



## **SMT inductors**

SIMID series, SIMID 1210-100

**Series/Type:**            **B82422A\*100**

**Date:**                    September 2019

### SMD

**Size 1210 (EIA) or 3225 (IEC)**  
**Rated inductance 0.0082 ... 100  $\mu$ H**  
**Rated current 65 ... 800 mA**



#### Construction

- Ceramic or ferrite core
- Laser-welded winding
- Flame-retardant molding

#### Features

- Temperature range up to +145 °C
- High Q factor
- High resonance frequency
- Qualified to AEC-Q200
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020D
- RoHS-compatible

#### Applications

- Filtering of supply voltages, coupling, decoupling
- Antenna systems
- Automotive electronics
- Telecommunications
- Consumer and data processing equipment
- Industrial electronics

#### Terminals

- Base material CuSn6
- Layer composition Cu, Ag, Sn (lead-free)<sup>1)</sup>
- Electro-plated

#### Marking

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

#### Delivery mode and packing units

- 8-mm blister tape, wound on 180-mm or 330-mm  $\varnothing$  reel
- Packing units:  
 180-mm reel: 2000 pcs./reel  
 330-mm reel: 8000 pcs./reel

1) Ni-barrier-plated terminals on request (B82422A\*150).



**SMD**
**Technical data and measuring conditions**

|  |   |
|--|---|
| Rated inductance $L_R$                         | Measured with impedance analyzer Agilent 4294A or equivalent at frequency $f_L$ , 0.1 V, +20 °C                                       |
| Q factor $Q_{\min}$                            | Measured with impedance analyzer Agilent 4294A or equivalent at frequency $f_Q$ , +20 °C  |
| Rated temperature $T_R$                        | +125 °C   |
| Rated current $I_R$                            | Maximum permissible DC with inductance decrease $\Delta L/L_0 \leq 10\%$ and temperature increase of $\leq 20$ K at rated temperature |
| Self-resonance frequency $f_{\text{res},\min}$ | Measured with impedance analyzer Agilent E4991A / network analyzer Agilent E8362B or equivalent at +20 °C                             |
| DC resistance $R_{\max}$                       | Measured at +20 °C  |
| Solderability (lead-free)                      | Sn95.5Ag3.8Cu0.7: +(245 ±5) °C, (5 ±0.3) s<br>Wetting of soldering area $\geq 90\%$<br>(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                             | Mounted: -55 °C ... +150 °C<br>Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH  |
| Weight   | Approx. 50 mg   |

**SMD**
**Characteristics and ordering codes**

| $L_R$<br>$\mu\text{H}$ | Tolerance               | $f_L$<br>MHz | $Q_{\min}$ | $f_Q$<br>MHz | $I_R$<br>mA | $R_{\max}$<br>$\Omega$ | $f_{\text{res, min}}$<br>MHz | Ordering code <sup>1)2)</sup><br>( $\varnothing$ 180-mm reel) |
|------------------------|-------------------------|--------------|------------|--------------|-------------|------------------------|------------------------------|---|
| Core material: ceramic |                         |              |            |              |             |                        |                              |   |
| 0.0082                 | $\pm 5\% \triangleq J$  | 10           | 20         | 100          | 800         | 0.08                   | 4000                         | B82422A3829+100   |
| 0.010                  | $\pm 10\% \triangleq K$ | 10           | 20         | 100          | 750         | 0.09                   | 4000                         | B82422A3100+100   |
| 0.012                  |                         | 10           | 25         | 100          | 700         | 0.10                   | 3500                         | B82422A3120+100   |
| 0.015                  | $\pm 10\% \triangleq K$ | 10           | 27         | 100          | 640         | 0.12                   | 3000                         | B82422A3150+100   |
| 0.018                  |                         | 10           | 30         | 100          | 640         | 0.12                   | 2500                         | B82422A3180+100   |
| 0.022                  |                         | 10           | 30         | 100          | 600         | 0.14                   | 2500                         | B82422A3220+100   |
| 0.027                  |                         | 10           | 23         | 50           | 600         | 0.14                   | 1850                         | B82422A3270+100   |
| 0.033                  |                         | 10           | 20         | 50           | 540         | 0.17                   | 1700                         | B82422A3330+100   |
| 0.039                  |                         | 10           | 25         | 50           | 530         | 0.18                   | 1450                         | B82422A3390+100   |
| 0.047                  |                         | 10           | 26         | 50           | 510         | 0.19                   | 1350                         | B82422A3470+100   |
| 0.056                  |                         | 10           | 26         | 50           | 500         | 0.20                   | 1200                         | B82422A3560+100   |
| 0.068                  |                         | 10           | 27         | 50           | 480         | 0.21                   | 1150                         | B82422A3680+100   |
| 0.082                  |                         | 10           | 27         | 50           | 450         | 0.24                   | 1050                         | B82422A3820+100   |
| 0.10                   |                         | 10           | 25         | 50           | 440         | 0.26                   | 1000                         | B82422A3101+100   |
| 0.12                   |                         | 1            | 22         | 30           | 400         | 0.32                   | 880                          | B82422A3121+100   |
| 0.15                   |                         | 1            | 25         | 30           | 390         | 0.33                   | 850                          | B82422A3151+100   |
| 0.18                   |                         | 1            | 25         | 30           | 360         | 0.38                   | 800                          | B82422A3181+100   |
| 0.22                   |                         | 1            | 25         | 30           | 280         | 0.64                   | 700                          | B82422A3221+100   |
| 0.27                   | 1                       | 20           | 30         | 235          | 0.90        | 650                    | B82422A3271+100              |   |
| 0.33                   | 1                       | 22           | 30         | 200          | 1.3         | 580                    | B82422A3331+100              |   |
| 0.39                   | 1                       | 22           | 30         | 190          | 1.4         | 540                    | B82422A3391+100              |   |
| 0.47                   | 1                       | 22           | 30         | 150          | 2.2         | 480                    | B82422A3471+100              |   |
| 0.56                   | 1                       | 22           | 30         | 150          | 2.2         | 400                    | B82422A3561+100              |   |
| 0.68                   | 1                       | 22           | 30         | 145          | 2.4         | 280                    | B82422A3681+100              |   |
| 0.82                   | 1                       | 22           | 30         | 140          | 2.5         | 240                    | B82422A3821+100              |   |

Closer tolerances and special versions on request.

Higher currents possible at temperatures  $<T_R$  on request.

Sample kit available. Ordering code: B82422X100

For more information refer to chapter "Sample kits".

1) Replace the + by the code letter for the required inductance tolerance.

For reel size  $\varnothing$  330 mm the last digit has to be an »8«. Example: B82422A3829K108

2) For Ni-barrier-plated terminals replace the last three digits "100" by "150" (reel 180 mm) or "158" (reel 330 mm).

**SMD**
**Characteristics and ordering codes**

| $L_R$<br>$\mu\text{H}$ | Tolerance               | $f_L$<br>MHz | $Q_{\min}$ | $f_Q$<br>MHz | $I_R$<br>mA | $R_{\max}$<br>$\Omega$ | $f_{\text{res, min}}$<br>MHz | Ordering code <sup>1)2)</sup><br>( $\varnothing$ 180-mm reel) |
|------------------------|-------------------------|--------------|------------|--------------|-------------|------------------------|------------------------------|---|
| Core material: ferrite |                         |              |            |              |             |                        |                              |   |
| 1.0                    | $\pm 5\% \triangleq J$  | 1            | 20         | 7.96         | 380         | 0.34                   | 320                          | B82422A1102+100   |
| 1.2                    | $\pm 10\% \triangleq K$ | 1            | 20         | 7.96         | 370         | 0.37                   | 300                          | B82422A1122+100   |
| 1.5                    |                         | 1            | 20         | 7.96         | 340         | 0.50                   | 270                          | B82422A1152+100   |
| 1.8                    | $\pm 10\% \triangleq K$ | 1            | 25         | 7.96         | 290         | 0.60                   | 250                          | B82422A1182+100   |
| 2.2                    |                         | 1            | 25         | 7.96         | 270         | 0.75                   | 125                          | B82422A1222+100   |
| 2.7                    |                         | 1            | 25         | 7.96         | 240         | 0.88                   | 110                          | B82422A1272+100   |
| 3.3                    |                         | 1            | 27         | 7.96         | 200         | 1.20                   | 110                          | B82422A1332+100   |
| 3.9                    |                         | 1            | 27         | 7.96         | 190         | 1.40                   | 110                          | B82422A1392+100   |
| 4.7                    |                         | 1            | 27         | 7.96         | 150         | 2.20                   | 110                          | B82422A1472+100   |
| 5.6                    |                         | 1            | 27         | 7.96         | 140         | 2.60                   | 100                          | B82422A1562+100   |
| 6.8                    |                         | 1            | 27         | 7.96         | 135         | 2.80                   | 90                           | B82422A1682+100   |
| 8.2                    |                         | 1            | 27         | 7.96         | 130         | 3.00                   | 90                           | B82422A1822+100   |
| 10                     |                         | 1            | 27         | 2.52         | 180         | 1.60                   | 25                           | B82422A1103+100   |
| 12                     | 0.1                     | 27           | 2.52       | 175          | 1.65        | 23                     | B82422A1123+100              |   |
| 15                     | 0.1                     | 27           | 2.52       | 165          | 1.85        | 20                     | B82422A1153+100              |   |
| 18                     | 0.1                     | 27           | 2.52       | 155          | 2.00        | 17                     | B82422A1183+100              |   |
| 22                     | 0.1                     | 27           | 2.52       | 140          | 2.65        | 16                     | B82422A1223+100              |   |
| 27                     | 0.1                     | 27           | 2.52       | 120          | 3.70        | 15                     | B82422A1273+100              |   |
| 33                     | 0.1                     | 27           | 2.52       | 105          | 4.50        | 13                     | B82422A1333+100              |   |
| 39                     | 0.1                     | 27           | 2.52       | 90           | 6.30        | 12                     | B82422A1393+100              |   |
| 47                     | 0.1                     | 27           | 2.52       | 85           | 7.00        | 11                     | B82422A1473+100              |   |
| 56                     | 0.1                     | 27           | 2.52       | 85           | 6.75        | 9                      | B82422A1563+100              |   |
| 68                     | 0.1                     | 27           | 2.52       | 80           | 7.70        | 9                      | B82422A1683+100              |   |
| 82                     | 0.1                     | 27           | 2.52       | 70           | 10.0        | 8                      | B82422A1823+100              |   |
| 100                    | 0.1                     | 27           | 2.52       | 65           | 11.5        | 7                      | B82422A1104+100              |   |

Closer tolerances and special versions on request.

Higher currents possible at temperatures  $<T_R$  on request.

Sample kit available. Ordering code: B82422X100

For more information refer to chapter "Sample kits".

1) Replace the + by the code letter for the required inductance tolerance.

For reel size  $\varnothing$  330 mm the last digit has to be an »8«. Example: B82422A1104K108

2) For Ni-barrier-plated terminals replace the last three digits "100" by "150" (reel 180 mm) or "158" (reel 330 mm).

**SMD**

**Impedance  $|Z|$  versus frequency  $f$**   
measured with impedance analyzer  
Agilent E4991A, typical values at +20 °C



**Inductance  $L$  versus DC load current  $I_{DC}$**   
measured with LCR meter Agilent 4285A,  
typical values at +20 °C



**Q factor versus frequency  $f$**   
measured with impedance analyzer Agilent  
4294A/E4991A, typical values at +20 °C



**Current derating  $I_{op}/I_R$**   
versus ambient temperature  $T_A$   
(rated temperature  $T_R = +125$  °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, 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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The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.** Detailed information can be found on the Internet under [www.tdk-electronics.tdk.com/orderingcodes](http://www.tdk-electronics.tdk.com/orderingcodes).



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2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
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4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet ([www.tdk-electronics.tdk.com/material](http://www.tdk-electronics.tdk.com/material)). Should you have any more detailed questions, please contact our sales offices.
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## Important notes

7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard.**  
The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System.** For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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