



## **SMT inductors**

SIMID series, SIMID 1210-T

**Series/Type:** B82422T  
**Date:** March 2008

SIMID 1210-T

SMD

Size 1210 (EIA) or 3225 (IEC)  
Rated inductance 0.010  $\mu\text{H}$  to 100  $\mu\text{H}$   
Rated current 60 mA to 450 mA



**Construction**

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

**Features**

- High Q factor
- High resonance frequency
- High L value
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020C
- Qualified to AEC-Q200
- 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 and letter "T", L value (in  $\mu\text{H}$ ), tolerance of L value (coded), date of manufacture (YWWD)
- Minimum data on reel:  
Manufacturer, ordering code, L value, quantity, date of packing

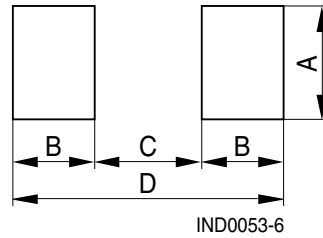
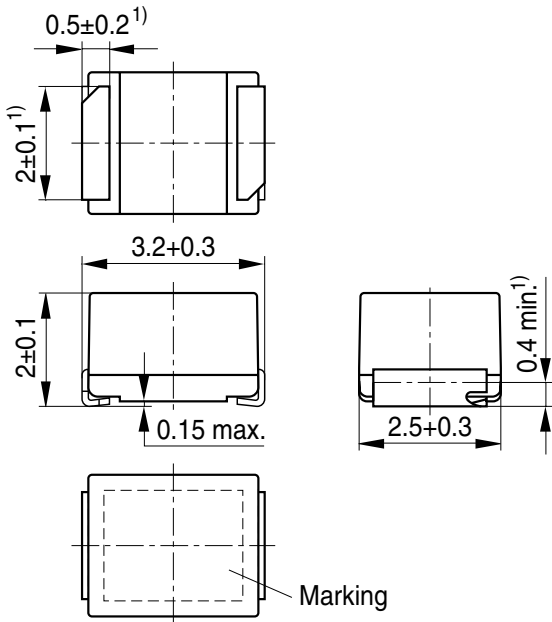
**Delivery mode and packing units**

- 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 (NiSn) on request (B82422T\*50).

**SMD**

**Dimensional drawing and layout recommendation**



IND0053-6

A	B	C	D
2.7	1.15	2.1	4.4

1) Soldering area

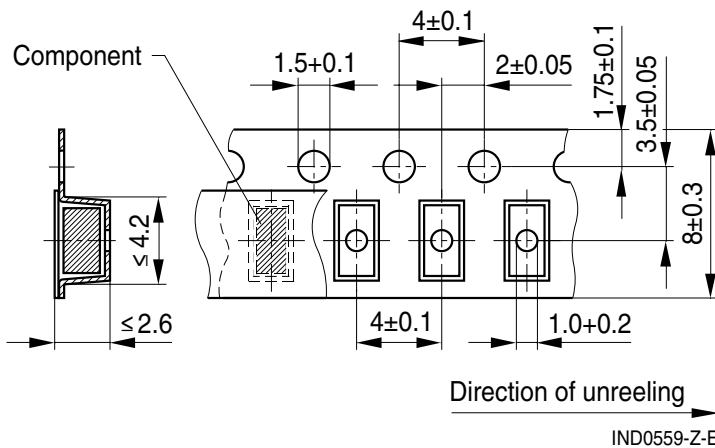
IND0073-6-E

Dimensions in mm

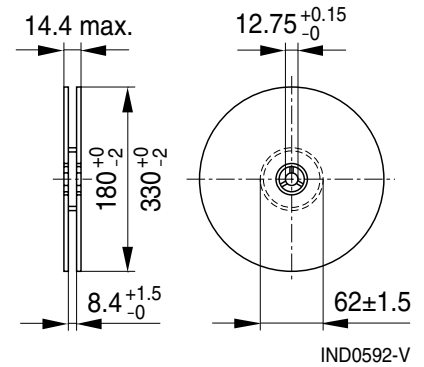
**Taping and packing**

Blister tape

Reel



IND0559-Z-E



IND0592-V

Dimensions in mm

**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 $\leq 30$ 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 $\geq 90\%$ (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. 50 mg

**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> ( $\varnothing$ 180-mm reel)
Core material: ceramic							
0.010	$\pm 5\% \triangle J$	15	100	450	0.10	4000	B82422T3100+000
0.012	$\pm 10\% \triangle K$	17	100	450	0.11	3500	B82422T3120+000
0.015		19	100	450	0.13	3000	B82422T3150+000
0.018		21	100	450	0.14	2000	B82422T3180+000
0.022		23	100	450	0.16	2000	B82422T3220+000
0.027		23	100	450	0.17	1700	B82422T3270+000
0.033		25	100	450	0.18	1700	B82422T3330+000
0.039		25	100	450	0.19	1300	B82422T3390+000
0.047		26	100	450	0.20	1300	B82422T3470+000
0.056		26	100	450	0.21	1100	B82422T3560+000
0.068		27	100	450	0.23	1000	B82422T3680+000
0.082		27	100	450	0.26	1000	B82422T3820+000
0.10		28	100	450	0.31	900	B82422T3101+000

**Core material: ferrite**

0.12	$\pm 5\% \triangle J$	30	25.2	450	0.15	900	B82422T1121+000
0.15	$\pm 10\% \triangle K$	30	25.2	450	0.18	700	B82422T1151+000
0.18		30	25.2	450	0.19	500	B82422T1181+000
0.22		30	25.2	450	0.20	500	B82422T1221+000
0.27		30	25.2	450	0.21	500	B82422T1271+000
0.33		30	25.2	450	0.23	500	B82422T1331+000
0.39		30	25.2	450	0.25	400	B82422T1391+000
0.47		30	25.2	450	0.30	400	B82422T1471+000
0.56		30	25.2	450	0.31	300	B82422T1561+000
0.68		30	25.2	450	0.34	300	B82422T1681+000
0.82		30	25.2	450	0.38	300	B82422T1821+000
1.0		30	7.96	400	0.6	300	B82422T1102+000
1.2		30	7.96	390	0.7	250	B82422T1122+000

Closer tolerances and special versions on request.

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

Sample kit available. Ordering code: B82422X001

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: B82422T3100K008

2) For Ni-barrier-plated terminals replace the last two digits "00" by "50" (reel 180 mm) or "58" (reel 330 mm).

**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> ( $\varnothing$ 180-mm reel)
1.5	$\pm 5\% \triangle J$	30	7.96	370	0.7	200	B82422T1152+000
1.8	$\pm 10\% \triangle K$	30	7.96	350	0.8	140	B82422T1182+000
2.2		30	7.96	320	0.8	100	B82422T1222+000
2.7		30	7.96	290	0.9	70	B82422T1272+000
3.3		30	7.96	260	1.2	60	B82422T1332+000
3.9		30	7.96	250	1.3	60	B82422T1392+000
4.7		30	7.96	220	1.5	50	B82422T1472+000
5.6		27	7.96	200	1.6	45	B82422T1562+000
6.8		27	7.96	180	1.8	40	B82422T1682+000
8.2		27	7.96	170	2.0	35	B82422T1822+000
10		27	2.52	150	2.1	30	B82422T1103+000
12	27	2.52	140	2.5	25	B82422T1123+000	
15	27	2.52	130	2.8	20	B82422T1153+000	
18	27	2.52	120	3.0	20	B82422T1183+000	
22	27	2.52	110	3.5	20	B82422T1223+000	
27	27	2.52	80	4.5	20	B82422T1273+000	
33	27	2.52	70	5.6	17	B82422T1333+000	
39	27	2.52	65	6.4	16	B82422T1393+000	
47	27	2.52	60	7.0	15	B82422T1473+000	
56	27	2.52	60	8.0	12	B82422T1563+000	
68	27	2.52	60	9.0	9	B82422T1683+000	
82	25	2.52	60	10	9	B82422T1823+000	
100	20	0.796	60	11	8	B82422T1104+000	

Closer tolerances and special versions on request.

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

Sample kit available. Ordering code: B82422X001

For more information refer to chapter "Sample kits".

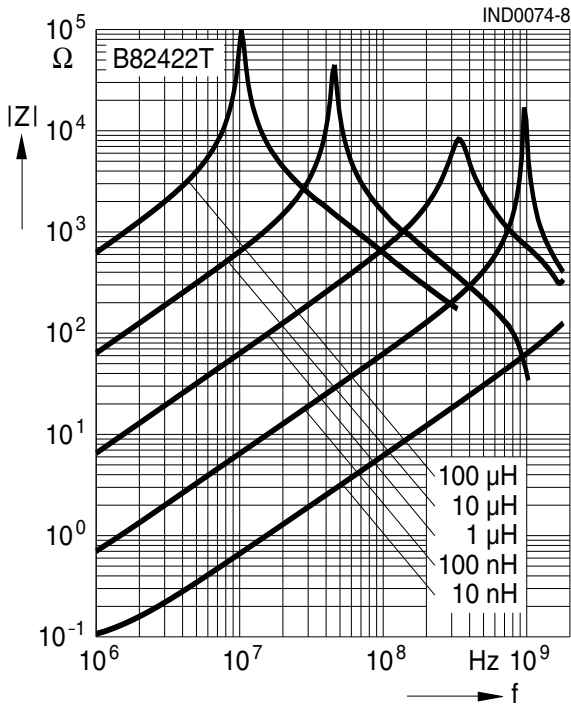
1) Replace the + by the code letter for the required inductance tolerance.

For reel size  $\varnothing$  330 mm the last digit has to be an »8«. Example: B82422T1104K008

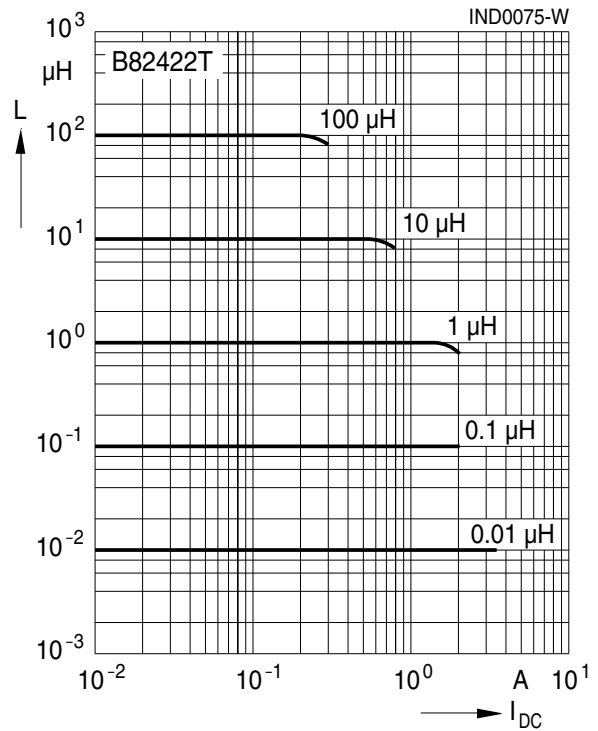
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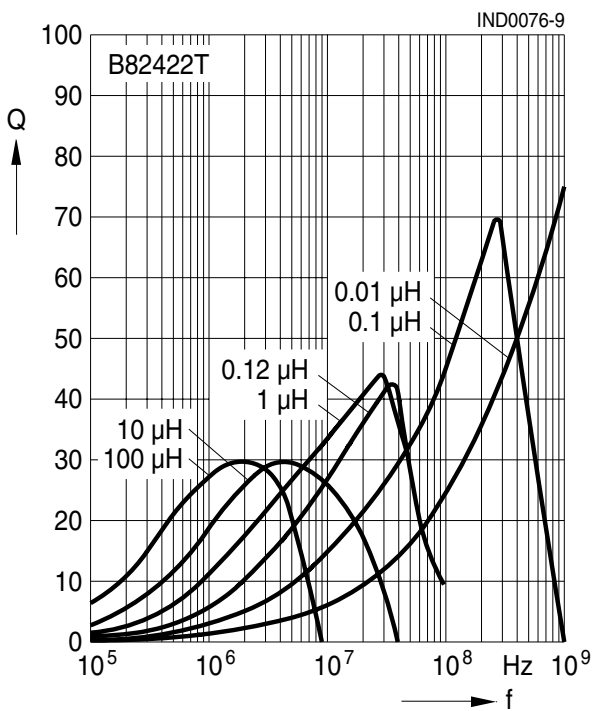
**Impedance  $|Z|$  versus frequency  $f$**   
measured with impedance analyzer  
Agilent 4291A, typical values at 20 °C



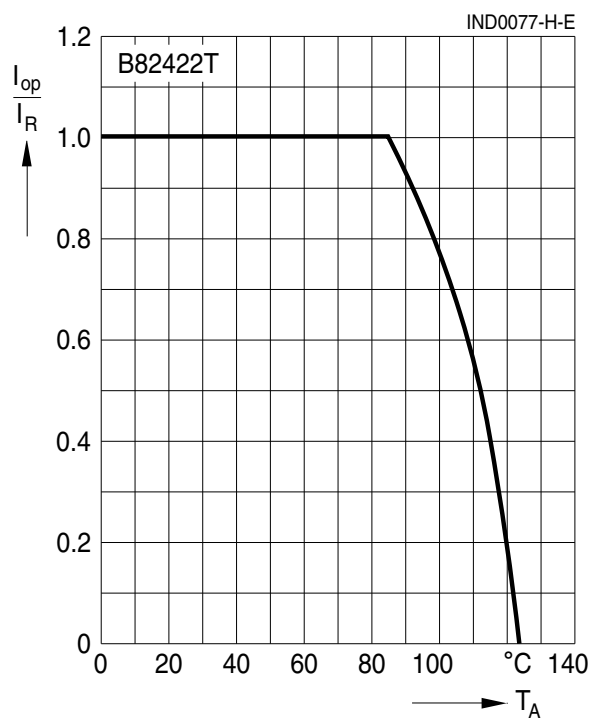
**Inductance  $L$  versus DC load current  $I_{DC}$**   
measured with LCR meter Agilent 4275A,  
typical values at 20 °C



**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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