



Data and signal line chokes

Common-mode chokes, ring core
0.011 ... 2.2 mH, 100 ... 200 mA, 60 °C

Series/Type: **B82793C2**

Date: April 2008

Rated voltage 42 V AC/80 V DC
Rated inductance 0.011 mH to 2.2 mH
Rated current 100 mA to 200 mA



Construction

- Current-compensated ring core quad 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
- ISDN systems

Terminals

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

Marking

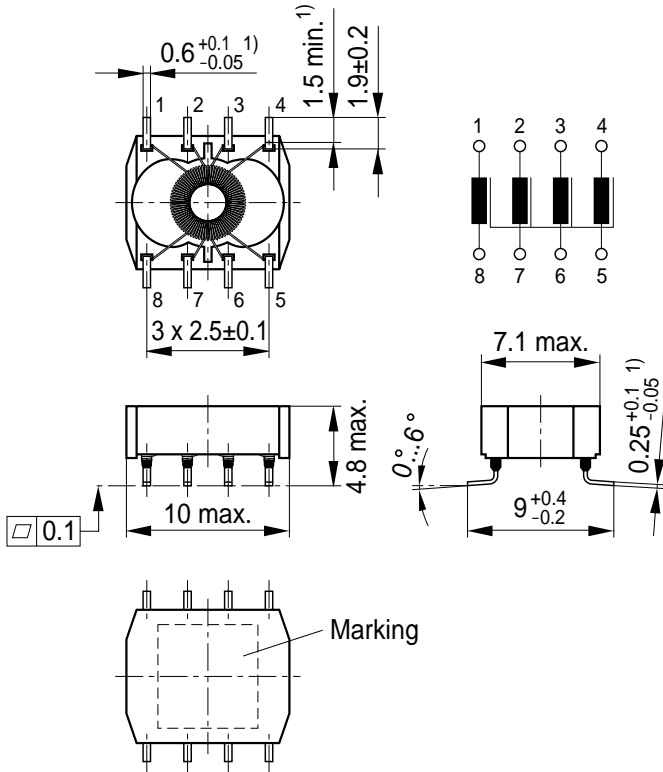
- Marking on component:
Manufacturer, ordering code,
date of manufacture (YWWD)
- Minimum data on reel:
Manufacturer, ordering code, L value and tolerance,
quantity, date of packing

Delivery mode and packing unit

- 16-mm blister tape, wound on 330-mm Ø reel
- Packing unit: 1000 pcs./reel

SMD

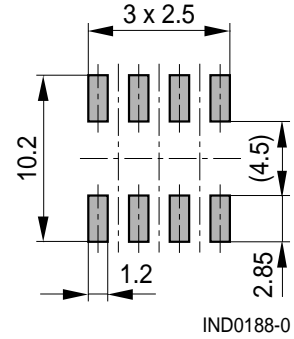
Dimensional drawing and pin configuration



1) Soldering area

IND0187-L-E

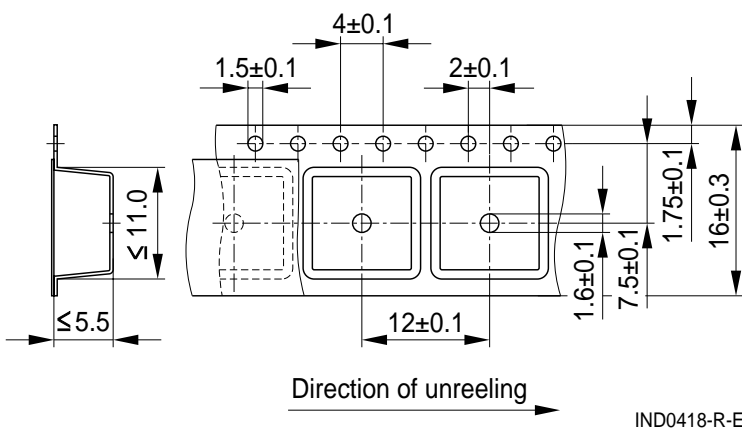
Layout recommendation



Dimensions in mm

Taping and packing

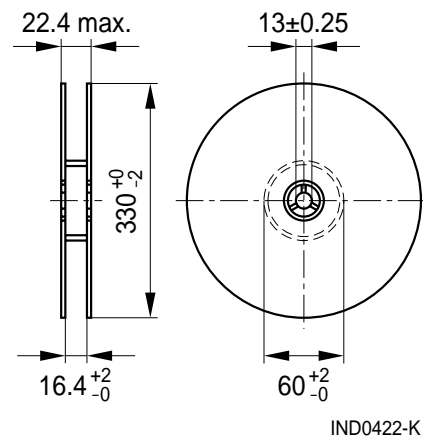
Blister tape



Dimensions in mm

IND0418-R-E

Reel



IND0422-K

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 0.1 mA, 20 °C Measuring frequency: $L_R \leq 1 \text{ mH} = 100 \text{ kHz}$ $L_R > 1 \text{ mH} = 10 \text{ kHz}$ 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 5 mA, 20 °C, typical values Measuring frequency: $L_R \leq 11 \mu\text{H} = 1 \text{ MHz}$ $L_R > 11 \mu\text{H} = 100 \text{ kHz}$ |
| 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. 0.4 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 |
|-------------|------------------------------|-------------|------------------------|--------------------------------|-----------------|
| 0.011 | 120 | 200 | 60 | 750 | B82793C2113N201 |
| 0.047 | 170 | 150 | 150 | 750 | B82793C2473N201 |
| 0.47 | 170 | 100 | 350 | 750 | B82793C2474N215 |
| 2.2 | 220 | 100 | 400 | 750 | B82793C2225N265 |

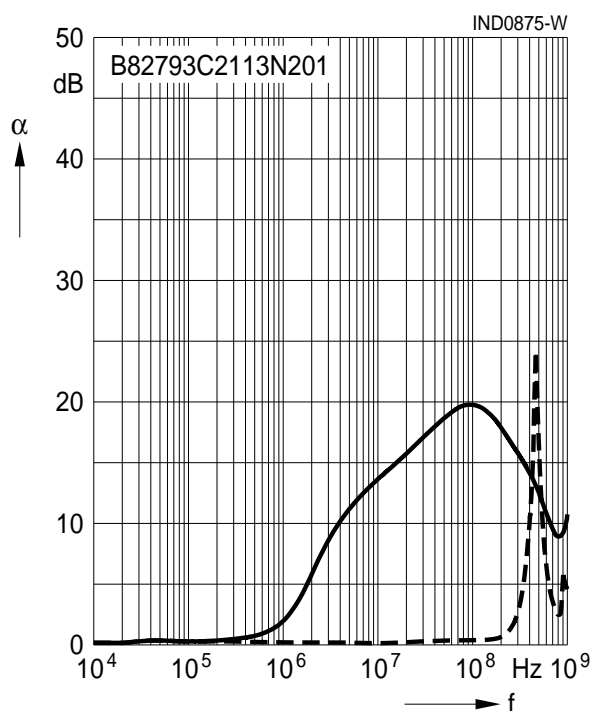
SMD

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

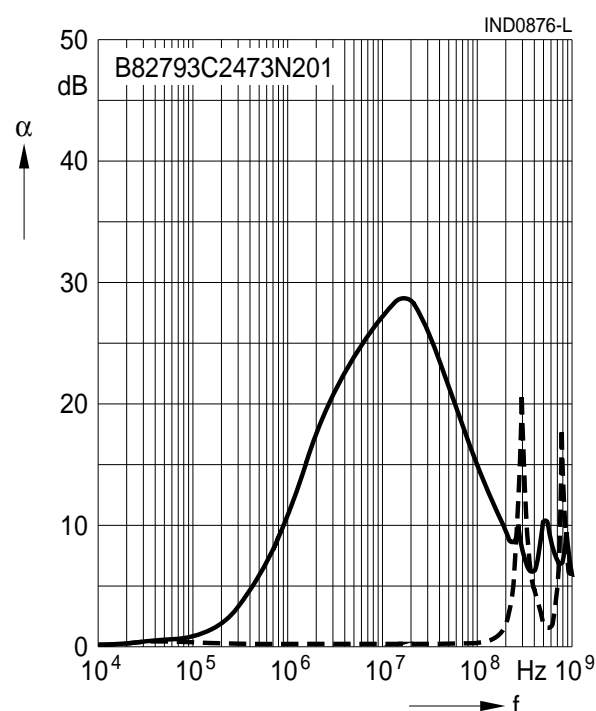
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

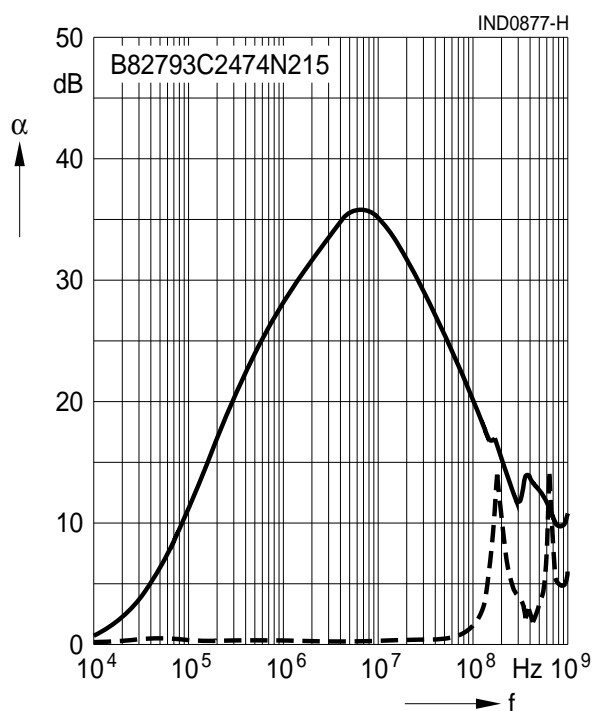
$L_R = 0.011 \text{ mH}$



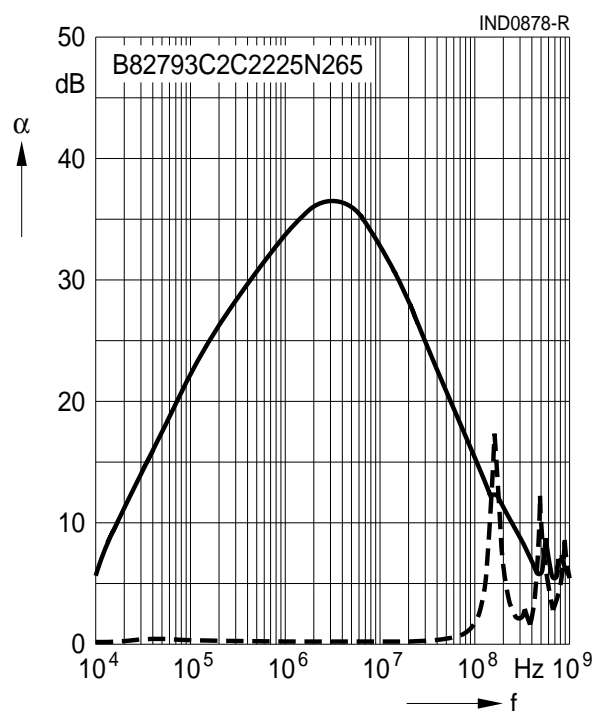
$L_R = 0.047 \text{ mH}$



$L_R = 0.47 \text{ mH}$

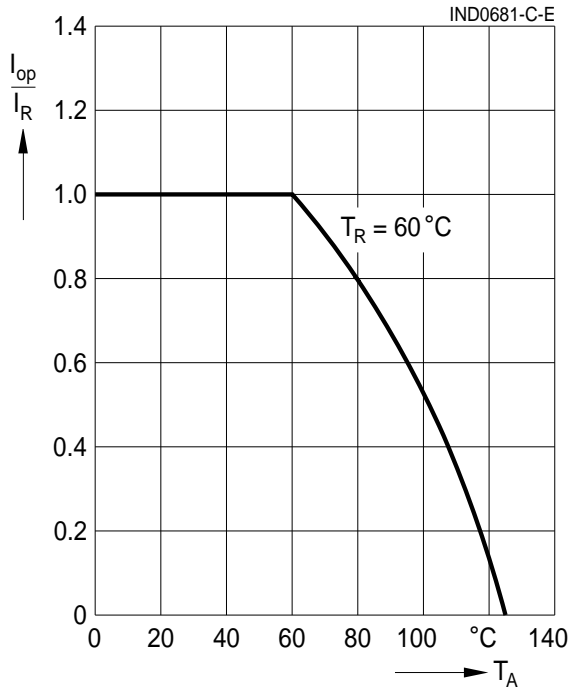


$L_R = 2.2 \text{ mH}$



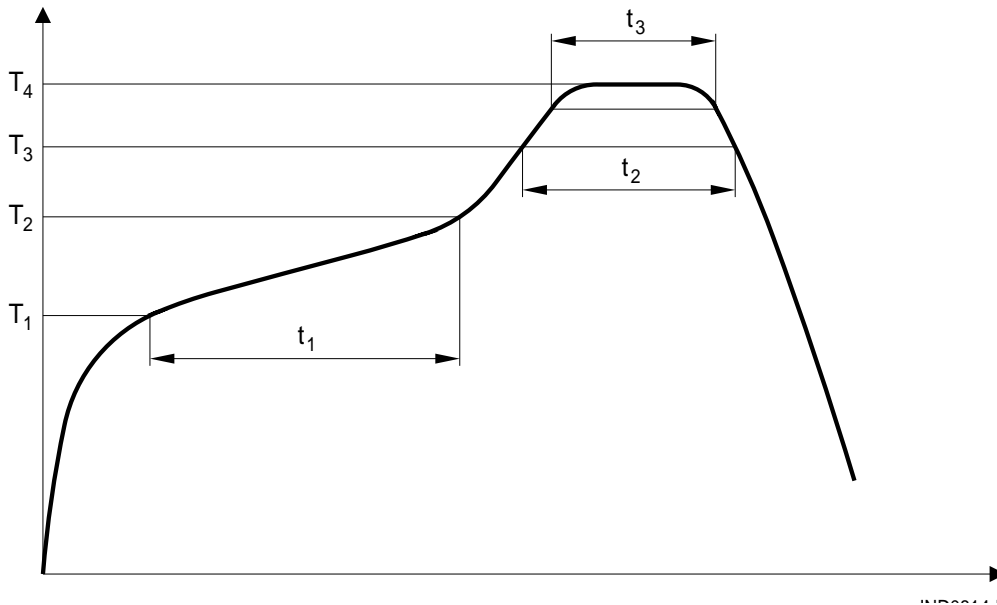
SMD

Current derating I_{op}/I_R versus ambient temperature



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 @ $T_4 - 5\text{ °C}$ |

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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