Data and signal line chokes

ACT1210 common-mode chokes, EIA 1210

Series/Type: **ACT1210**

Date: October 2019

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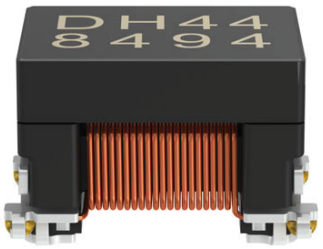
Common-mode chokes, EIA 1210

SMD

Rated voltage 80 V DC
Rated inductance 11 ... 100 µH
Rated current 150 ... 300 mA



Construction

- Current-compensated double choke
- Ferrite I core
- Winding: enamel copper wire
- Winding welded to terminals

Features

- Operating temperature range: –55 ... +150 °C
- Qualified to AEC-Q200
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020D
- RoHS-compatible

Function

- Suppression of asymmetrical interference coupled in on lines, whereas data signals up to some MHz can pass unaffectedly

Applications

- CAN bus and FlexRay systems

Terminals

One-sided tinned terminals:

- Base material CuSn8
- Electro-plating Sn with Ni underlayer
- Lead-free tinned

Marking

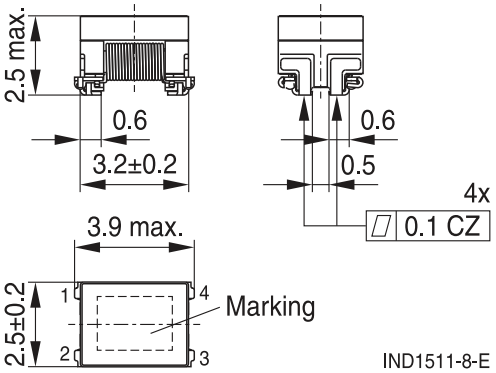
- Marking on component: L value ("A" = 11 µH, "B" = 22 µH, "C" = 51 µH, "D" = 100 µH), production location "H" = Heidenheim, two last digits of production order, date of manufacture (YWWD)

Delivery mode and packing unit

- 12-mm blister tape, wound on 330-mm ∅ reel
- Packing unit: 6000 pcs./reel

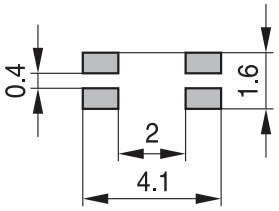
SMD

Dimensional drawing and pin configuration



IND1511-8-E

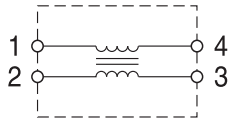
Layout recommendation



IND1512-9

Dimensions in mm

Circuit diagram

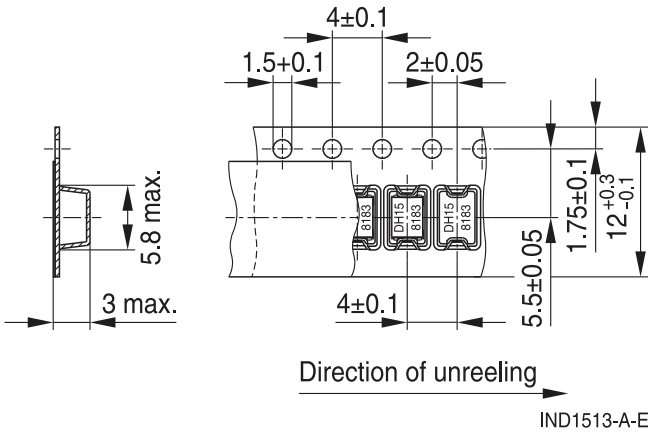


• No polarity

IND0995-W

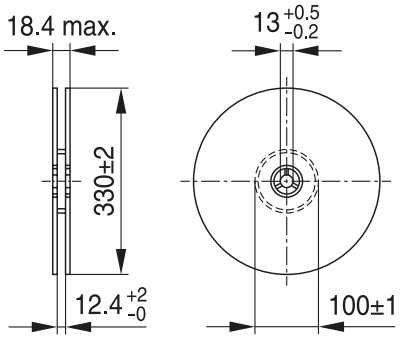
Taping and packing

Blister tape



IND1513-A-E

Reel



IND1526-N

Dimensions in mm

Common-mode chokes, EIA 1210

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Technical data and measuring conditions

Rated voltage V_R	80 V DC
Max. component temperature	+150 °C
Rated current I_R	Referred to 50 Hz and +20 °C
Rated inductance L_R	Measured with Keysight E4990A at 100 kHz, 100 mV, +20 °C, inductance is specified in common-mode
Inductance tolerance	–30/+50% at +20 °C
Stray inductance $L_{stray,typ}$	Measured with Keysight E4990A at 100 kHz, 100 mV, +20 °C, typical values
DC resistance R_{max}	Measured at +20 °C, specified per winding
Insulation resistance $R_{iso,min}$	10 MΩ, measured at 50 V DC
Rated impedance Z_{min}	Measured at +20 °C, 10 MHz, 100 mV in common-mode
Rated impedance Z_{typ}	Measured at +20 °C, 10 MHz, 100 mV in common-mode
Solderability	Dip and look method Sn95.5Ag3.8Cu0.7: +(245 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 90% (based on IEC 60068-2-58)
Resistance to soldering heat	+260 °C, 40 s as referenced in JEDEC J-STD 020D
Climatic category	55/150/56 (to IEC 60068-1)
Storage conditions (packaged)	–25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 0.075 g

Characteristics and ordering codes

L_R µH	$L_{stray,typ}$ µH	I_R mA	R_{max} Ω	Z_{min} Ω	Z_{typ} Ω	Internal code	Ordering code
11	0.05	300	0.4	300	550	B82786C0113H002	ACT1210-110-2P-TL00
22	0.06	250	0.5	500	1100	B82786C0223H002	ACT1210-220-2P-TL00
51	0.09	200	0.7	1000	2600	B82786C0513H002	ACT1210-510-2P-TL00
100	0.13	150	1.5	2200	5100	B82786C0104H002	ACT1210-101-2P-TL00

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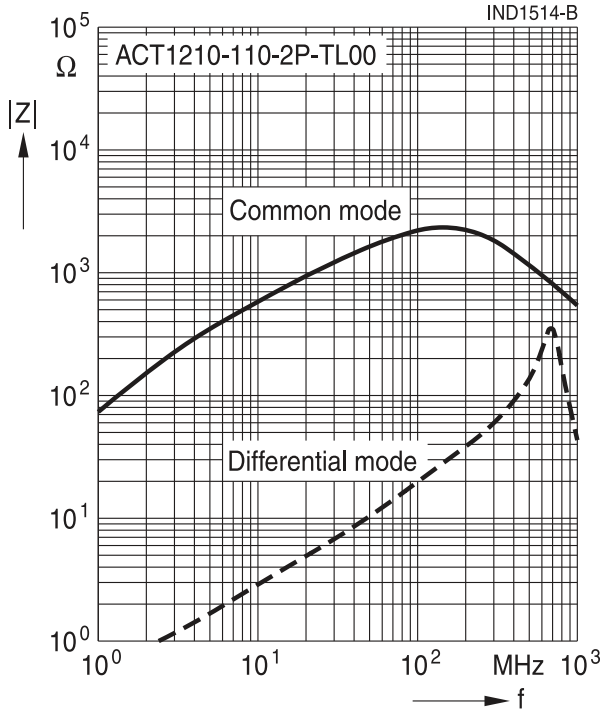
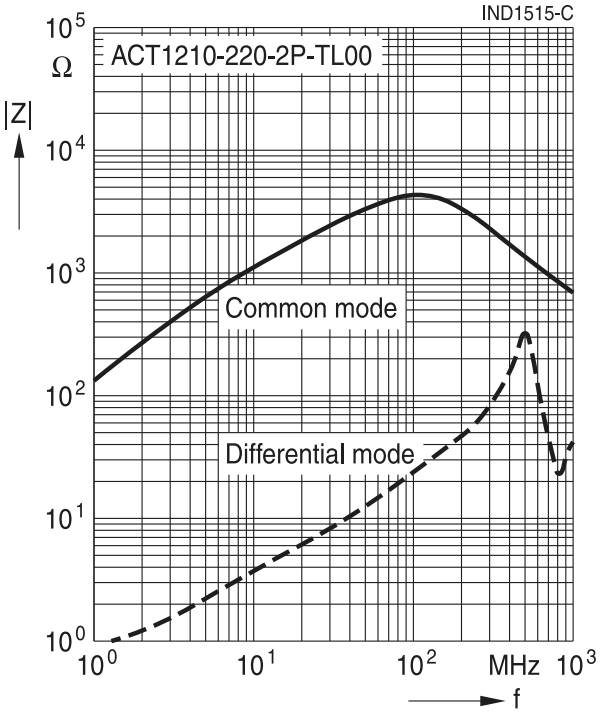
Impedance versus frequency (typical values)

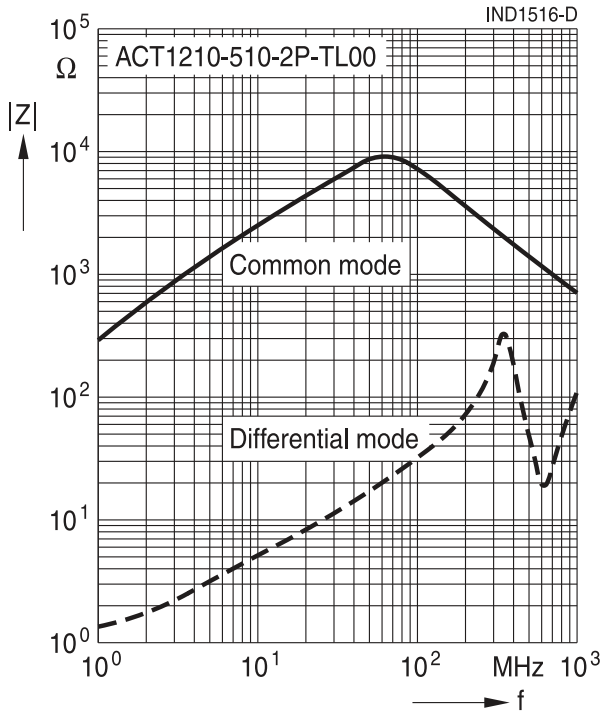
ACT1210-110-2P-TL00



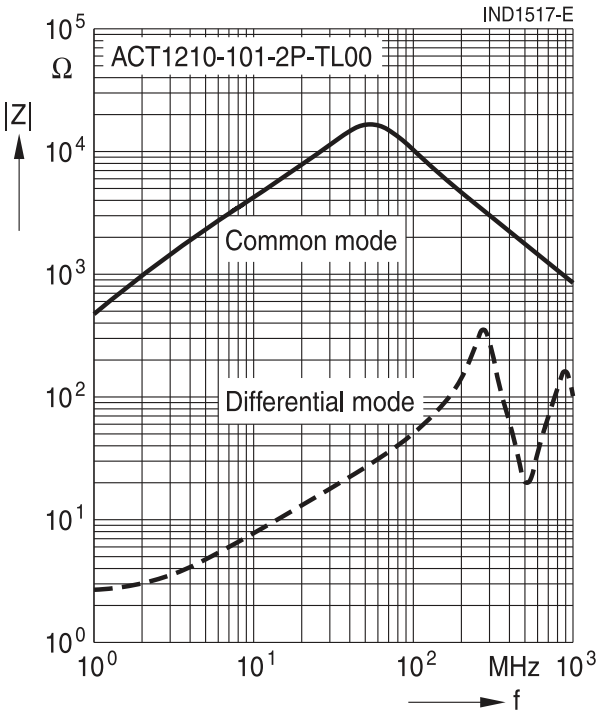
ACT1210-220-2P-TL00



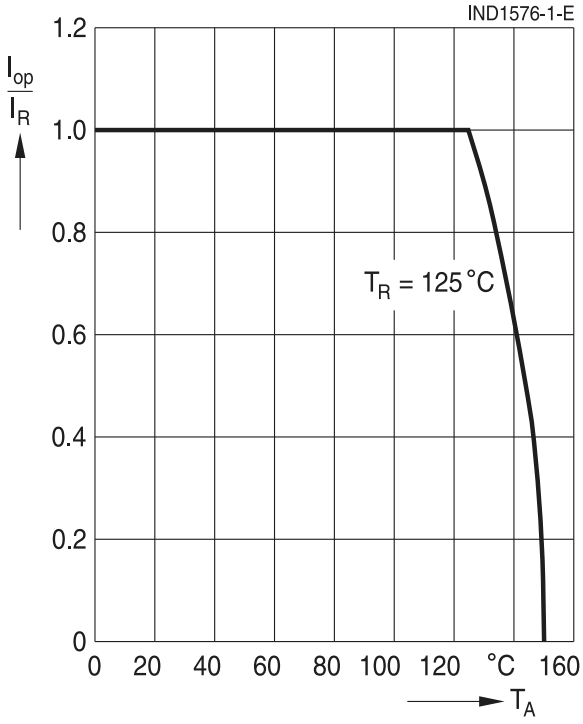
ACT1210-510-2P-TL00



ACT1210-101-2P-TL00



Current derating I_{op}/I_R versus ambient temperature



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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   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

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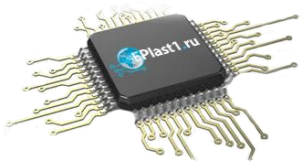
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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