



## **SMT inductors**

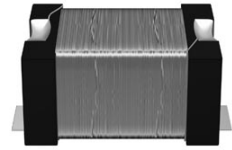
SIMID series, SIMID 1210-01

**Series/Type:** B82412A  
**Date:** March 2008

**SIMID 1210-01**

**SMD**

**Size 1210 (EIA) or 3225 (IEC)**  
**Rated inductance 0.010  $\mu$ H to 10  $\mu$ H**  
**Rated current 90 mA to 700 mA**



**Construction**

- Ceramic or ferrite core
- Single-layer winding fixed by glue
- Ultrasonic-welded winding

**Features**

- Low height
- High Q factor
- High resonance frequency
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020C
- RoHS-compatible

**Applications**

- Filtering of supply voltages, coupling, decoupling
- Antenna systems
- Infotainment
- Telecommunications
- Industrial electronics

**Terminals**

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

**Marking**

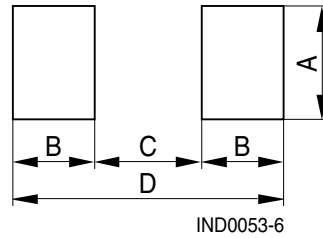
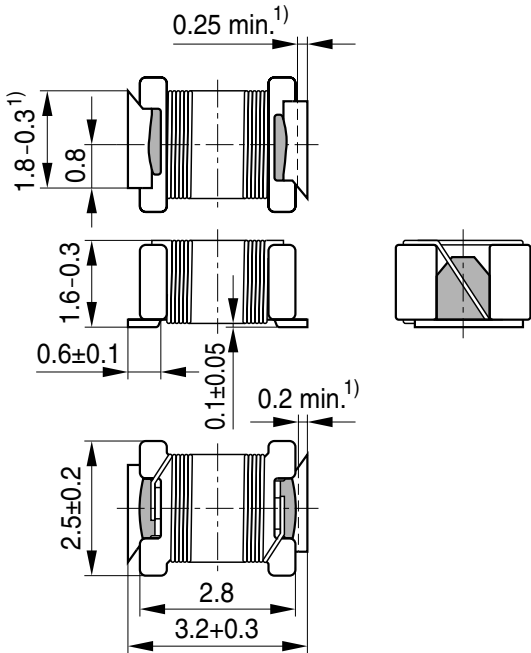
- No marking on component
- Minimum data on reel:  
Manufacturer, ordering code, L value,  
quantity, date of packing

**Delivery mode and packing units**

- 8-mm blister tape, wound on 180-mm or 330-mm  $\varnothing$  reel
- Packing units:  
180-mm reel: 2500 pcs./reel  
330-mm reel: 10000 pcs./reel

**SMD**

**Dimensional drawing and layout recommendation**



IND0053-6

A	B	C	D
2.7	1.15	2.1	4.4

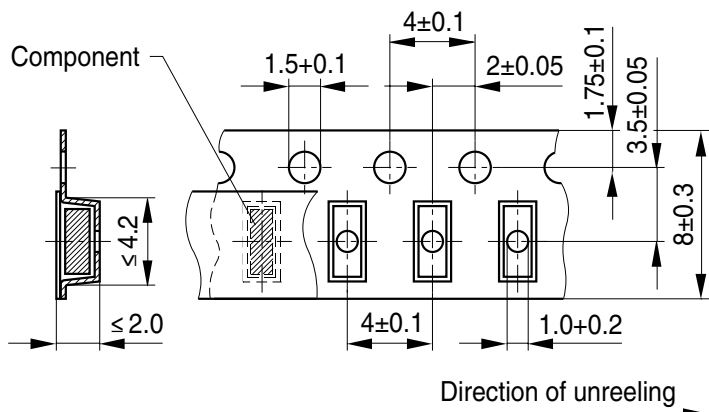
1) Soldering area

IND0052-V-E

Dimensions in mm

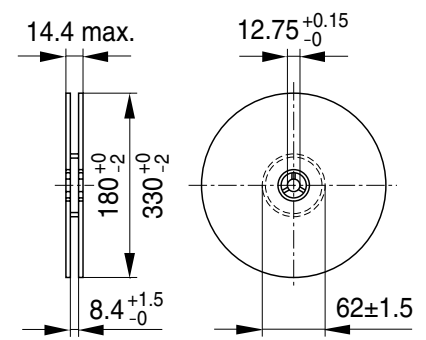
**Taping and packing**

Blister tape



IND0570-T-E

Reel



IND0592-V

Dimensions in mm

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

Rated inductance $L_R$	Measured with impedance analyzer Agilent 4294A at frequency $f_L$ , 0.1 V, 20 °C
Q factor $Q_{\min}$	Measured with impedance analyzer Agilent 4294A at frequency $f_Q$ , 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 $f_{\text{res,min}}$	Measured with network analyzer Agilent 8753D, 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 $\geq 95\%$ (based on IEC 60068-2-58)
Resistance to soldering heat	260 °C, 40 s (as referenced in JEDEC J-STD 020C)
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. 40 mg

**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 <sup>1)</sup> ( $\varnothing$ 180-mm reel)
Core material: ceramic								
0.010	$\pm 20\% \triangle M$	10	25	100	700	0.10	4000	B82412A3100M000
0.012		10	25	100	700	0.10	3500	B82412A3120M000
0.015		10	25	100	640	0.12	3000	B82412A3150M000
0.018		10	30	100	640	0.12	2700	B82412A3180M000
0.022	$\pm 5\% \triangle J$ $\pm 10\% \triangle K$	10	30	100	600	0.12	2400	B82412A3220+000
0.027		10	20	50	600	0.15	2200	B82412A3270+000
0.033		10	25	50	540	0.17	2000	B82412A3330+000
0.039		10	25	50	500	0.18	1700	B82412A3390+000
0.047		10	25	50	470	0.22	1600	B82412A3470+000
0.056		10	30	50	460	0.23	1400	B82412A3560+000
0.068		10	30	50	440	0.25	1350	B82412A3680+000
0.082		10	30	50	430	0.27	1100	B82412A3820+000
0.10		10	30	50	400	0.30	1000	B82412A3101+000
0.12		1	25	30	380	0.35	900	B82412A3121+000
0.15		1	25	30	370	0.36	820	B82412A3151+000
0.18		1	25	30	340	0.42	700	B82412A3181+000
0.22		1	25	30	320	0.48	630	B82412A3221+000
0.27		1	30	30	300	0.55	570	B82412A3271+000
0.33		1	30	30	280	0.65	550	B82412A3331+000
0.39		1	30	30	260	0.75	500	B82412A3391+000
0.47		1	30	30	225	1.00	450	B82412A3471+000
0.56		1	30	30	200	1.20	430	B82412A3561+000
0.68		1	30	30	180	1.40	400	B82412A3681+000
0.82		1	30	30	150	2.00	380	B82412A3821+000

Closer tolerances and special versions on request.

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: B82412A3100M008

**Characteristics and ordering codes**

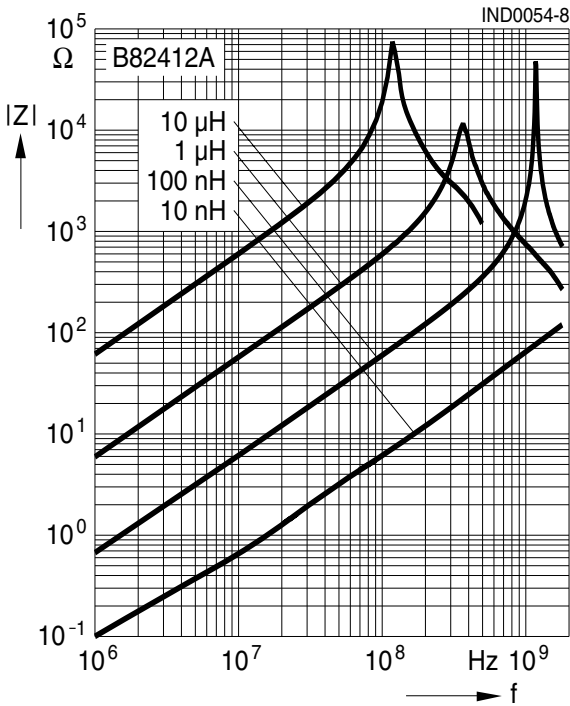
$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$Q_{\min}$	$f_Q$ MHz	$I_R$ mA	$R_{\max}$ $\Omega$	$f_{\text{res,min}}$ MHz	Ordering code <sup>1)</sup> ( $\varnothing$ 180-mm reel)
Core material: ferrite								
1.0	$\pm 5\% \triangleq J$	1	30	7.96	330	0.45	300	B82412A1102+000
1.2	$\pm 10\% \triangleq K$	1	30	7.96	310	0.50	260	B82412A1122+000
1.5		1	30	7.96	300	0.55	240	B82412A1152+000
1.8		1	30	7.96	290	0.60	220	B82412A1182+000
2.2		1	30	7.96	270	0.65	200	B82412A1222+000
2.7		1	30	7.96	220	1.05	180	B82412A1272+000
3.3		1	30	7.96	200	1.10	160	B82412A1332+000
3.9		1	30	7.96	190	1.35	150	B82412A1392+000
4.7		1	35	7.96	160	1.80	140	B82412A1472+000
5.6		1	35	7.96	140	2.70	125	B82412A1562+000
6.8		1	35	7.96	120	3.50	115	B82412A1682+000
8.2		1	35	7.96	110	3.80	100	B82412A1822+000
10		1	35	7.96	90	5.50	95	B82412A1103+000

Closer tolerances and special versions on request.

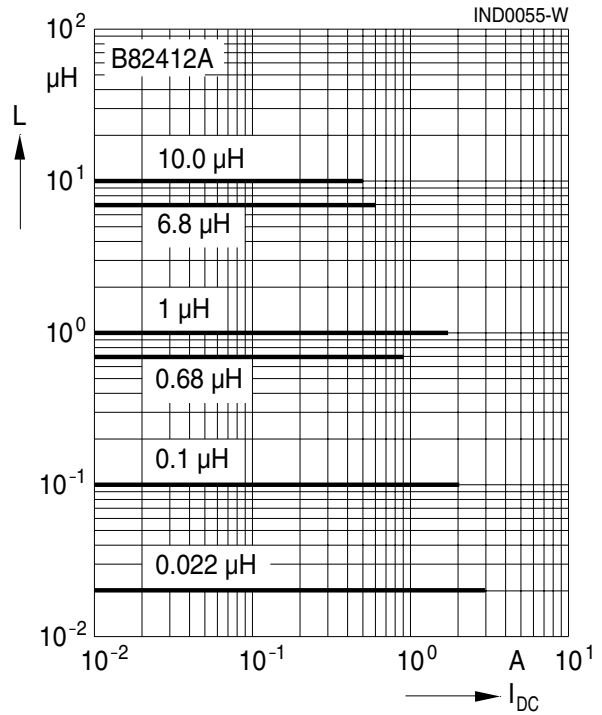
1) Replace the + by the code letter for the required inductance tolerance.  
For reel size  $\varnothing$  330 mm the last digit has to be an »8«. Example: B82412A1102M008

**SMD**

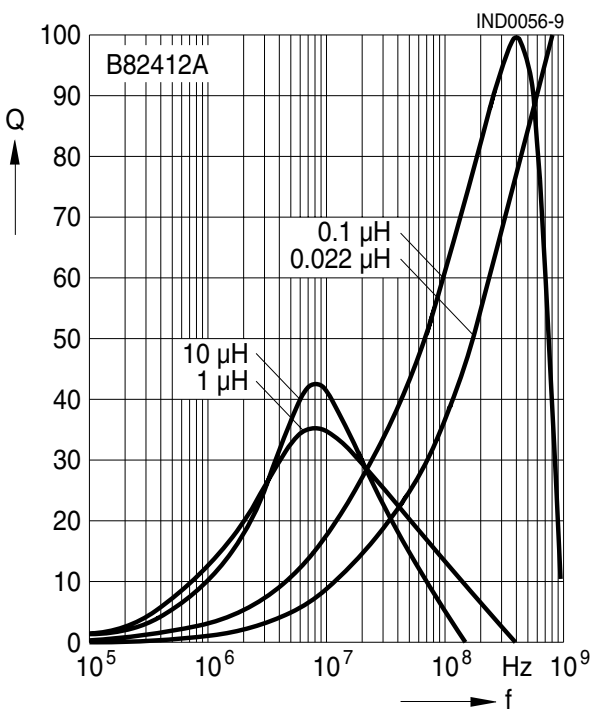
**Impedance  $|Z|$  versus frequency  $f$**   
measured with impedance analyzer  
Agilent 4291A, typical values at 20 °C



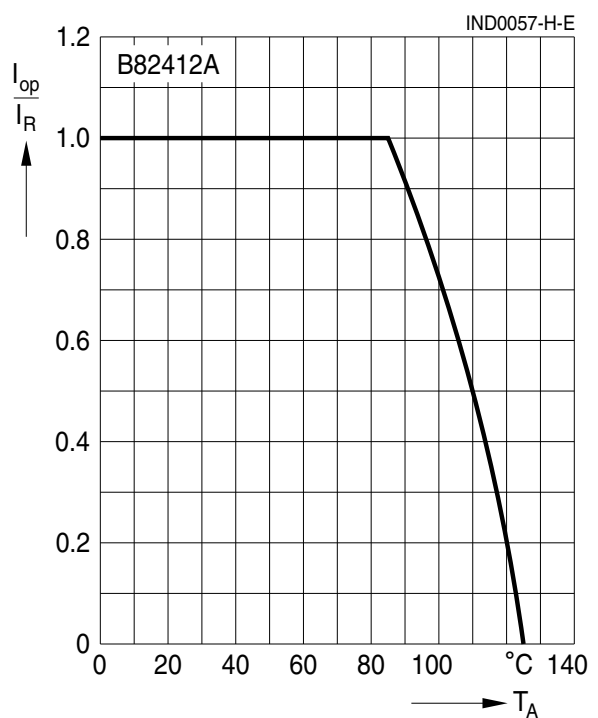
**Inductance  $L$  versus DC load current  $I_{DC}$**   
measured with LCR meter Agilent 4275A,  
typical values at 20 °C



**Q factor versus frequency  $f$**   
measured with impedance analyzer Agilent  
4194A/4291A, 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.
- 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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