Layout recommendation



Dimensions in mm

Taping and packing

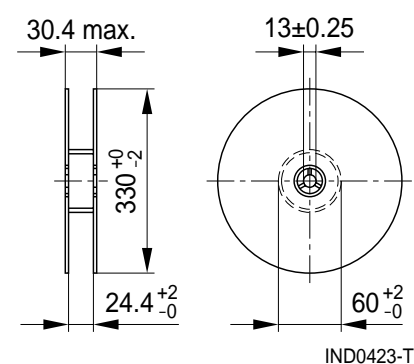
Blister tape



IND0419-1-E

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 |
| 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 $L_{\text{stray,typ}}$ | 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 | $L_{\text{stray,typ}}$ 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 |

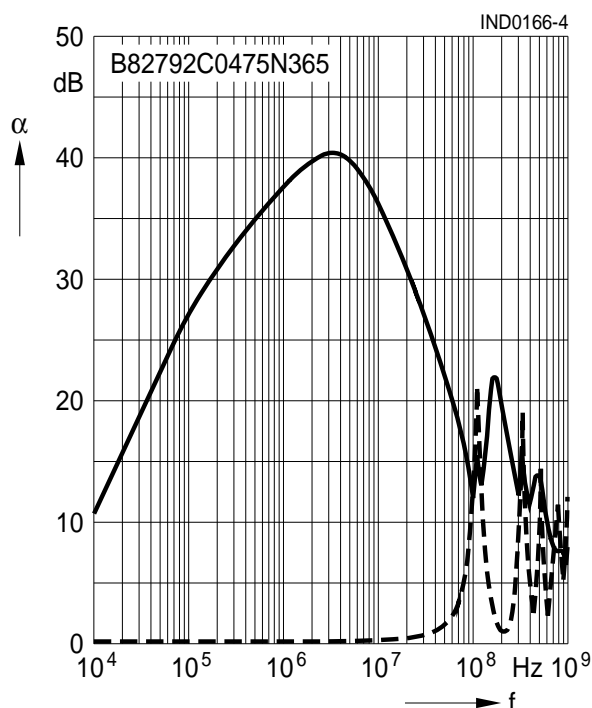
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Insertion loss α (typical values at $|Z| = 50 \Omega$, 20 °C)

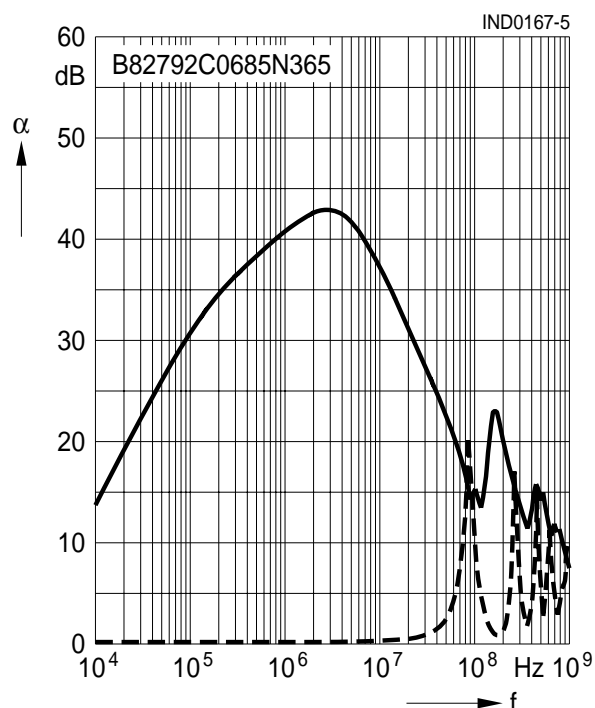
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

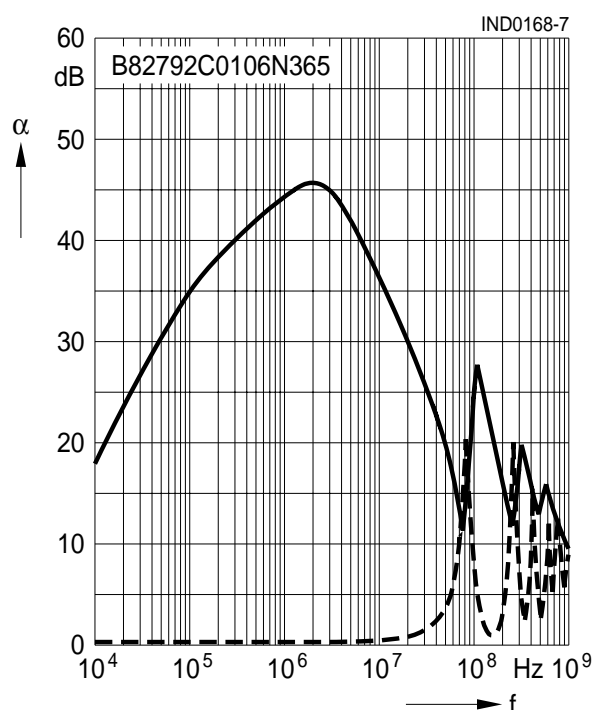
$L_R = 4.7 \text{ mH}$



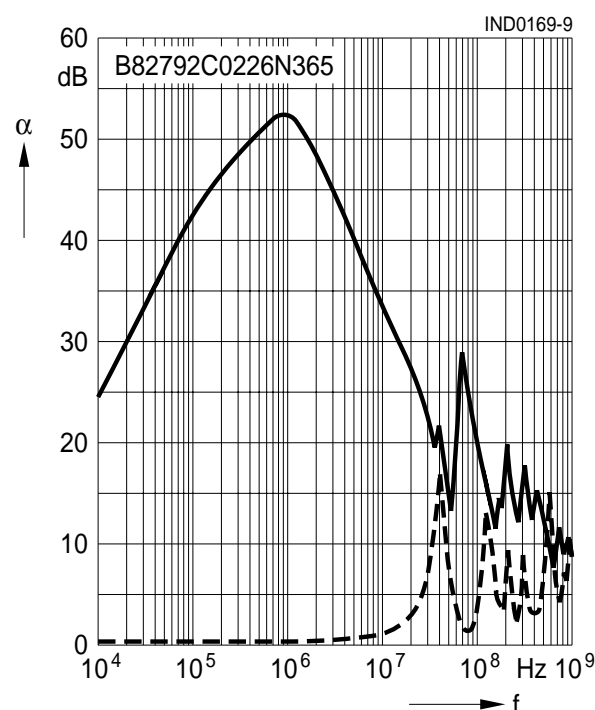
$L_R = 6.8 \text{ mH}$



$L_R = 10 \text{ mH}$



$L_R = 22 \text{ mH}$



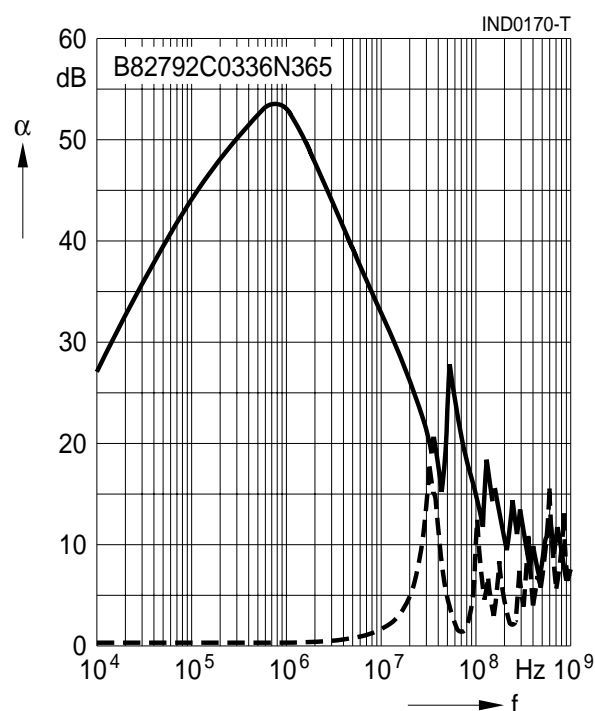
SMD

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

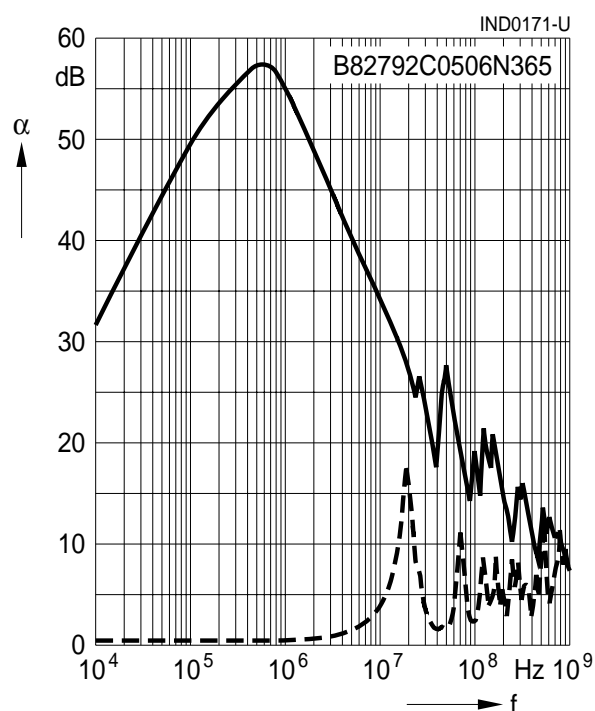
———— asymmetrical, all branches in parallel (common mode)

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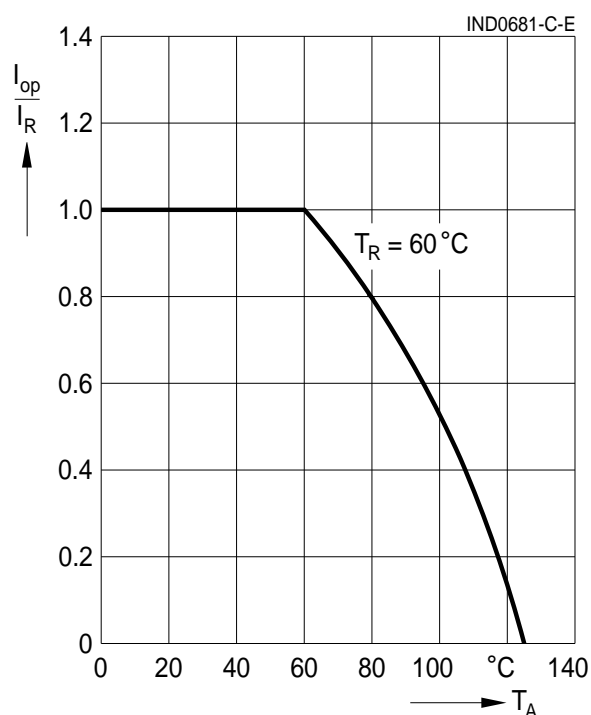
$L_R = 33 \text{ mH}$



$L_R = 50 \text{ mH}$



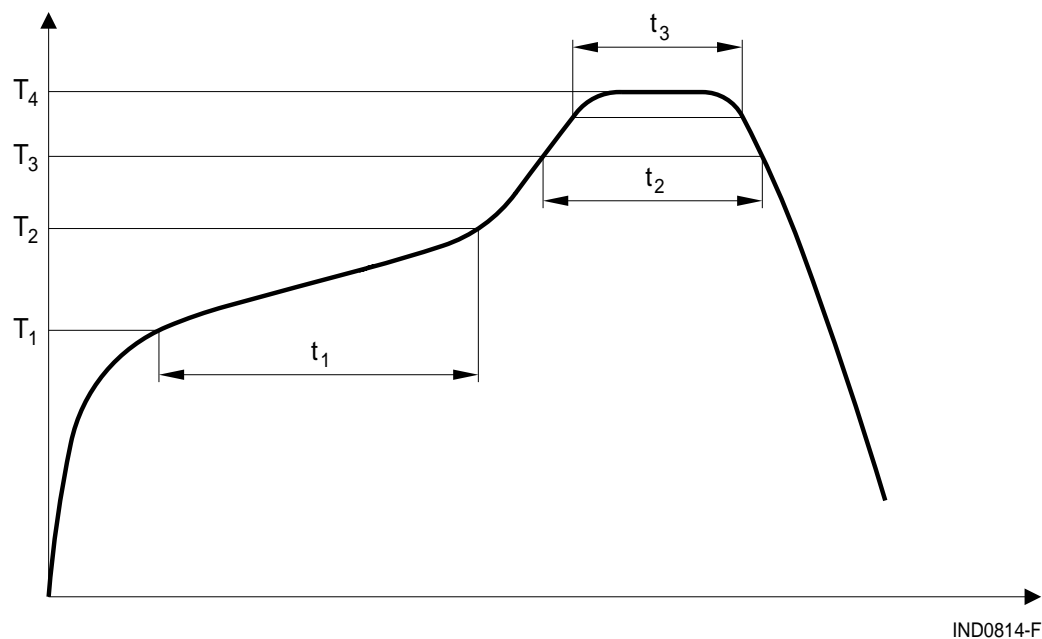
**Current derating I_{op}/I_R
versus ambient temperature**



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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 T₄: 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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