



## Data and signal line chokes

Common-mode chokes, ring core  
4.7 ... 10 mH, 200 ... 300 mA, 60 °C

**Series/Type:**            **B82794C2**

**Date:**                    January 2010

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**SMD**

**Rated voltage 42 V AC/80 V DC**  
**Rated inductance 4.7 mH to 10 mH**  
**Rated current 200 mA to 300 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 interfaces
- ISDN systems

**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

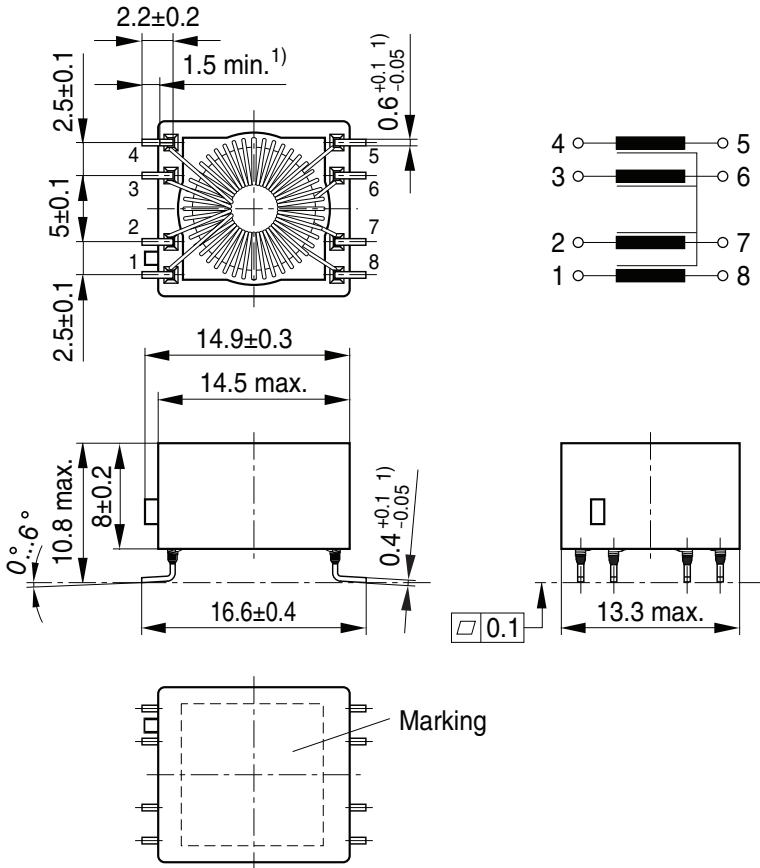
**Delivery mode and packing unit**

- 24-mm blister tape, wound on 330-mm  $\varnothing$  reel
- Packing unit: 250 pcs./reel

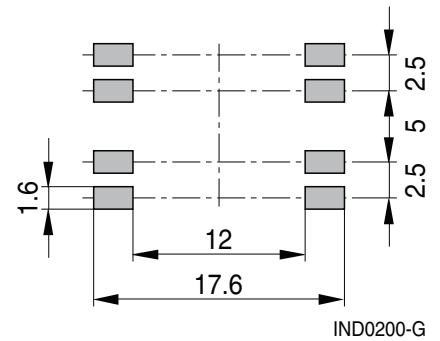


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**Dimensional drawing and pin configuration**



**Layout recommendation**



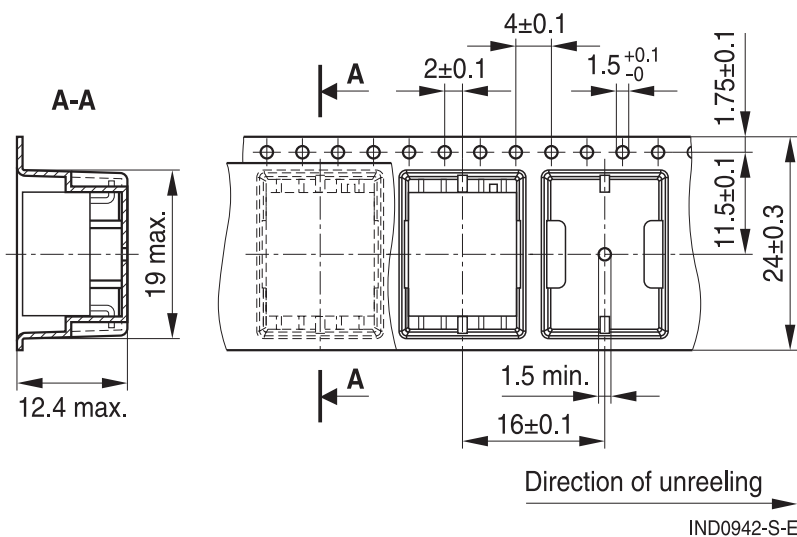
1) Soldering area

IND0199-K-E

Dimensions in mm

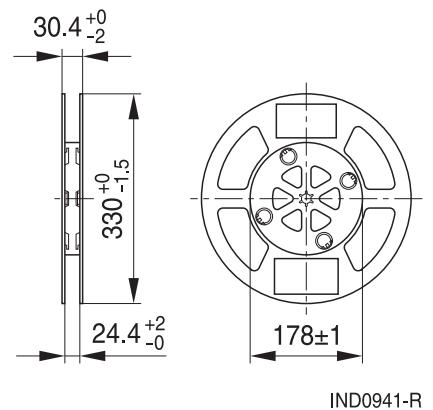
**Taping and packing**

**Blister tape**



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 $R_{\text{typ}}$	Measured at 20 °C, typical values, specified per winding
Solderability (lead-free)	Sn96.5Ag3.0Cu0.5: (245 ±5) °C, (3 ±0.3) s 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. 2.5 g

**Characteristics and ordering codes**

$L_R$ mH	$L_{\text{stray,typ}}$ nH	$I_R$ mA	$R_{\text{typ}}$ mΩ	$V_{\text{test}}$ V DC, 2 s	Ordering code
4.7	350	300	900	750	B82794C2475N465
10	900	200	1400	750	B82794C2106N465

Common-mode chokes, ring core

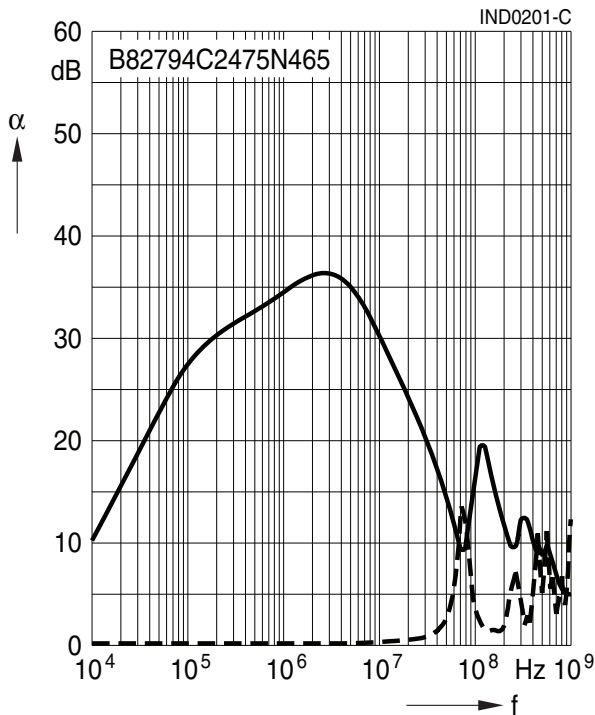
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Insertion loss  $\alpha$  (typical values at  $|Z| = 50 \Omega$ ,  $20^\circ\text{C}$ )

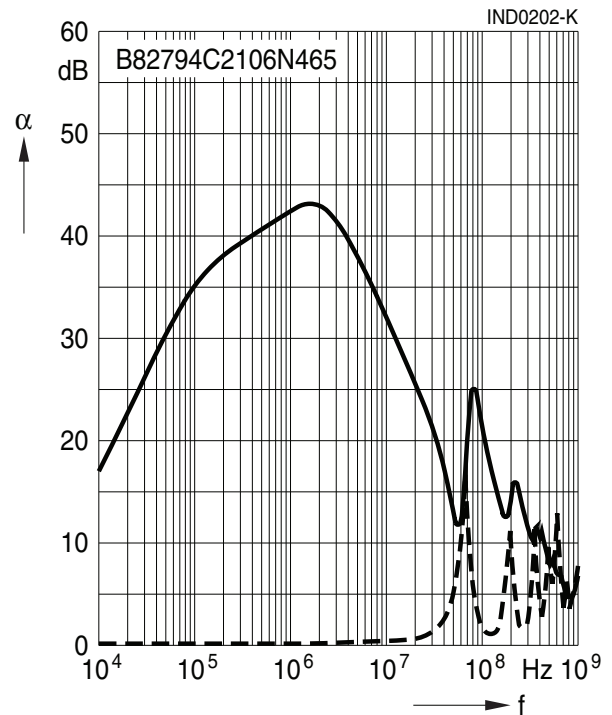
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

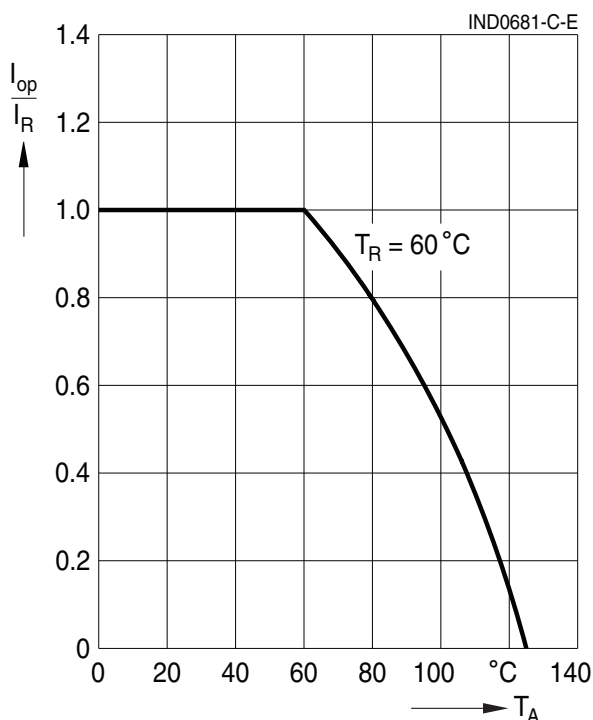
$L_R = 4.7 \text{ mH}$



$L_R = 10 \text{ mH}$



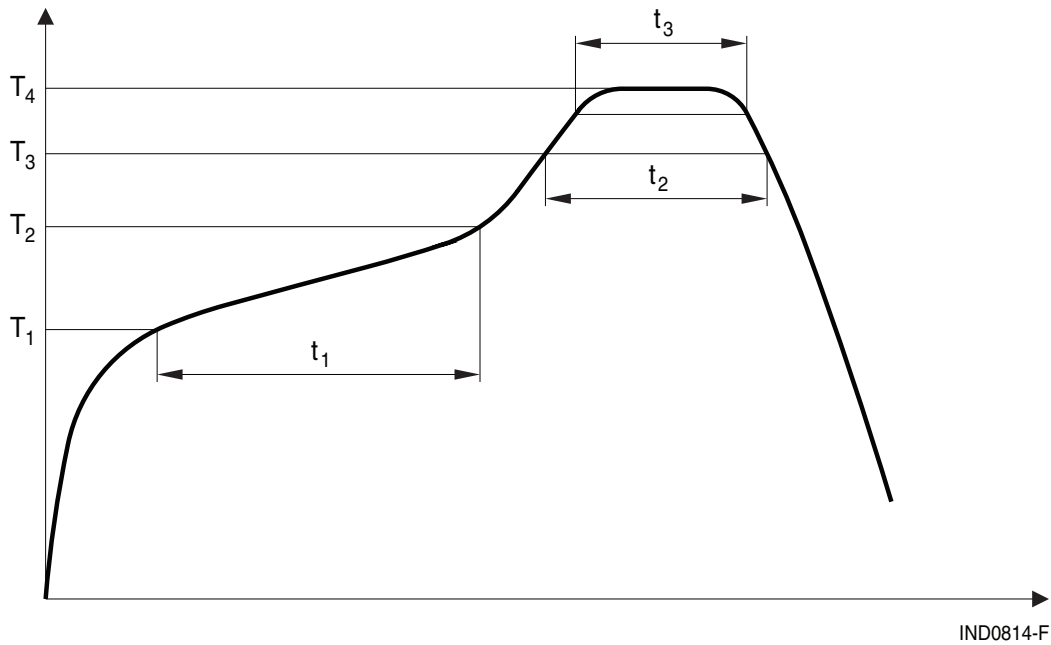
Current derating  $I_{op}/I_R$  versus ambient temperature



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**Recommended reflow soldering curve**

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



T <sub>1</sub> °C	T <sub>2</sub> °C	T <sub>3</sub> °C	T <sub>4</sub> °C	t <sub>1</sub> s	t <sub>2</sub> s	t <sub>3</sub> s
150	200	217	245	< 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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