



Data and signal line chokes

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

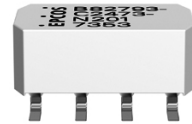
Series/Type: B82793C2

Date: April 2008

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SMD

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

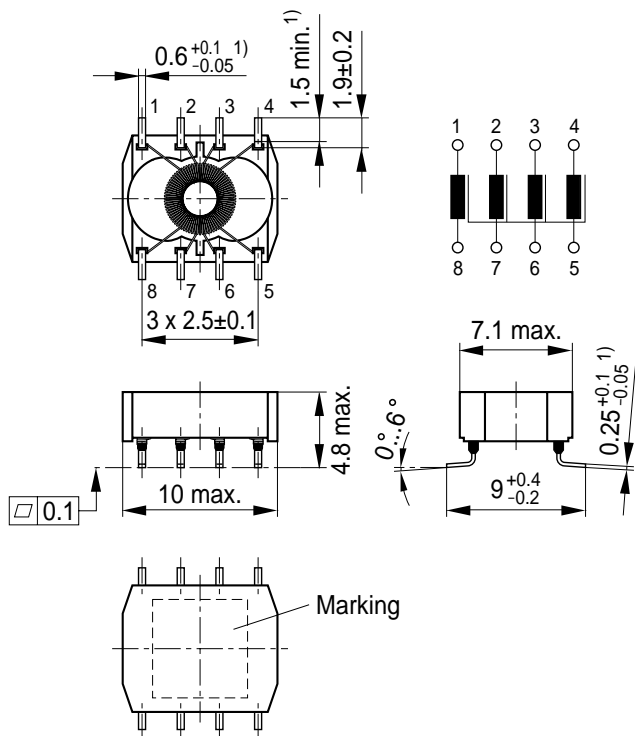
- Marking on component:
Manufacturer, ordering code,
date of manufacture (YWWD)
- Minimum data on reel:
Manufacturer, ordering code, L value and tolerance,
quantity, date of packing

Delivery mode and packing unit

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

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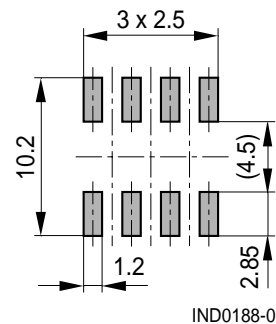
Dimensional drawing and pin configuration



1) Soldering area

IND0187-L-E

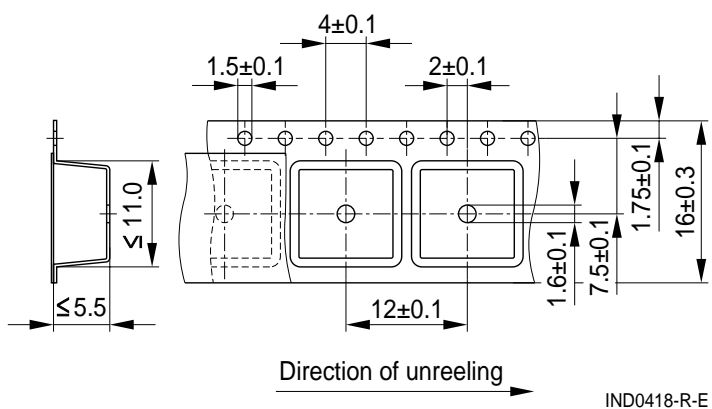
Layout recommendation



Dimensions in mm

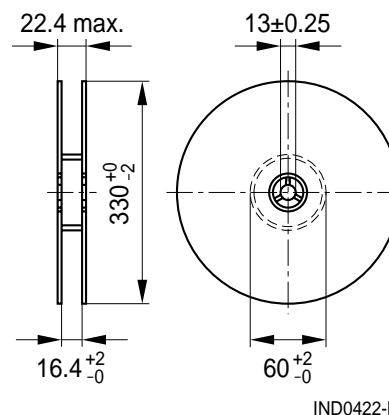
Taping and packing

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 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

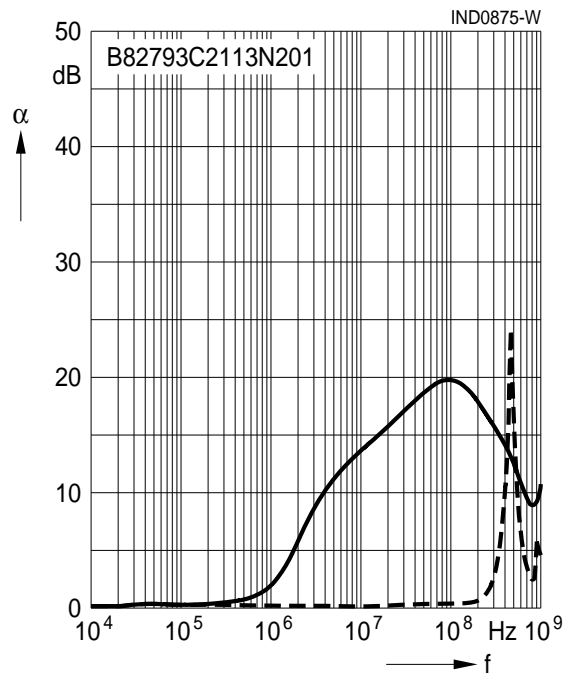
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Insertion loss α (typical values at $|Z| = 50 \Omega$, 20°C)

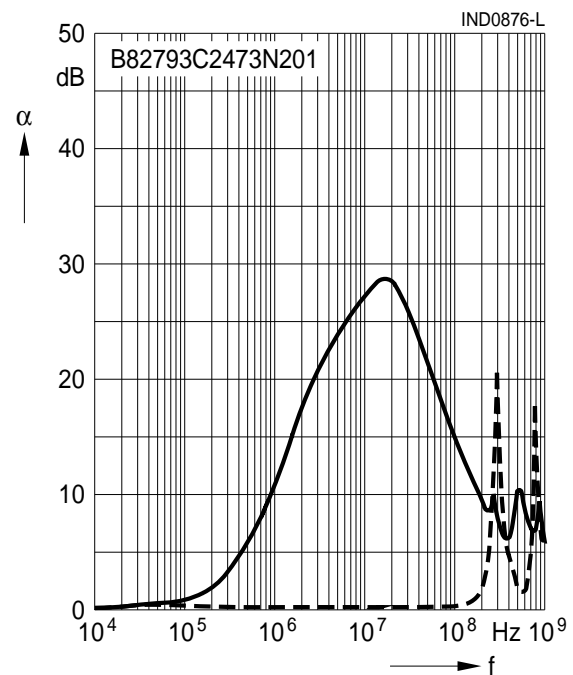
———— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

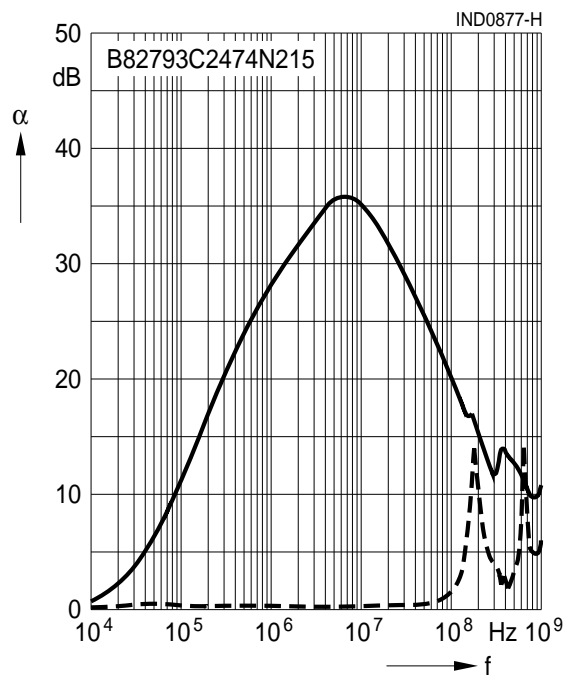
$L_R = 0.011 \text{ mH}$



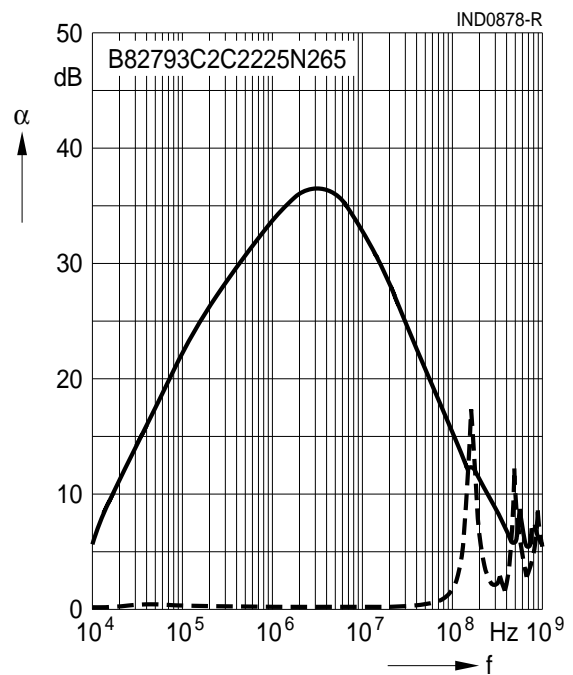
$L_R = 0.047 \text{ mH}$



$L_R = 0.47 \text{ mH}$

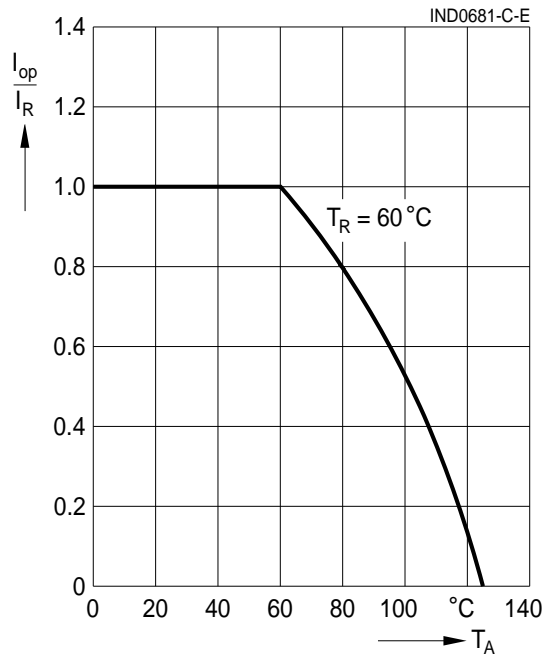


$L_R = 2.2 \text{ mH}$



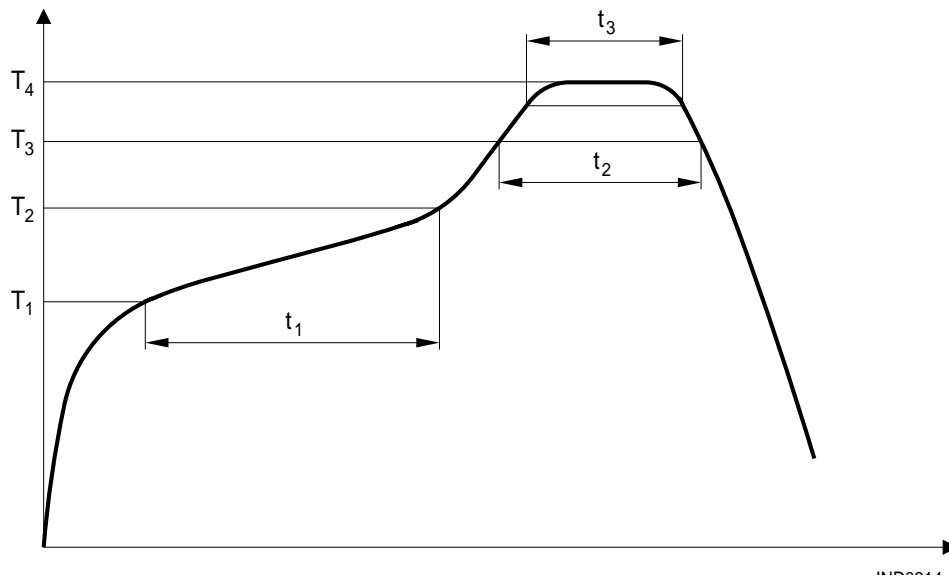
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Current derating I_{op}/I_R versus ambient temperature



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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