

Inductors for Power over Coaxial (PoC)

Power injection choke, EIA1210

Series/Type: ADL32VHC
Date: August 2022

Inductors for Power over Coaxial (PoC)

Power injection choke, EIA1210

ADL32VHC

Rated inductance: 10 ... 22 μH

Construction

- Ferrite I-core, metal shielding
- Winding: enamel copper wire
- Winding welded to terminals



Features

- Temperature range up to +150 °C
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD-020E
- Qualified according to AEC-Q200
- RoHS compatible

Applications

- Automotive Electronics
- Power over Coaxial (PoC)

Terminals

One-sided tinned terminals

- Base material CuSn6
- Layer composition Ni, Sn
- Lead-free tinned

Marking

- Marking on component:
L value (in μH , coded), date code, pin1 marking
- Minimum data on reel:
Lot number, part number, date of packing

Delivery mode and packing unit

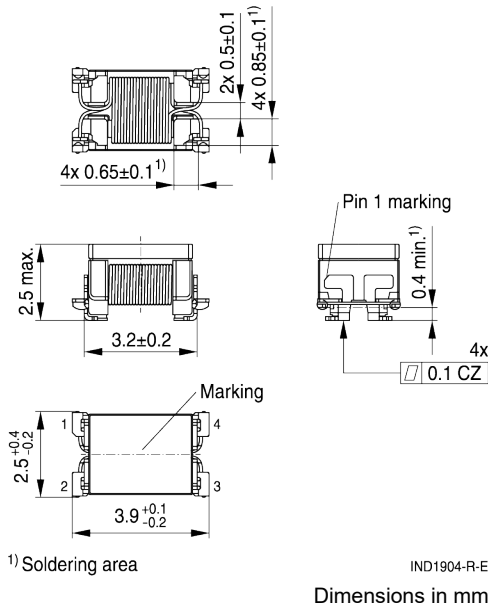
- 12-mm blister tape, wound on 330 mm \varnothing reel
- Packing unit: 6000 pcs. per reel

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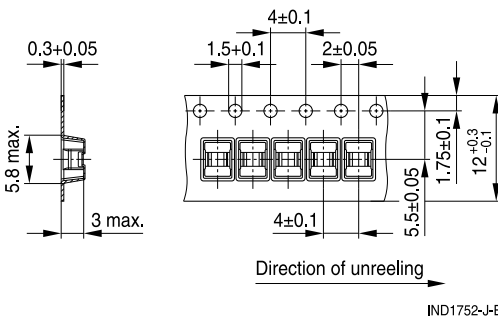
Dimensional drawing



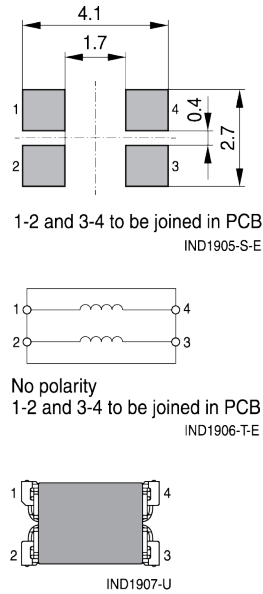
¹⁾ Soldering area

Taping and packing

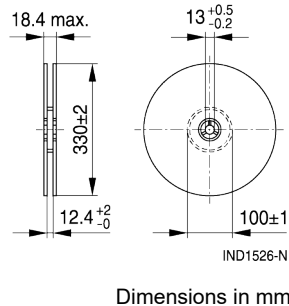
Blister tape



Layout recommendation



Reel



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Technical data and measuring conditions

Rated inductance L_R	Measured with Keysight E4980A (or equivalent) at 100 kHz, 100 mV, +23 °C ±3 °C, inductance is specified for both windings connected in parallel
Inductance tolerance	±20%
DC resistance R_{DC}	Measured at +23 °C ±3 °C, resistance is specified for both windings connected in parallel
Self-resonant frequency f_{res}	Measured with Keysight E4990A (or equivalent), +23 °C ±3 °C
Saturation current I_{sat}	Based on the inductance change rate (30% below the initial value)
Rated current I_{temp}	Based on the temperature increase (temperature increase +40 °C / +25 °C by self-heating) Ambient temperature: +25 °C / +105 °C / +125 °C I_{temp} are reference values evaluated under consideration of generic multilayer PCB
Weight	Approx. 0.08 g

Characteristics and ordering codes

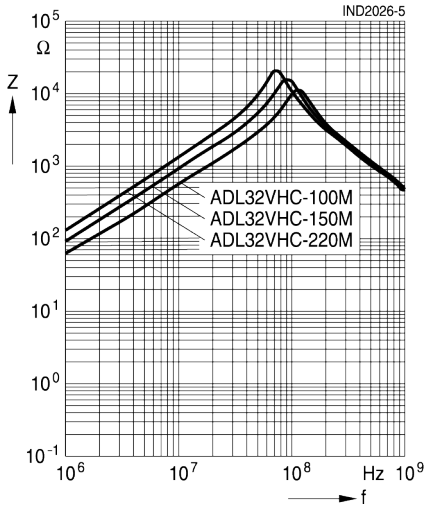
L_R	$R_{DC,max}$	$f_{res,typ}$	$I_{sat,typ}$ @ T_{amb} +25 °C	$I_{temp,typ}$ @ T_{amb} + temp. increase in °C			Internal code	Ordering code
				+25+40	+105+40	+125+25		
μH	Ω	MHz	mA	mA				
10	0.31	110	950	1000	900	710	B82782L1103H100	ADL32VHC-100M
15	0.63	90	750	700	620	500	B82782L1153H100	ADL32VHC-150M
22	0.89	70	640	580	520	420	B82782L1223H100	ADL32VHC-220M

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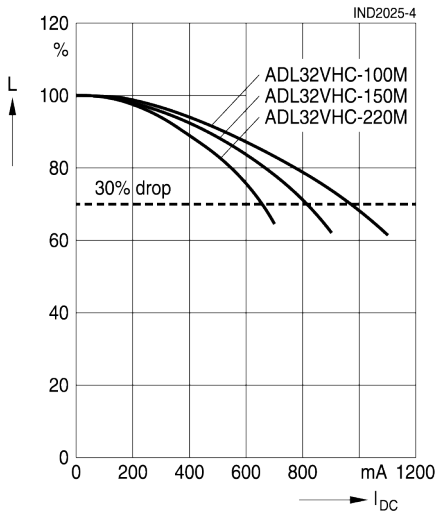
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Impedance versus frequency (typical curves)



Saturation current I_{sat} (typical curves)



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, wire insulation, plastics or glue.
 - The effect of the potting material can change the high-frequency behaviour of the components.
 - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component. Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / 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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Important notes

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