

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

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

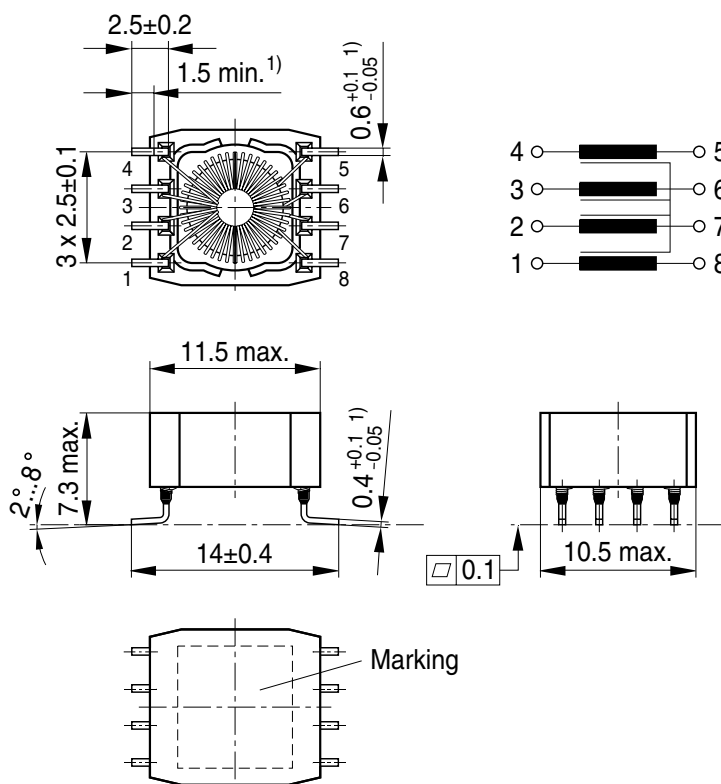
- Marking on component:
Manufacturer, ordering code inductance,
date of manufacture (YYMMD)
- Minimum data on reel:
Manufacturer, ordering code, L value and tolerance,
quantity, date of packing

Delivery mode and packing unit

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

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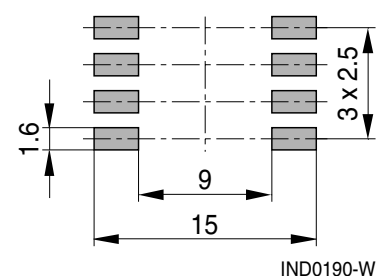
Dimensional drawing and pin configuration



1) Soldering area

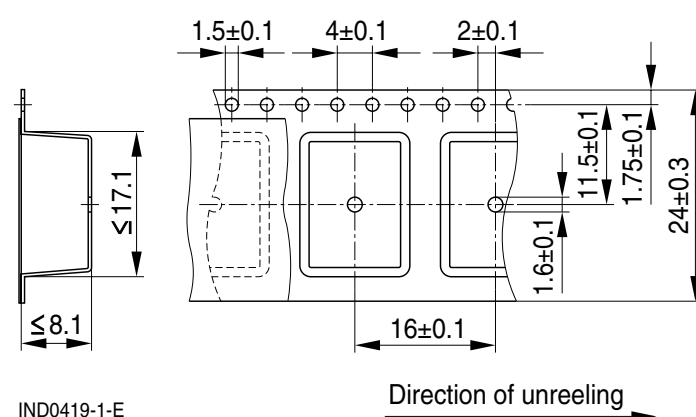
IND0189-Q-E

Layout recommendation



Taping and packing

Blister tape

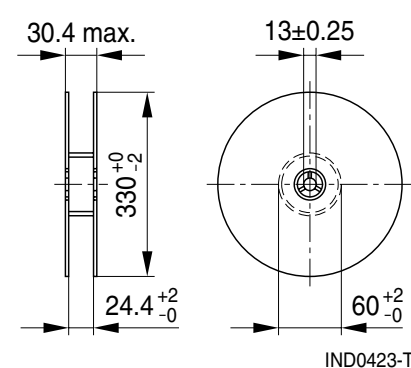


IND0419-1-E

Dimensions in mm

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

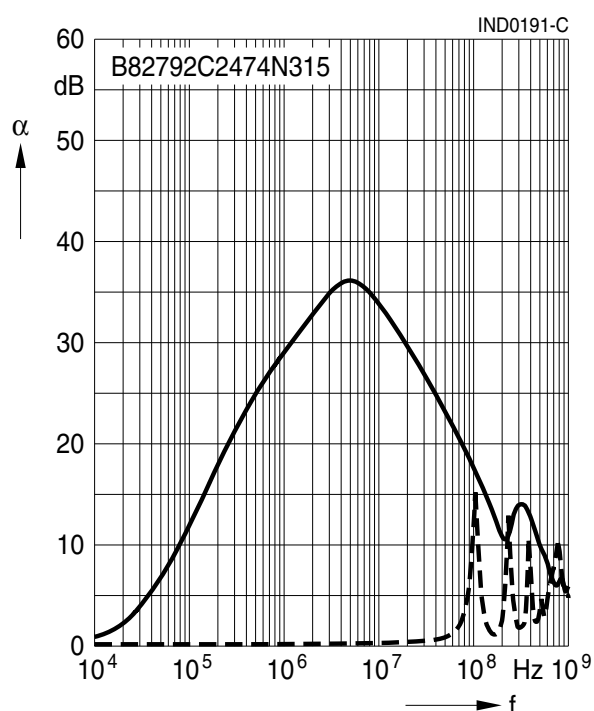
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Insertion loss α (typical values at $|Z| = 50 \Omega$, 20°C)

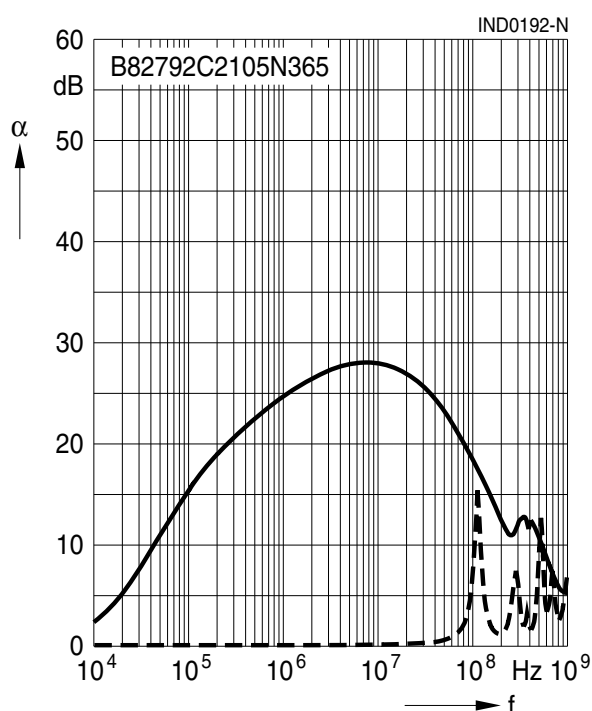
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

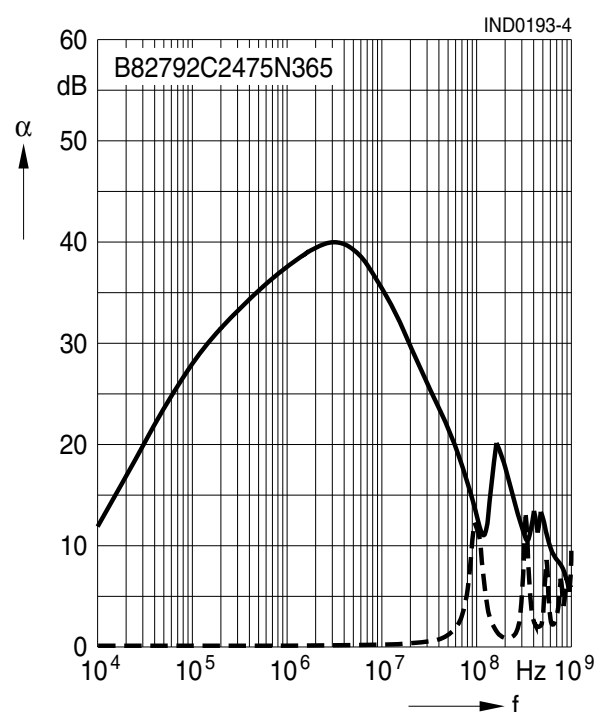
$L_R = 0.47 \text{ mH}$



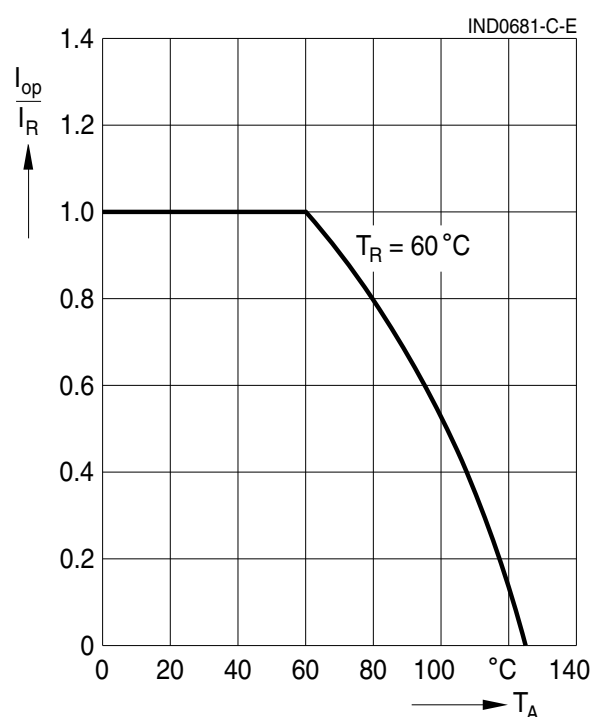
$L_R = 1.0 \text{ mH}$



$L_R = 4.7 \text{ mH}$



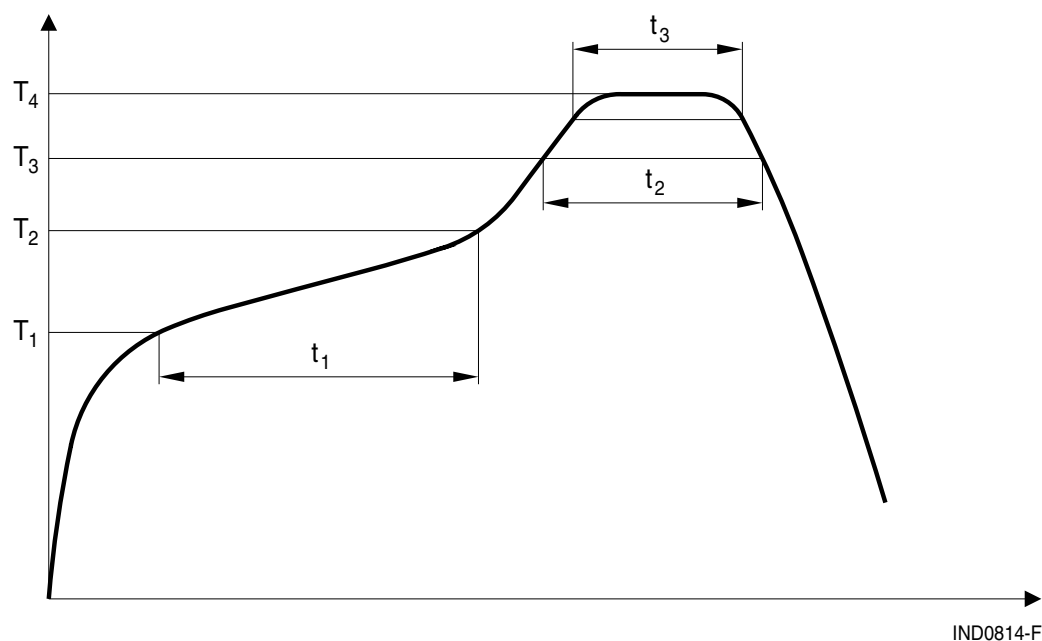
Current derating I_{op}/I_R
versus ambient temperature



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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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