Power line chokes

Current-compensated NiZn ring core double chokes for very high frequencies - 250 V AC, 14 … 100 µH, 1.5 … 4 A / +70 °C

Series/Type: **B82791H2*N010**

Date: May 2020

Current-compensated NiZn ring core double chokes

Rated voltage 250 V AC
Rated current 1.5 A ... 4 A / +70 °C
Nominal inductance 14 µH ... 100 µH

Construction
- Current-compensated ring core double choke
- NiZn ferrite core with epoxy coating (UL 94 V-0)
- Plastic case (UL 94 V-0)[1] with in-molded pins
- Sector winding
- Clearance and creepage distances ≥ 3 mm

Features
- Very compact design, suitable for post-design EMC tuning on finished PCB
- Very high resonance frequency and high saturation capability due to special core material and omission of potting - filtering up to 300 MHz
- Approx. 8 ... 10% stray inductance for symmetrical interference suppression
- Suitable for wave soldering
- Recyclable owing to omission of adhesives
- Design complies with EN 60938-2 (VDE 0565-2)
- RoHS-compatible

Applications
- Suppression of common-mode interferences at very high frequencies
- LED driver circuits
- Switch-mode power applications
- Circuits with imbalanced or increased leakage current

Terminals
- Base material CuNi18Zn20
- Layer composition Ni, Sn
- Hot-dipped
- Pins ∅ 0.6 mm
- Lead spacing 12.7 × 5.08/2.54 mm

Marking
- Product brand (EPCOS), ordering code, graphic symbol, rated inductance, rated current, rated voltage, date of manufacture (YYWWD), production place identification code

Delivery mode[2]
- Cardboard box

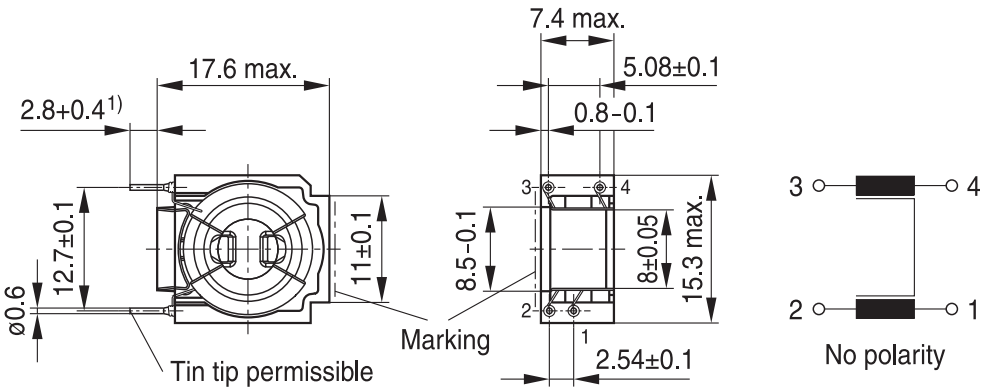
1) Additionally certified values:

Glow wire flammability index (GWFI to IEC 60695-2-12):	+850 °C
Glow wire ignition temperature (GWIT to IEC 60695-2-13):	+775 °C
Comparative tracking index (CTI to IEC 60112):	175 V
Ball pressure test (BP to IEC 60695-10-2):	+125 °C

2) Delivery in tube magazine is avalable on request

Dimensional drawings and pin configurations

Vertical version (B82791H)[1)]



1) Tin tip is not a part of this dimension

Part tolerances to ISO 2768-c / ISO 8015
Size ISO 14405 Ⓔ
All dimensions in mm

IND1623-C-E

1) Vertical version with symmetrical lead spacing (5.08 mm × 12.7 mm, B82791K) or horizontal version (lead spacing 10 mm x 15 mm, B82791G) are available on request.

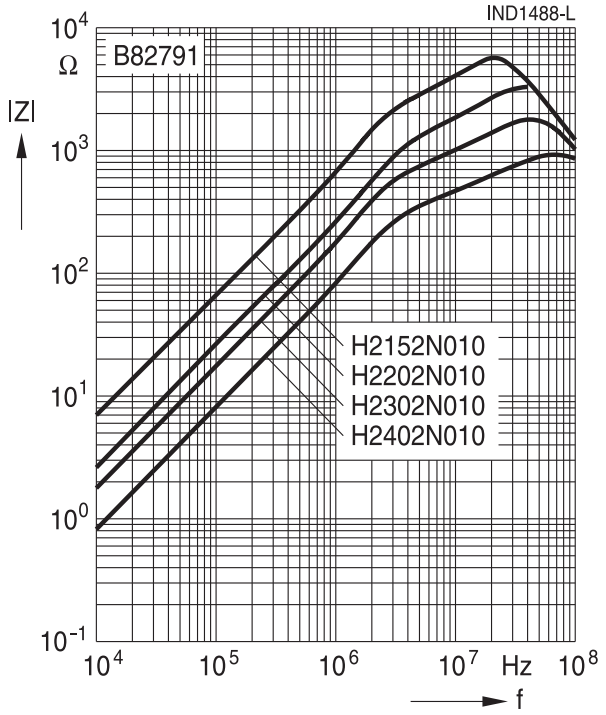
Technical data and measuring conditions

Rated voltage V_R	250 V AC (50/60 Hz)
Test voltage V_{test}	2000 V AC, 2 s (line/line)
Rated temperature T_R	+70 °C
Rated current I_R	Referred to 50 Hz and rated temperature
Nominal inductance L_N	Measured with Keysight E4980A at 100 kHz, 0.1 mA, +20 °C Inductance is specified per winding.
Inductance tolerance	±30% 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 100 kHz, 5 mA, +20 °C, typical values
DC resistance R_{typ}	Measured at +20 °C, typ. 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 60068-2-20, test Ta)
Resistance to soldering heat (wave soldering)	+(260 ±5) °C, (10 ±1) s (to IEC 60068-2-20, test Tb)
Climatic category	40/125/56 (to IEC 60068-1)
Storage conditions (packaged)	–25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 3 g

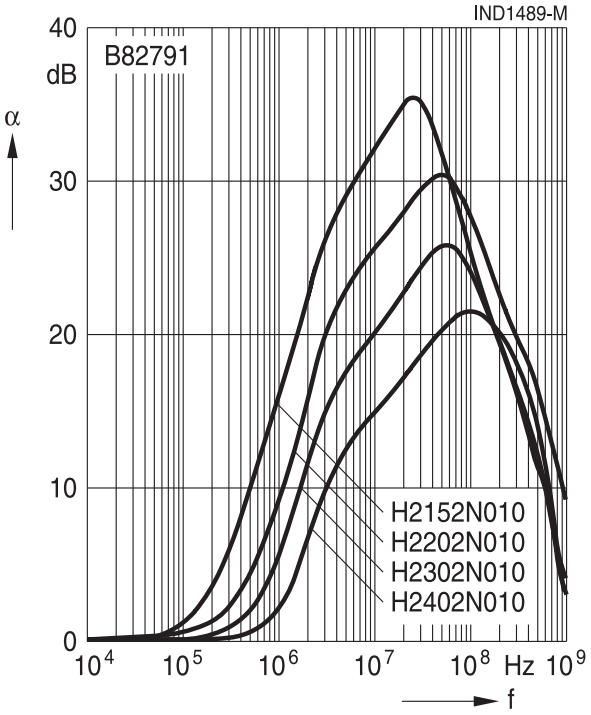
Characteristics and ordering codes

I_R A	L_N µH	$L_{stray,typ}$ µH	R_{typ} mΩ	Ordering code
1.5	100	8.0	65	B82791H2152N010
2.0	47	4.9	31	B82791H2202N010
3.0	30	2.4	23	B82791H2302N010
4.0	14	1.1	15	B82791H2402N010

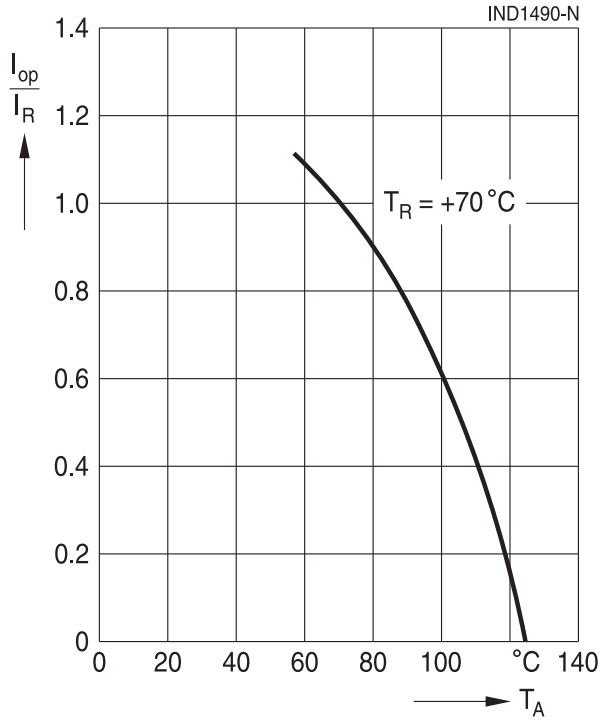
Impedance |Z| versus frequency f
measured with windings in parallel at +20 °C, typical values



Insertion loss α
(typical values at |Z| = 50 Ω, +20 °C) – asymetrical, both lines in parallel (common mode)



Current derating I_{op}/I_R versus temperature T_A
rated temperature +70 °C



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.
  Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- 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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