



# SMT Inductors

**Series/Type: B82442A**

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B82442A1984A000	-	2020-04-03	2021-04-15	2022-04-15
B82442A1825K000	B82442T1825K000	2020-04-03	2021-04-15	2022-04-15
B82442A1825J000	B82442T1825J000	2020-04-03	2021-04-15	2022-04-15



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B82442A1824K000	B82442T1824K000	2020-04-03	2021-04-15	2022-04-15
B82442A1824J000	B82442T1824K000	2020-04-03	2021-04-15	2022-04-15
B82442A1823K000	B82442T1823K000	2020-04-03	2021-04-15	2022-04-15
B82442A1823J000	B82442T1823K000	2020-04-03	2021-04-15	2022-04-15
B82442A1822K000	B82442T1822K000	2020-04-03	2021-04-15	2022-04-15
B82442A1685K000	B82442T1685K000	2020-04-03	2021-04-15	2022-04-15
B82442A1685J000	B82442T1685J000	2020-04-03	2021-04-15	2022-04-15
B82442A1684K000	B82442T1684K000	2020-04-03	2021-04-15	2022-04-15
B82442A1684J000	B82442T1684K000	2020-04-03	2021-04-15	2022-04-15
B82442A1683K000	B82442T1683K000	2020-04-03	2021-04-15	2022-04-15
B82442A1683J000	B82442T1683K000	2020-04-03	2021-04-15	2022-04-15
B82442A1682K000	B82442T1682K000	2020-04-03	2021-04-15	2022-04-15
B82442A1565K000	B82442T1565K000	2020-04-03	2021-04-15	2022-04-15
B82442A1565J000	B82442T1565J000	2020-04-03	2021-04-15	2022-04-15
B82442A1564K000	B82442T1564K000	2020-04-03	2021-04-15	2022-04-15
B82442A1564J000	B82442T1564K000	2020-04-03	2021-04-15	2022-04-15
B82442A1563K000	B82442T1563K000	2020-04-03	2021-04-15	2022-04-15
B82442A1563J000	B82442T1563K000	2020-04-03	2021-04-15	2022-04-15
B82442A1562K000	B82442T1562K000	2020-04-03	2021-04-15	2022-04-15
B82442A1535A300	-	2020-04-03	2021-04-15	2022-04-15
B82442A1475K000	B82442T1475K000	2020-04-03	2021-04-15	2022-04-15
B82442A1475J000	B82442T1475J000	2020-04-03	2021-04-15	2022-04-15
B82442A1474K000	B82442T1474K000	2020-04-03	2021-04-15	2022-04-15
B82442A1474J000	B82442T1474K000	2020-04-03	2021-04-15	2022-04-15
B82442A1473K000	B82442T1473K000	2020-04-03	2021-04-15	2022-04-15
B82442A1473J000	B82442T1473K000	2020-04-03	2021-04-15	2022-04-15
B82442A1472K000	B82442T1472K000	2020-04-03	2021-04-15	2022-04-15
B82442A1395K000	B82442T1395K000	2020-04-03	2021-04-15	2022-04-15
B82442A1395J000	B82442T1395J000	2020-04-03	2021-04-15	2022-04-15
B82442A1394K000	B82442T1394K000	2020-04-03	2021-04-15	2022-04-15
B82442A1394J000	B82442T1394K000	2020-04-03	2021-04-15	2022-04-15
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B82442A1393J000	B82442T1393K000	2020-04-03	2021-04-15	2022-04-15
B82442A1392K000	B82442T1392K000	2020-04-03	2021-04-15	2022-04-15
B82442A1335K000	B82442T1335K000	2020-04-03	2021-04-15	2022-04-15
B82442A1335J000	B82442T1335J000	2020-04-03	2021-04-15	2022-04-15
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B82442A1334J000	B82442T1334K000	2020-04-03	2021-04-15	2022-04-15



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B82442A1333K000	B82442T1333K000	2020-04-03	2021-04-15	2022-04-15
B82442A1333J000	B82442T1333K000	2020-04-03	2021-04-15	2022-04-15
B82442A1332K000	B82442T1332K000	2020-04-03	2021-04-15	2022-04-15
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B82442A1275J000	B82442T1275J000	2020-04-03	2021-04-15	2022-04-15
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B82442A1274J000	B82442T1274K000	2020-04-03	2021-04-15	2022-04-15
B82442A1273K000	B82442T1273K000	2020-04-03	2021-04-15	2022-04-15
B82442A1272K000	B82442T1272K000	2020-04-03	2021-04-15	2022-04-15
B82442A1265A000	-	2020-04-03	2021-04-15	2022-04-15
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B82442A1225J000	B82442T1225J000	2020-04-03	2021-04-15	2022-04-15
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B82442A1224J000	B82442T1224K000	2020-04-03	2021-04-15	2022-04-15
B82442A1223K000	B82442T1223K000	2020-04-03	2021-04-15	2022-04-15
B82442A1222K000	B82442T1222K000	2020-04-03	2021-04-15	2022-04-15
B82442A1185K000	B82442T1185K000	2020-04-03	2021-04-15	2022-04-15
B82442A1185J000	B82442T1185J000	2020-04-03	2021-04-15	2022-04-15
B82442A1184K000	B82442T1184K000	2020-04-03	2021-04-15	2022-04-15
B82442A1184J000	B82442T1184K000	2020-04-03	2021-04-15	2022-04-15
B82442A1183K000	B82442T1183K000	2020-04-03	2021-04-15	2022-04-15
B82442A1182K000	B82442T1182K000	2020-04-03	2021-04-15	2022-04-15
B82442A1155K000	B82442T1155K000	2020-04-03	2021-04-15	2022-04-15
B82442A1155J000	B82442T1155J000	2020-04-03	2021-04-15	2022-04-15
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B82442A1154J000	B82442T1154K000	2020-04-03	2021-04-15	2022-04-15
B82442A1153K000	B82442T1153K000	2020-04-03	2021-04-15	2022-04-15
B82442A1152K000	B82442T1152K000	2020-04-03	2021-04-15	2022-04-15
B82442A1145A500	-	2020-04-03	2021-04-15	2022-04-15
B82442A1125K000	B82442T1125K000	2020-04-03	2021-04-15	2022-04-15
B82442A1125J000	B82442T1125J000	2020-04-03	2021-04-15	2022-04-15
B82442A1124K000	B82442T1124K000	2020-04-03	2021-04-15	2022-04-15
B82442A1124J000	B82442T1124K000	2020-04-03	2021-04-15	2022-04-15
B82442A1123K000	B82442T1123K000	2020-04-03	2021-04-15	2022-04-15
B82442A1122K000	B82442T1122K000	2020-04-03	2021-04-15	2022-04-15
B82442A1106K000	B82442T1106K000	2020-04-03	2021-04-15	2022-04-15
B82442A1106J000	B82442T1106J000	2020-04-03	2021-04-15	2022-04-15



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B82442A1105K000	B82442T1105K000	2020-04-03	2021-04-15	2022-04-15
B82442A1105J000	B82442T1105K000	2020-04-03	2021-04-15	2022-04-15
B82442A1104K000	B82442T1104K000	2020-04-03	2021-04-15	2022-04-15
B82442A1104J000	B82442T1104K000	2020-04-03	2021-04-15	2022-04-15
B82442A1103K000	B82442T1103K000	2020-04-03	2021-04-15	2022-04-15
B82442A1102K000	B82442T1102K000	2020-04-03	2021-04-15	2022-04-15

Please contact your nearest TDK sales office if you need support in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.tdk-electronics.tdk.com/sales](http://www.tdk-electronics.tdk.com/sales).

### SMD

**Size 2220 (EIA) or 5650 (IEC)**  
**Rated inductance 1 ... 10000  $\mu$ H**  
**Rated current 25 ... 1800 mA**



#### Construction

- Upright ferrite drum core
- Laser-welded winding
- Flame-retardant molding

#### Features

- Temperature range up to +150 °C
- Current handling capability up to 1.8 A
- High inductance ratings
- 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
- DC/DC converters
- Automotive electronics
- Telecommunications  
(e.g. blocking filter for 12- and 16-kHz counting pulses)
- Consumer electronics
- 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 (YWWDD)
- Minimum data on reel:  
Manufacturer, ordering code, L value, quantity, date of packing

#### Delivery mode and packing unit

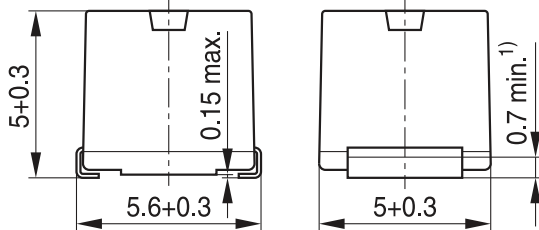
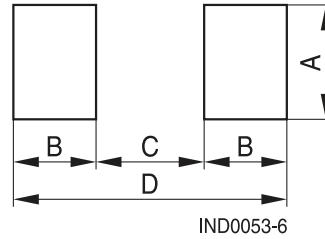
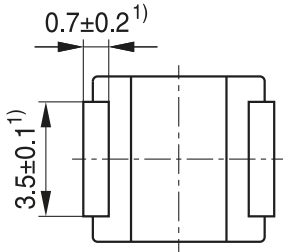
- 12-mm blister tape, wound on 330-mm  $\varnothing$  reel
- Packing unit: 1500 pcs./reel

1) Ni-barrier-plated terminals on request (B82442A\*50).

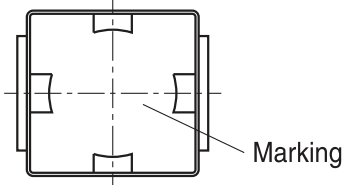
**SIMID 2220-A**

**SMD**

**Dimensional drawing and layout recommendation**



A	B	C	D
4.5	2.0	4.0	8.0



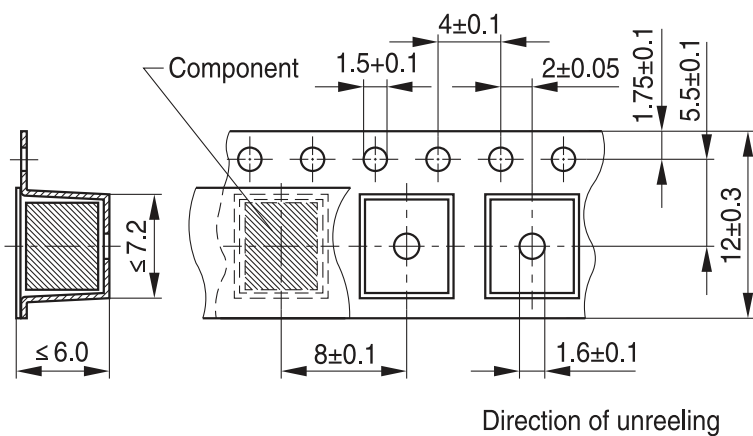
1) Soldering area

IND0088-3-E

Dimensions in mm

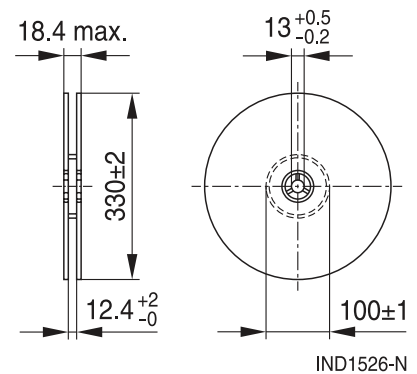
**Taping and packing**

**Blister tape**



IND0564-H-E

**Reel**



IND1526-N

**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 $T_R$	+105 °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 $f_{res,min}$	Measured with impedance analyzer Agilent 4294A or equivalent, +20 °C
DC resistance $R_{max}$	Measured at +20 °C
Solderability (lead-free)	Sn95.5Ag3.8Cu0.7: +(245 ±5) °C, (5 ±0.3) s Wetting of soldering area $\geq 90\%$ (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	Mounted: -55 °C ... +150 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 0.4 g

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

$L_R$ $\mu\text{H}$	Tolerance	$Q_{\min}$	$f_L; f_Q$ MHz	$I_R$ mA	$R_{\max}$ $\Omega$	$f_{\text{res,min}}$ MHz	Ordering code <sup>1)2)</sup>	
1.0	$\pm 10\% \triangleq K$	10	7.96	1800	0.024	95	B82442A1102K000	
1.2		10	7.96	1700	0.028	70	B82442A1122K000	
1.5		10	7.96	1600	0.032	55	B82442A1152K000	
1.8		10	7.96	1400	0.040	47	B82442A1182K000	
2.2		10	7.96	1300	0.048	42	B82442A1222K000	
2.7		10	7.96	1200	0.056	37	B82442A1272K000	
3.3		10	7.96	1120	0.064	34	B82442A1332K000	
3.9		10	7.96	1050	0.072	32	B82442A1392K000	
4.7		10	7.96	950	0.088	29	B82442A1472K000	
5.6		10	7.96	880	0.104	26	B82442A1562K000	
6.8		10	7.96	810	0.120	24	B82442A1682K000	
8.2		10	7.96	750	0.144	22	B82442A1822K000	
10		10	2.52	690	0.168	19	B82442A1103K000	
12		10	2.52	630	0.20	17	B82442A1123K000	
15		10	2.52	580	0.24	16	B82442A1153K000	
18	10	2.52	530	0.29	14	B82442A1183K000		
22	10	2.52	480	0.35	13	B82442A1223K000		
27	10	2.52	440	0.42	11.5	B82442A1273K000		
33	$\pm 5\% \triangleq J$	10	2.52	400	0.50	10.5	B82442A1333+000	
39		$\pm 10\% \triangleq K$	10	2.52	370	0.58	9.5	B82442A1393+000
47			10	2.52	340	0.68	8.5	B82442A1473+000
56			10	2.52	310	0.80	7.8	B82442A1563+000
68		10	2.52	290	0.96	7.0	B82442A1683+000	
82		10	2.52	270	1.12	6.4	B82442A1823+000	
100		20	0.796	250	1.28	6.0	B82442A1104+000	
120		20	0.796	230	1.52	5.4	B82442A1124+000	
150		20	0.796	210	1.76	4.8	B82442A1154+000	
180	20	0.796	190	2.24	4.4	B82442A1184+000		

Closer tolerances on request.

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

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

2) For Ni-barrier-plated terminals replace the last two digits "00" by "50".



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

$L_R$ $\mu\text{H}$	Tolerance	$Q_{\min}$	$f_L; f_Q$ MHz	$I_R$ mA	$R_{\max}$ $\Omega$	$f_{\text{res, min}}$ MHz	Ordering code <sup>1)2)</sup>
220	$\pm 5\% \triangleq J$	20	0.796	170	2.72	3.9	B82442A1224+000
270	$\pm 10\% \triangleq K$	20	0.796	155	3.36	3.6	B82442A1274+000
330		20	0.796	140	3.92	3.2	B82442A1334+000
390		20	0.796	130	4.64	2.9	B82442A1394+000
470		20	0.796	120	5.60	2.6	B82442A1474+000
560		20	0.796	110	6.80	2.4	B82442A1564+000
680		20	0.796	100	8.00	2.2	B82442A1684+000
820		20	0.796	90	10.4	2.0	B82442A1824+000
1000		30	0.252	85	12.0	1.8	B82442A1105+000
1200		30	0.252	75	13.6	1.5	B82442A1125+000
1500		30	0.252	70	16.0	1.4	B82442A1155+000
1800		30	0.252	60	24.0	1.3	B82442A1185+000
2200		30	0.252	55	28.0	1.2	B82442A1225+000
2700		30	0.252	45	44.0	1.1	B82442A1275+000
3300		30	0.252	40	48.0	1.0	B82442A1335+000
3900		30	0.252	38	56.0	1.0	B82442A1395+000
4700	30	0.252	36	62.4	0.9	B82442A1475+000	
5600	30	0.252	33	68.0	0.8	B82442A1565+000	
6800	30	0.252	30	88.0	0.7	B82442A1685+000	
8200	30	0.252	28	100	0.6	B82442A1825+000	
10000	30	0.0796	25	120	0.5	B82442A1106+000	

For telecommunications in blocking filter for 12- and 16-kHz counting pulses

980	$\pm 3\% \triangleq A$	8	0.016	85	15	1.8	B82442A1984A000
1450		8	0.016	70	20	1.4	B82442A1145A500
2600		6	0.012	45	43	1.1	B82442A1265A000
3050		8	0.016	45	45	0.9	B82442A1305A500
5330		6	0.012	34	66	0.8	B82442A1535A300

Closer tolerances on request.

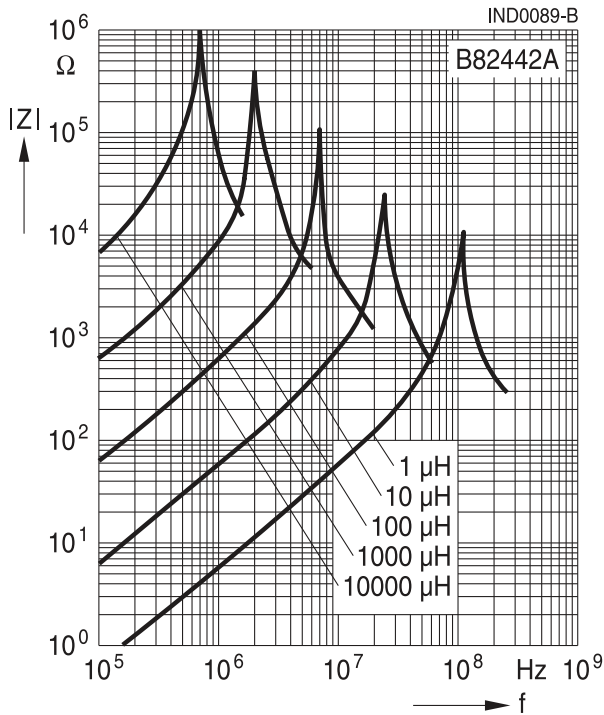
Higher currents possible at temperatures  $< T_R$  on request.

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

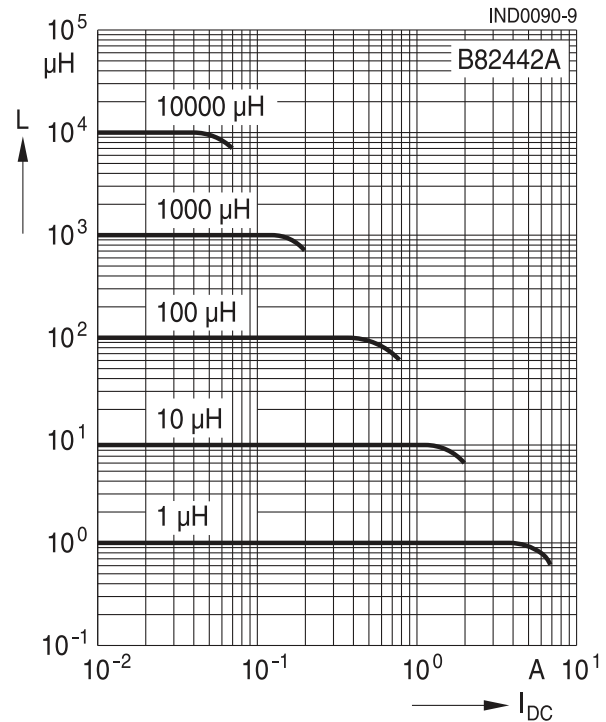
2) For Ni-barrier-plated terminals replace the last two digits "00" by "50".

**SMD**

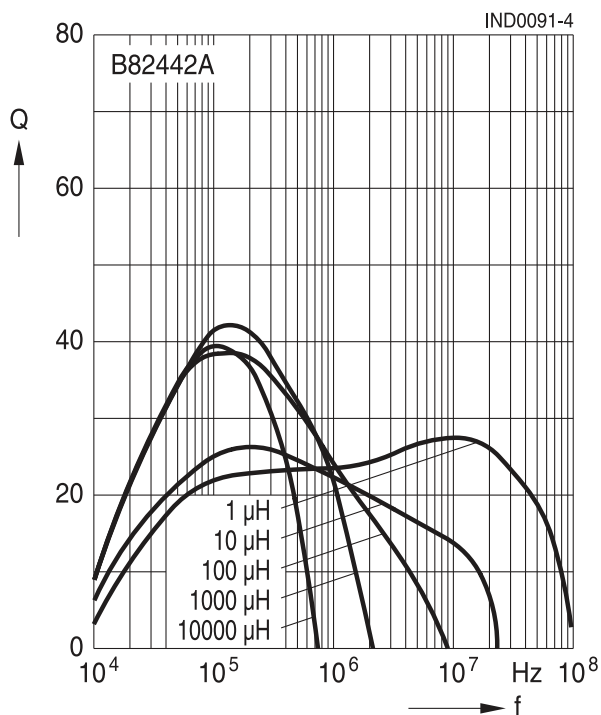
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A/E4991A, typical values at +20 °C



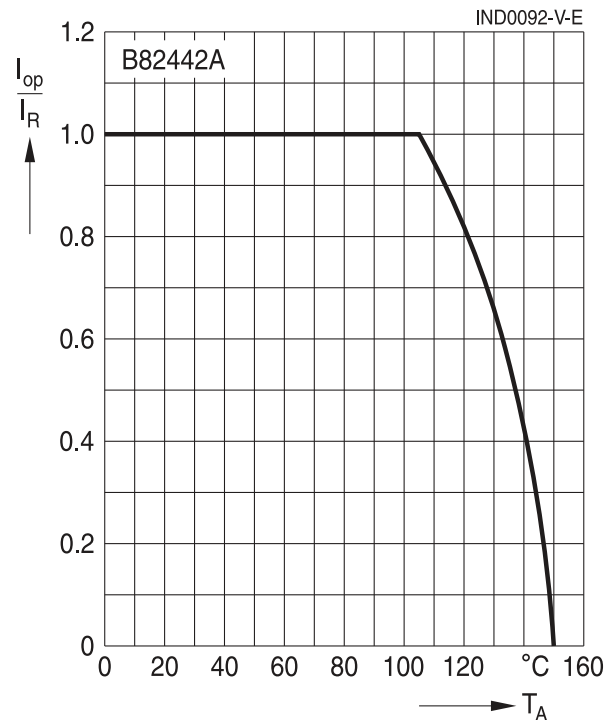
**Inductance  $L$  versus DC load current  $I_{DC}$**   
 measured with LCR meter Agilent 4285A,  
 typical values at +20 °C



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



**Current derating  $I_{op}/I_R$**   
**versus ambient temperature  $T_A$**   
 (rated temperature  $T_R = +105$  °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.

### Display of ordering codes for TDK Electronics products

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).

## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
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.
3. **The warnings, cautions and product-specific notes must be observed.**
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.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.  
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.
6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.

## 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.
8. The trade names EPCOS, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, ExoCore, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at [www.tdk-electronics.tdk.com/trademarks](http://www.tdk-electronics.tdk.com/trademarks).

Release 2018-10