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Data and signal line chokes

Common-mode chokes, ring core
0.47 … 4.7 mH, 300 … 600 mA, 60 °C

Series/Type: **B82792C2**

Date: April 2008

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Common-mode chokes, ring core

SMD

Rated voltage 42 V AC/80 V DC
Rated inductance 0.47 mH to 4.7 mH
Rated current 300 mA to 600 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
- RF equipment

Terminals

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

Marking

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

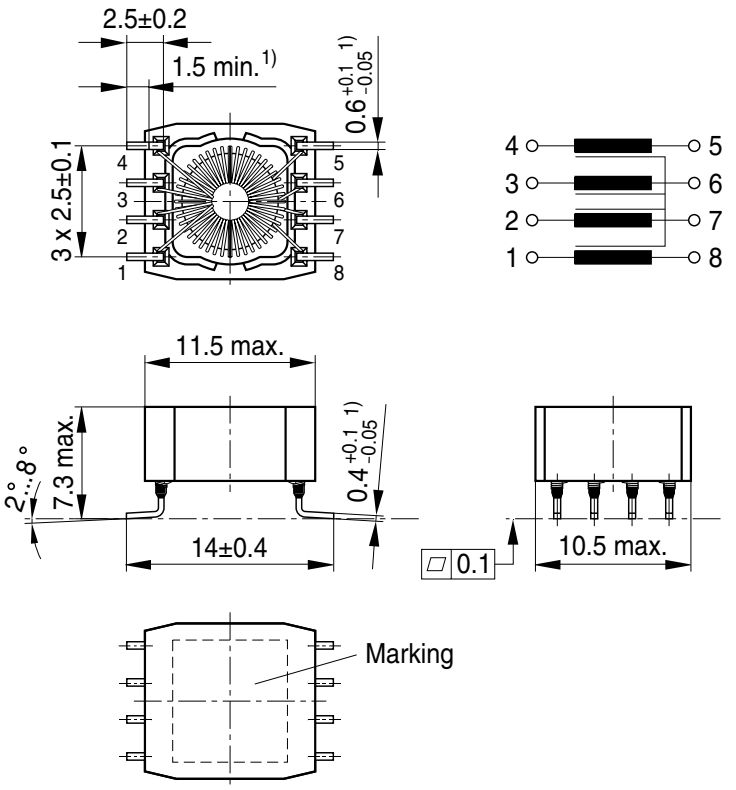
Delivery mode and packing unit

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

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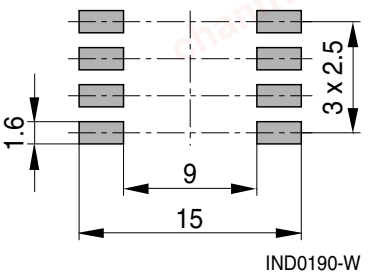
Dimensional drawing and pin configuration



1) Soldering area

IND0189-Q-E

Layout recommendation

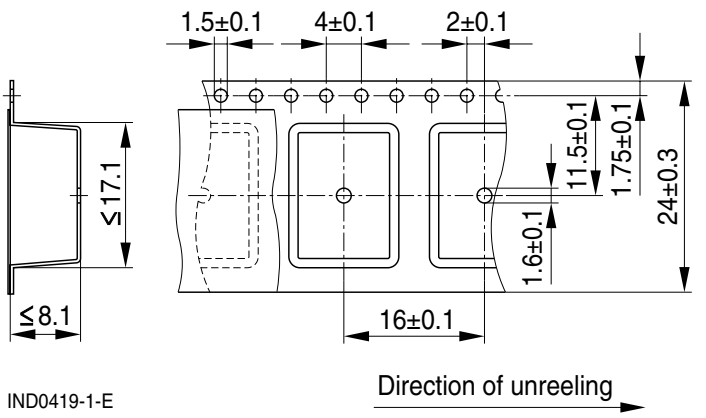


IND0190-W

Dimensions in mm

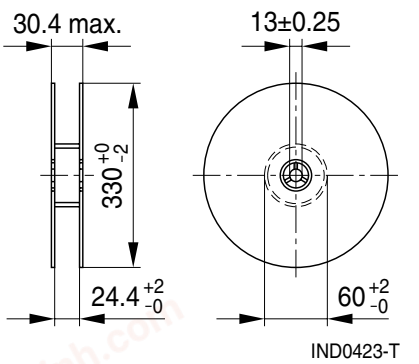
Taping and packing

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 50 mV, 20 °C Measuring frequency: $L_R \leq 1$ mH = 100 kHz $L_R > 1$ mH = 10 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 $L_{stray,typ}$	Measured with Agilent 4284A at 50 mV, 20 °C, typical values Measuring frequency: $L_R \leq 1$ mH = 100 kHz $L_R > 1$ mH = 10 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. 2 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
0.47	200	600	220	750	B82792C2474N315
1.0	200	500	170	750	B82792C2105N365
4.7	300	300	700	750	B82792C2475N365

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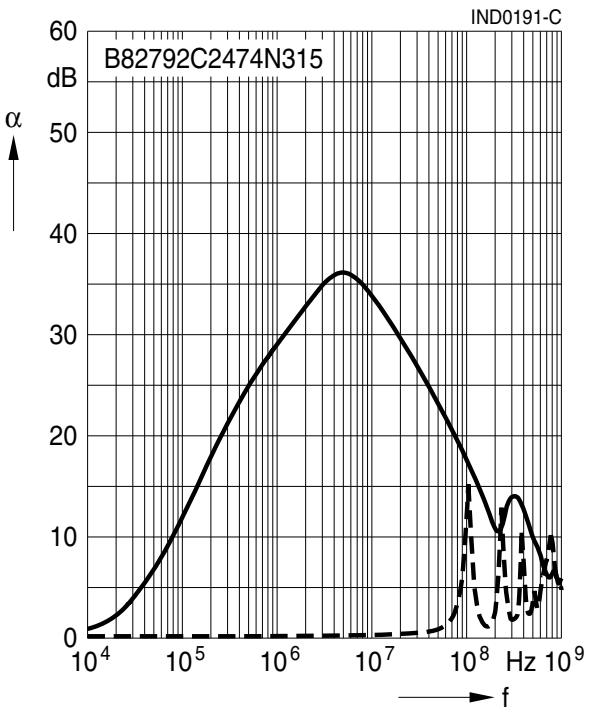
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Insertion loss α (typical values at |Z| = 50 Ω, 20 °C)

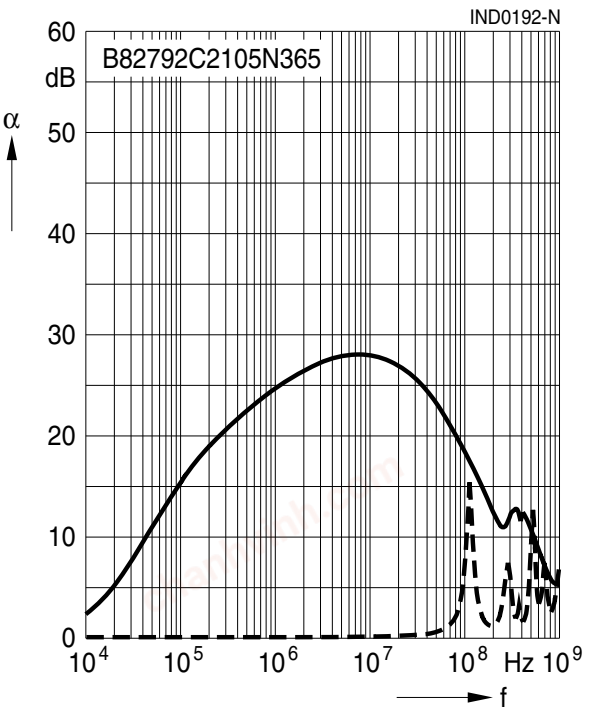
——— asymmetrical, all branches in parallel (common mode)

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

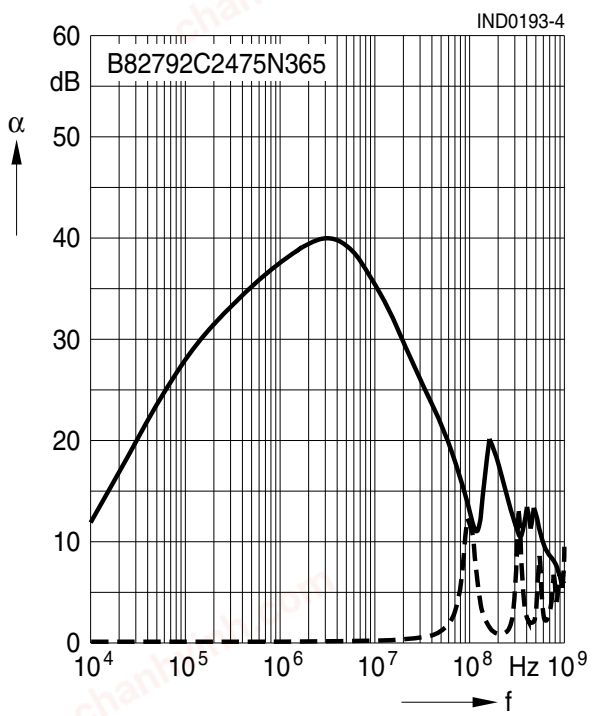
L_R = 0.47 mH



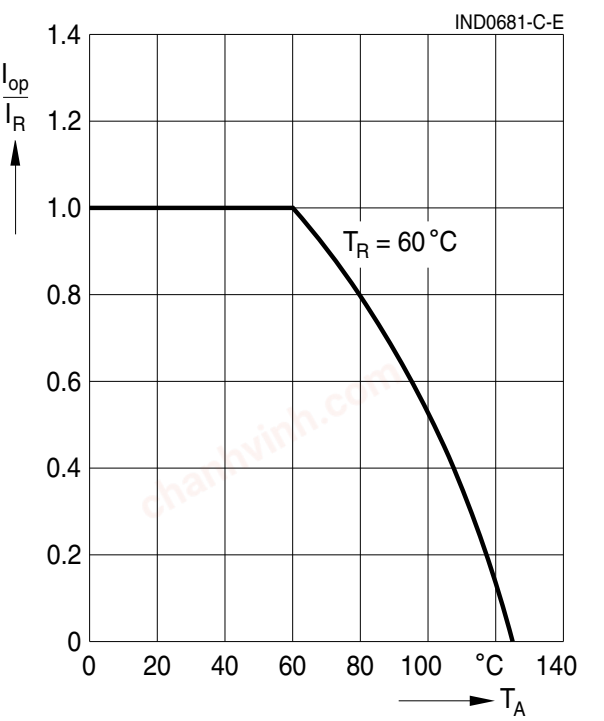
L_R = 1.0 mH



L_R = 4.7 mH



Current derating I_{op}/I_R versus ambient temperature

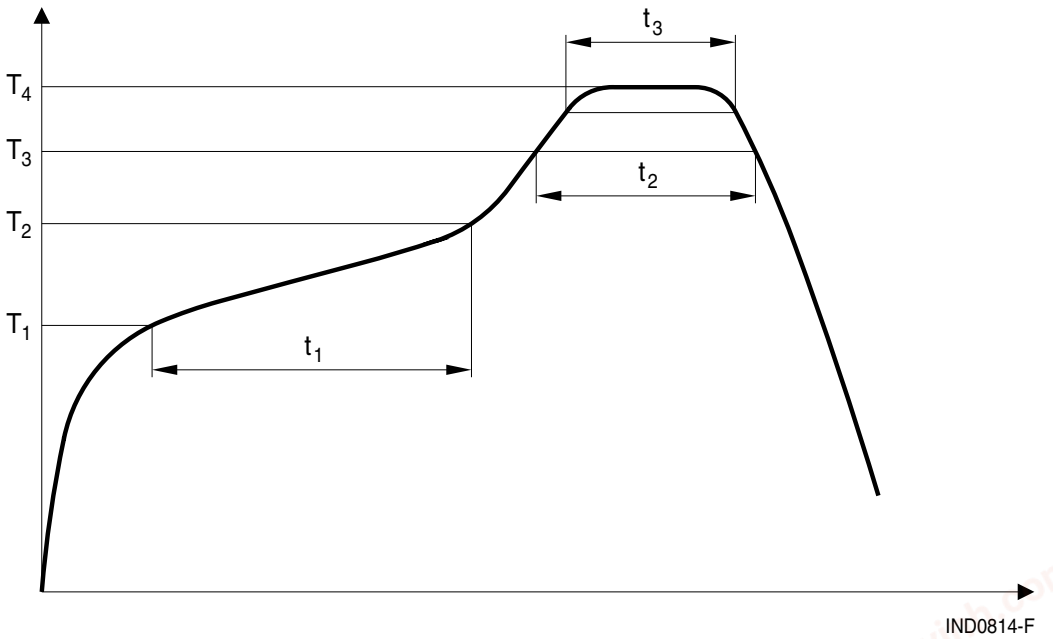


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Recommended reflow soldering curve

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

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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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Release 2018-10