

## 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

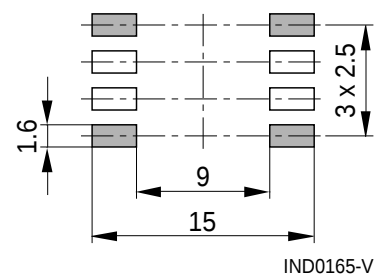
- Marking on component:  
Manufacturer, ordering code, inductance, date of manufacture (YYWWD)
- Minimum data on reel:  
Manufacturer, ordering code, L value and tolerance, quantity, date of packing

### Delivery mode and packing unit

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

**SMD**

## Layout recommendation

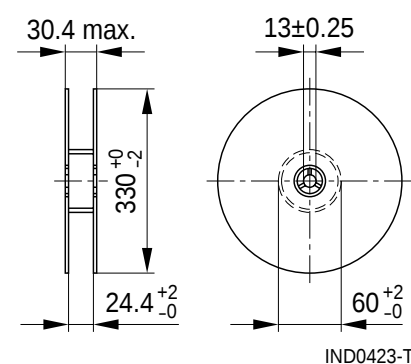


IND0165-V

IND0164-H-E

Dimensions in mm

## Blister tape



IND0423-T

Dimensions in mm

**Data and signal line chokes**
**B82792C0**
**Common-mode chokes, ring core**
**SMD**
**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<br>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,<br>typical values                              |
| DC resistance $R_{\text{typ}}$          | Measured at 20 °C, typical values, specified per winding                                            |
| Solderability (lead-free)               | Sn96.5Ag3.0Cu0.5: (245 ±5) °C, (3 ±0.3) s<br>Wetting of soldering area ≥ 95%<br>(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**

| $L_R$<br>mH | $L_{\text{stray,typ}}$<br>nH | $I_R$<br>mA | $R_{\text{typ}}$<br>mΩ | $V_{\text{test}}$<br>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 |

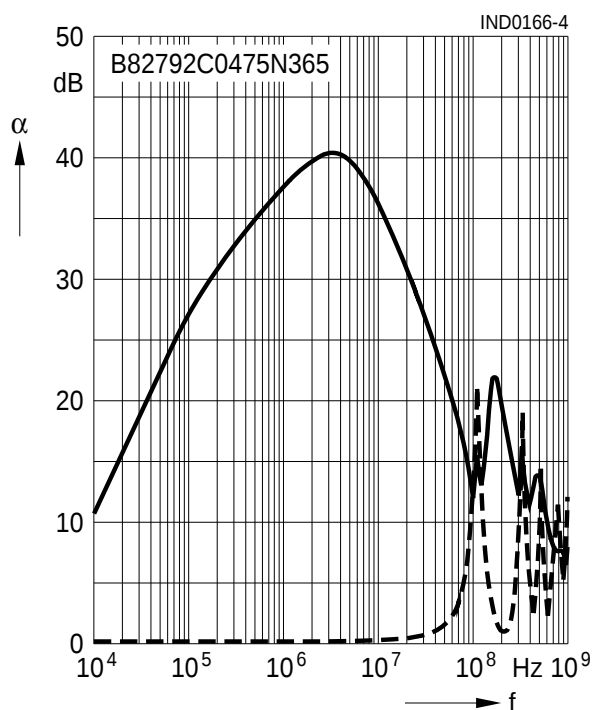
# SMD

**Insertion loss  $\alpha$**  (typical values at  $|Z| = 50 \Omega$ ,  $20^\circ\text{C}$ )

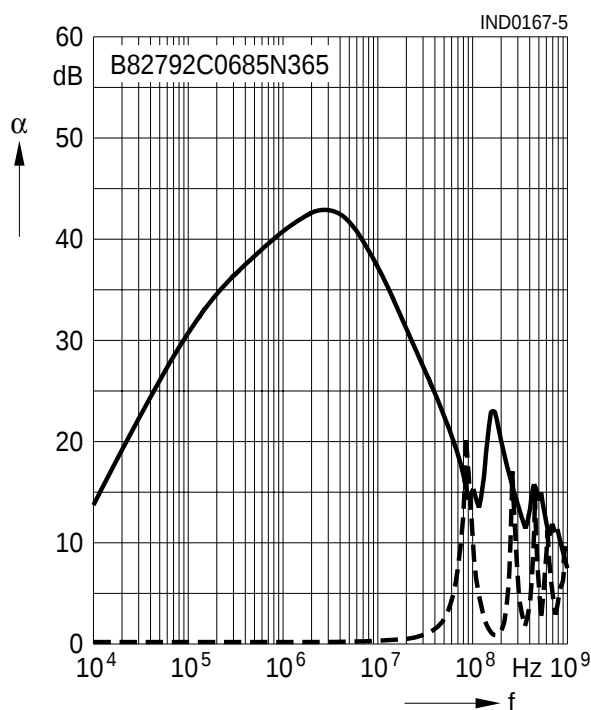
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

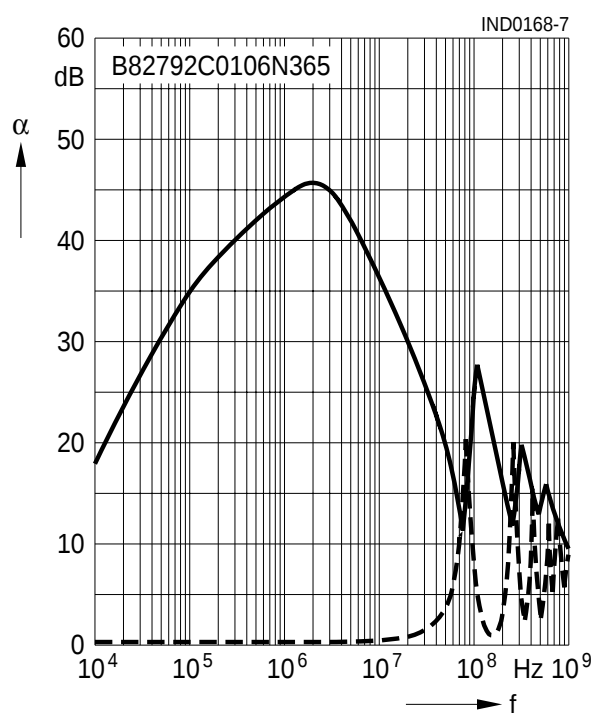
$L_R = 4.7 \text{ mH}$



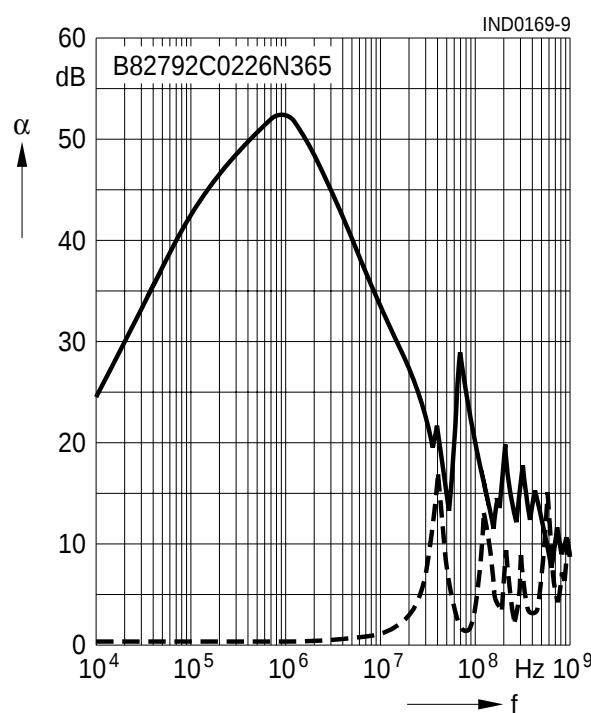
$L_R = 6.8 \text{ mH}$



$L_R = 10 \text{ mH}$



$L_R = 22 \text{ mH}$



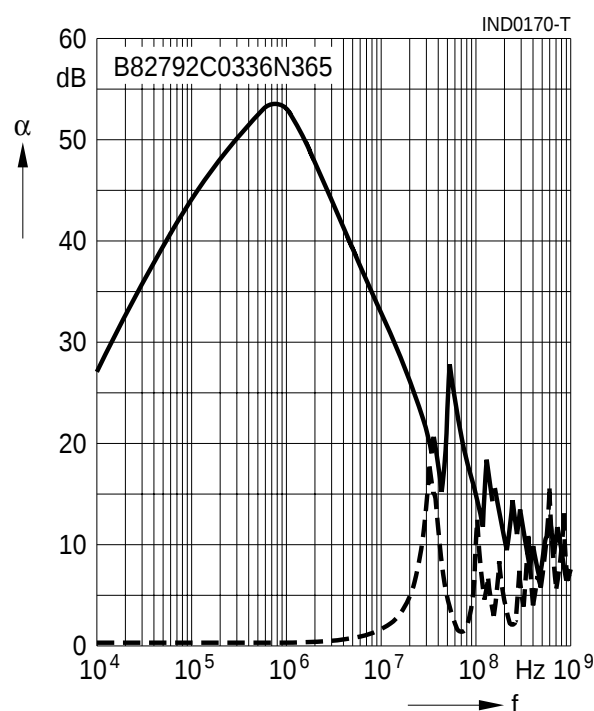
SMD

**Insertion loss  $\alpha$**  (typical values at  $|Z| = 50 \Omega$ ,  $20^\circ\text{C}$ )

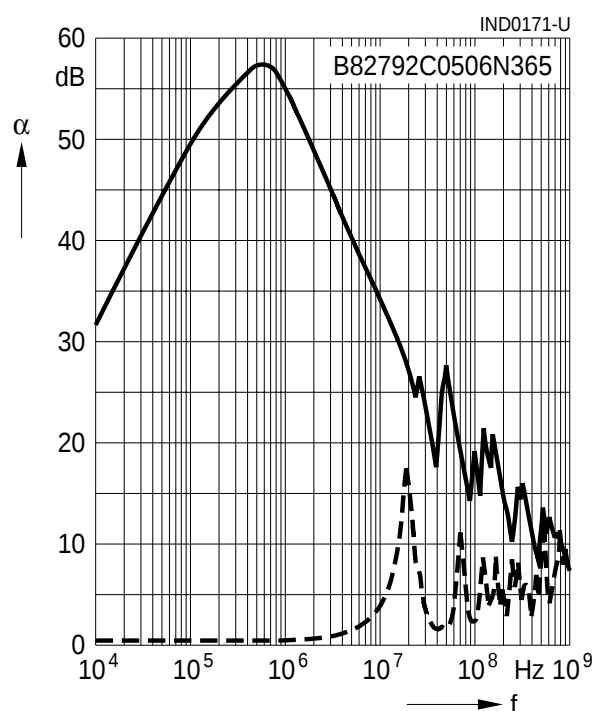
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

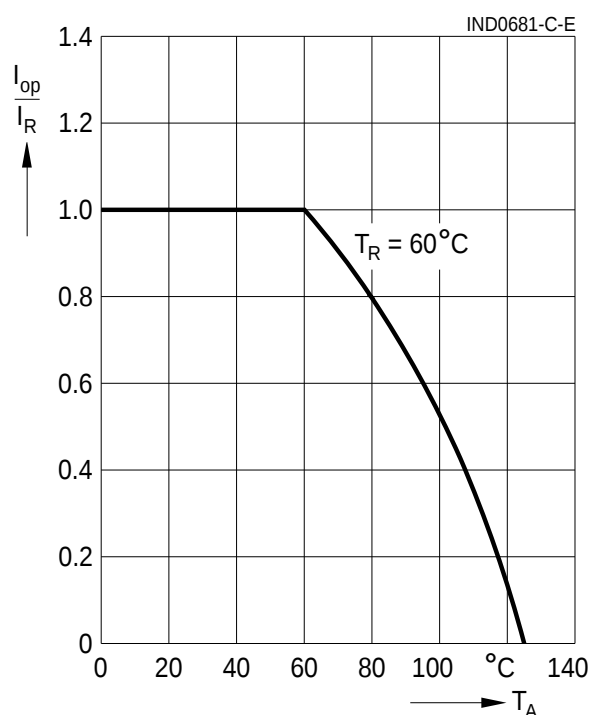
$L_R = 33 \text{ mH}$



$L_R = 50 \text{ mH}$



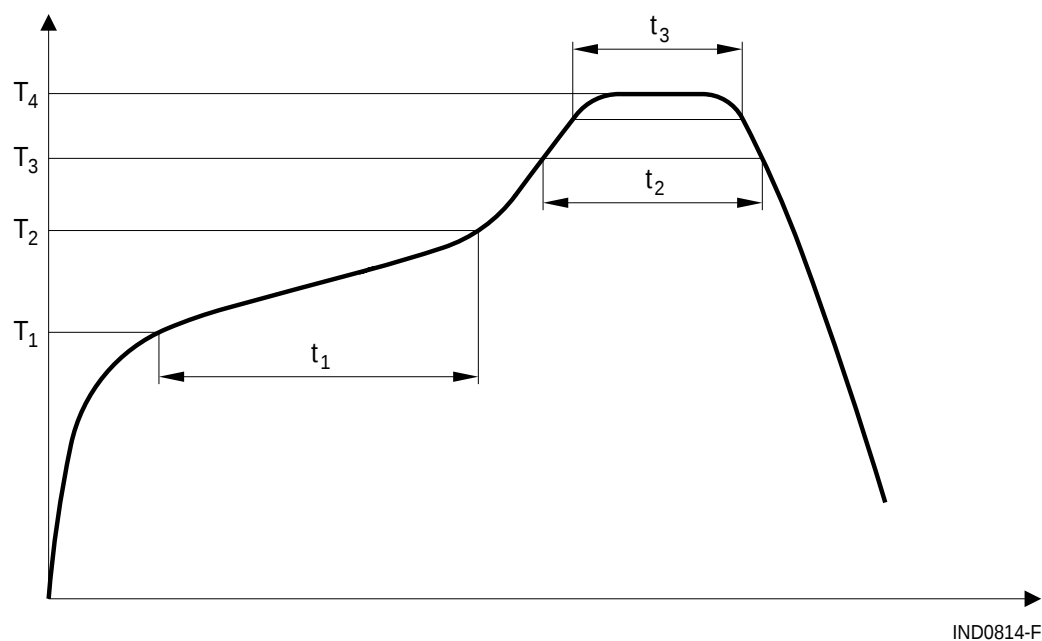
**Current derating  $I_{op}/I_R$   
versus ambient temperature**



**SMD**

**Recommended reflow soldering curve**

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



| T <sub>1</sub><br>°C | T <sub>2</sub><br>°C | T <sub>3</sub><br>°C | T <sub>4</sub><br>°C | t <sub>1</sub><br>s | t <sub>2</sub><br>s | t <sub>3</sub><br>s         |
|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|-----------------------------|
| 150                  | 200                  | 217                  | 250                  | < 110               | < 90                | < 30 @ T <sub>4</sub> -5 °C |

Time from 25 °C to T<sub>4</sub>: 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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