



## **SMT inductors**

SIMID series, SIMID 1210-H100

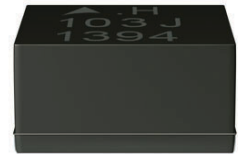
**Series/Type:** B82422H1\*100

**Date:** October 2012

**SIMID 1210-H100**

**SMD**

**High current version**  
**Size 1210 (EIA) or 3225 (IEC)**  
**Rated inductance 1 ... 100  $\mu$ H**  
**Rated current 90 ... 650 mA**



**Construction**

- Ferrite core
- Laser-welded winding
- Flame-retardant encapsulation

**Features**

- Very high current handling capability
- Qualified to AEC-Q200
- Suitable for lead-free soldering as referenced in JEDEC J-STD 020
- RoHS-compatible

**Applications**

- Filtering of supply voltages, coupling, decoupling
- DC/DC converters
- Automotive electronics
- Telecommunications

**Terminals**

- Base material CuSn6
- Layer composition Cu, Ag, Sn (lead-free)
- Electro-plated

**Marking**

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

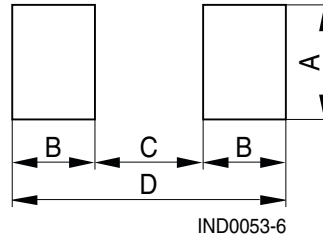
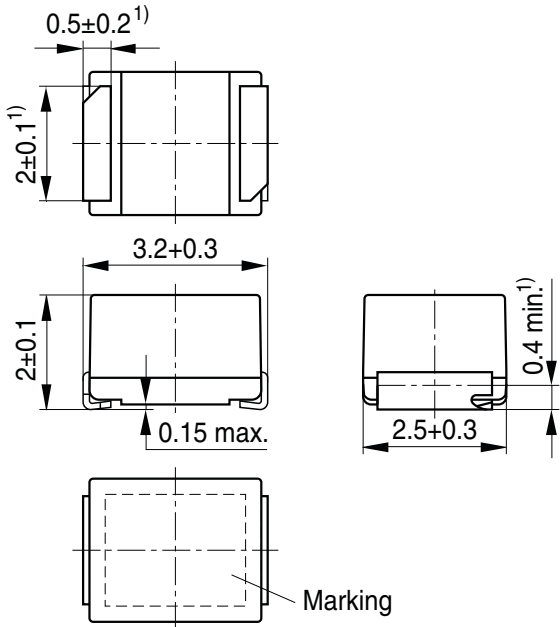
**Delivery mode and packing units**

- 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

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**Dimensional drawing and layout recommendation**



IND0053-6

A	B	C	D
2.7	1.15	2.1	4.4

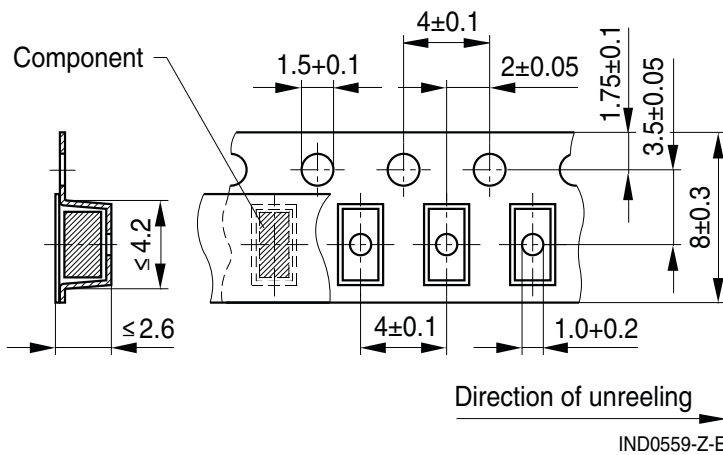
1) Soldering area

IND0073-6-E

Dimensions in mm

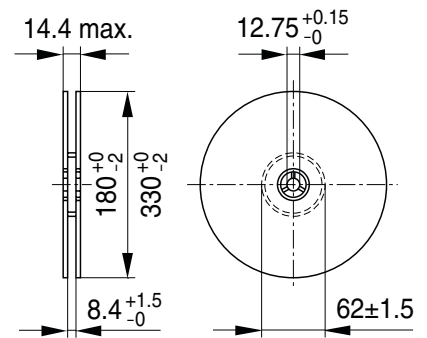
**Taping and packing**

Blister tape



IND0559-Z-E

Reel



IND0592-V

Dimensions in mm

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

Rated inductance $L_R$	Measured with impedance analyzer Agilent 4294A and test fixture Agilent 16034H at frequency $f_L$ , RMS voltage 0.1 V, +20 °C
Q factor $Q_{min}$	Measured with impedance analyzer Agilent 4294A and test fixture Agilent 16034H at frequency $f_Q$ , RMS voltage 0.1 V, +20 °C
Rated temperature $T_R$	+85 °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 RF impedance / material analyzer Agilent E4991A and network analyzer Agilent 8362B, +20 °C
DC resistance $R_{max}$	Measured with Burster Resistomat 2329, +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 020)
Climatic category	55/125/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +125 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 50 mg

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

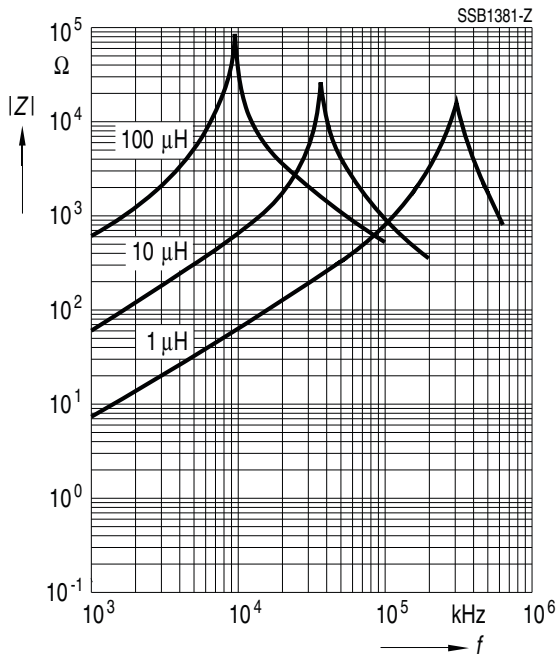
$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$Q_{\min}$	$f_Q$ MHz	$I_R$ mA	$R_{\max}$ $\Omega$	$f_{\text{res, min}}$ MHz	Ordering code ( $\varnothing$ 180-mm reel)
Core material: ferrite								
1.0	$\pm 10\% \triangleq K$	1	10	7.96	650	0.22	200	B82422H1102K100
1.5		1	10	7.96	600	0.27	120	B82422H1152K100
2.2		1	10	7.96	560	0.33	85	B82422H1222K100
3.3		1	10	7.96	500	0.42	60	B82422H1332K100
4.7		1	10	7.96	430	0.48	46	B82422H1472K100
6.8		1	10	7.96	380	0.75	38	B82422H1682K100
10		1	15	2.52	300	1.20	30	B82422H1103K100
15		0.1	15	2.52	260	1.50	26	B82422H1153K100
22		0.1	15	2.52	220	2.40	22	B82422H1223K100
27		0.1	15	2.52	200	3.00	20	B82422H1273K100
33		0.1	15	2.52	180	3.30	17	B82422H1333K100
39		0.1	15	2.52	180	4.10	15	B82422H1393K100
47		0.1	15	2.52	140	4.70	14	B82422H1473K100
68		0.1	15	2.52	110	7.70	9	B82422H1683K100
100		0.1	27	2.52	65	11.5	7	B82422H1104K100

Closer tolerances and special versions on request.

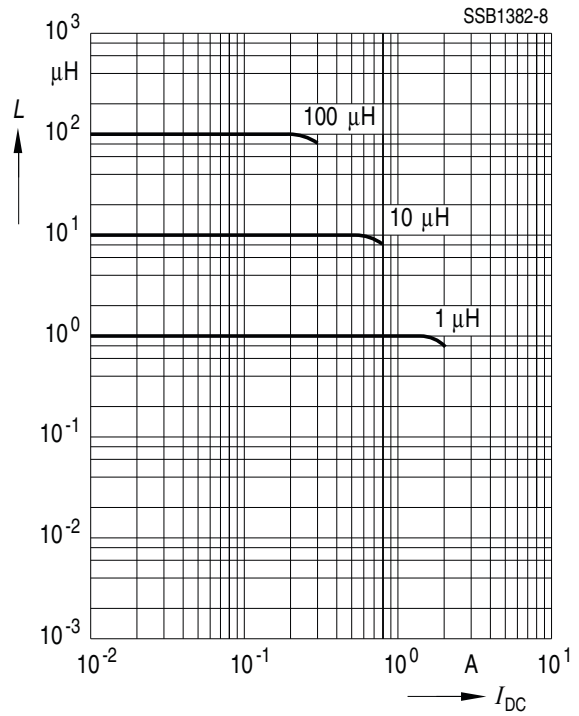
Higher currents possible at temperatures  $< T_R$  on request.

**SMD**

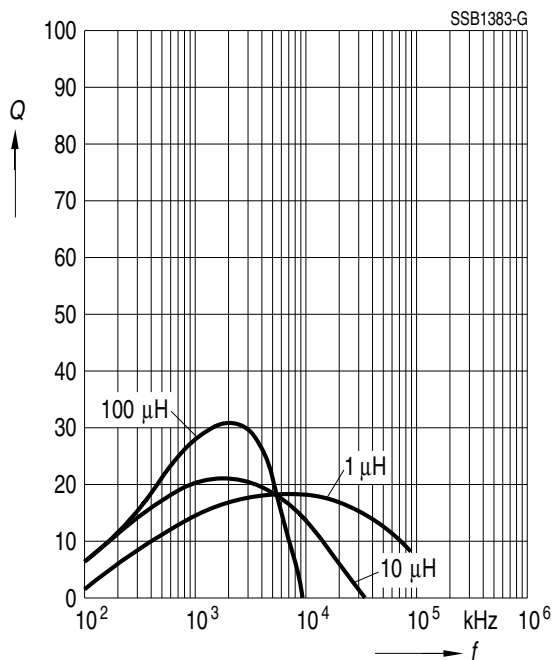
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance /material analyzer  
 Agilent E4991A, typical values at +20 °C



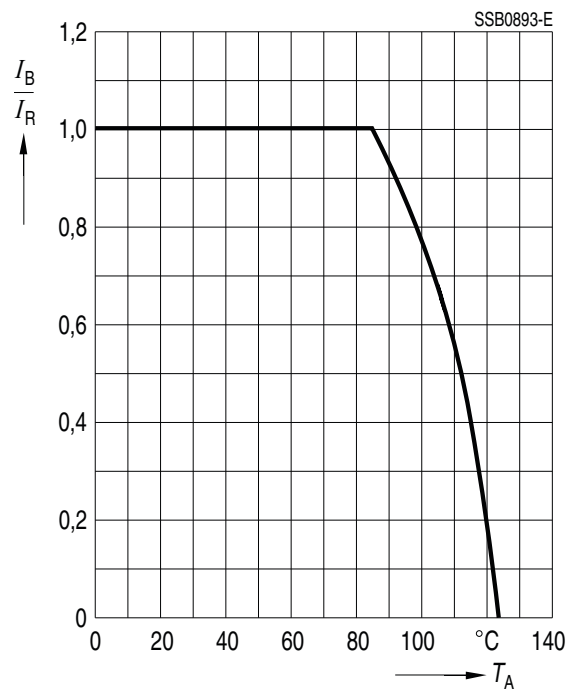
**Inductance  $L$  versus DC load current  $I_{DC}$**   
 measured with LCR meter Agilent 4285A,  
 typical values at +20 °C



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



**Current derating  $I_{op}/I_R$**   
**versus ambient temperature  $T_A$**   
 (rated temperature  $T_R = +85$  °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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