



SMT inductors

SIMID series, SIMID 1812-T

Series/Type: B82432T

Date: March 2008

SMD

Size 1812 (EIA) or 4532 (IEC)
Rated inductance 1 μ H to 1000 μ H
Rated current 70 mA to 1300 mA



Construction

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

Features

- Temperature range up to 150 °C
- High current handling capability
- Qualified to AEC-Q200
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020C
- RoHS-compatible

Applications

- Filtering of supply voltages, coupling, decoupling
- DC/DC converters
- Automotive electronics (e.g. single-wire bus systems)
- Telecommunications
- Industrial electronics

Terminals

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

Marking

- Marking on component:
Manufacturer and letter "T",
L value (in μ 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 unit

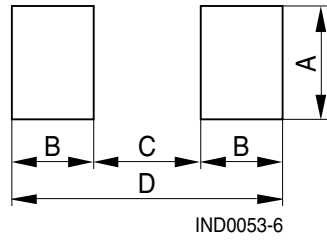
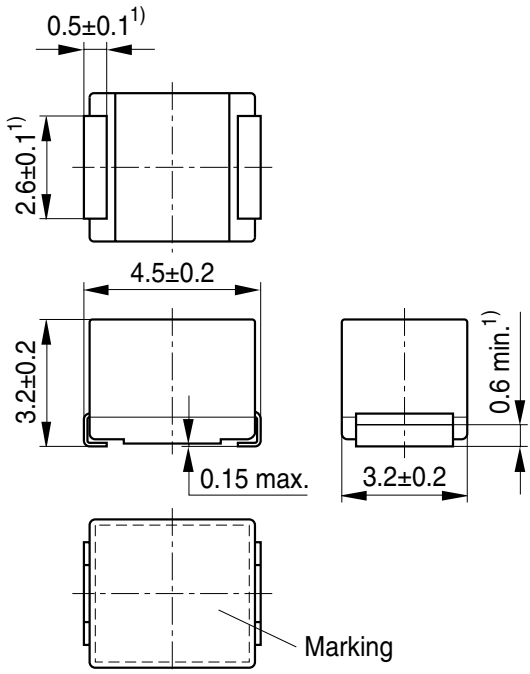
- 12-mm blister tape, wound on 330-mm \varnothing reel
- Packing unit: 2500 pcs./reel

¹⁾ Ni-barrier-plated terminals on request (B82432T*50).

SIMID 1812-T

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Dimensional drawing and layout recommendation



A	B	C	D
3.6	1.3	3.2	5.8

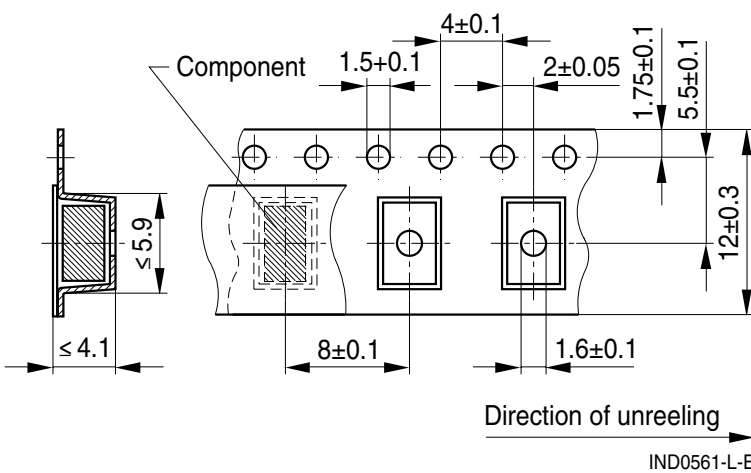
1) Soldering area

IND0083-T-E

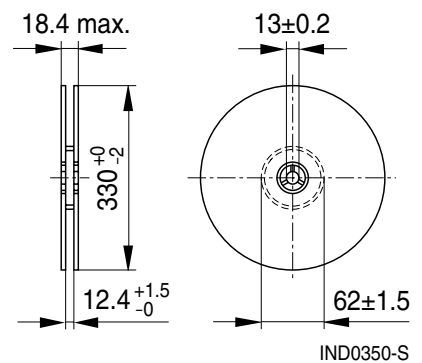
Dimensions in mm

Taping and packing

Blister tape



Reel



IND0350-S

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 ≤ 40 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	55/150/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +150 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 130 mg

Characteristics and ordering codes

L_R μH	Tolerance	Q_{\min}	$f_L; f_Q$ MHz	I_R mA	R_{\max} Ω	$f_{\text{res,min}}$ MHz	Ordering code ¹⁾
1.0	$\pm 10\% \triangleq K$	10	7.96	1300	0.08	110	B82432T1102K000
1.2		10	7.96	1200	0.10	100	B82432T1122K000
1.5		10	7.96	1150	0.11	80	B82432T1152K000
1.8		10	7.96	1050	0.13	70	B82432T1182K000
2.2		10	7.96	1000	0.15	60	B82432T1222K000
2.7		10	7.96	950	0.17	55	B82432T1272K000
3.3		10	7.96	900	0.19	50	B82432T1332K000
3.9		10	7.96	850	0.20	45	B82432T1392K000
4.7		10	7.96	800	0.22	40	B82432T1472K000
5.6		10	7.96	750	0.26	38	B82432T1562K000
6.8		10	7.96	700	0.30	36	B82432T1682K000
8.2		10	7.96	670	0.33	30	B82432T1822K000



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

Characteristics and ordering codes

L_R μH	Tolerance	Q_{\min}	$f_L; f_Q$ MHz	I_R mA	R_{\max} Ω	$f_{\text{res,min}}$ MHz	Ordering code ¹⁾
10	$\pm 10 \% \triangleq K$	10	2.52	650	0.35	25	B82432T1103K000
12		10	2.52	630	0.45	23	B82432T1123K000
15		10	2.52	600	0.50	20	B82432T1153K000
18		10	2.52	550	0.60	18	B82432T1183K000
22		10	2.52	450	0.70	15	B82432T1223K000
27		10	2.52	430	1.00	14	B82432T1273K000
33		10	2.52	400	1.20	13	B82432T1333K000
39		10	2.52	380	1.30	12	B82432T1393K000
47		10	2.52	350	1.35	11	B82432T1473K000
56		10	2.52	300	2.00	10	B82432T1563K000
68		10	2.52	250	2.50	8.0	B82432T1683K000
82		10	2.52	220	3.00	7.0	B82432T1823K000
100		20	0.796	200	3.50	6.5	B82432T1104K000
120		20	0.796	180	4.50	6.3	B82432T1124K000
150		20	0.796	160	6.00	6.1	B82432T1154K000
180		20	0.796	140	7.00	5.5	B82432T1184K000
220		20	0.796	130	7.50	4.5	B82432T1224K000
270		20	0.796	120	10.5	4.3	B82432T1274K000
330		20	0.796	120	11.0	4.1	B82432T1334K000
390		20	0.796	110	13.0	3.9	B82432T1394K000
470		20	0.796	100	15.0	3.5	B82432T1474K000
560		20	0.796	90	20.0	3.0	B82432T1564K000
680		20	0.796	80	23.0	2.6	B82432T1684K000
820		20	0.796	80	27.0	2.4	B82432T1824K000
1000	20	0.252	70	30.0	2.3	B82432T1105K000	

Closer tolerances on request.

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

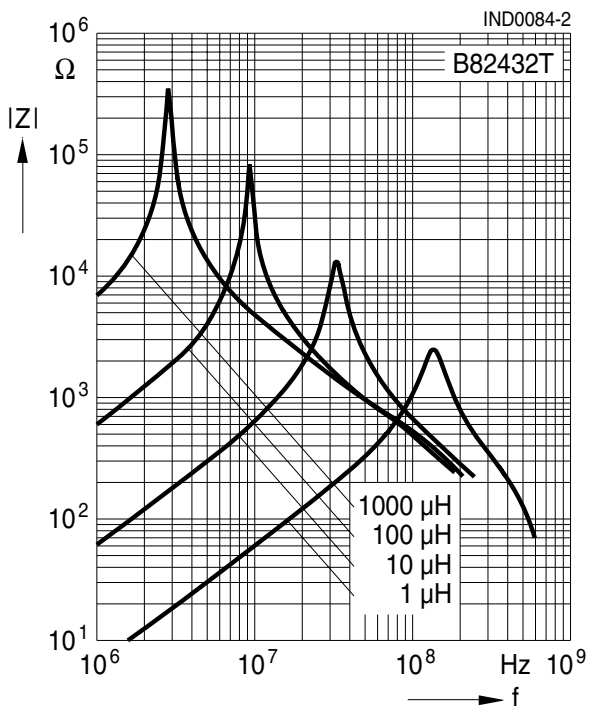
Sample kit available. Ordering code: B82432X001

For more information refer to chapter "Sample kits".

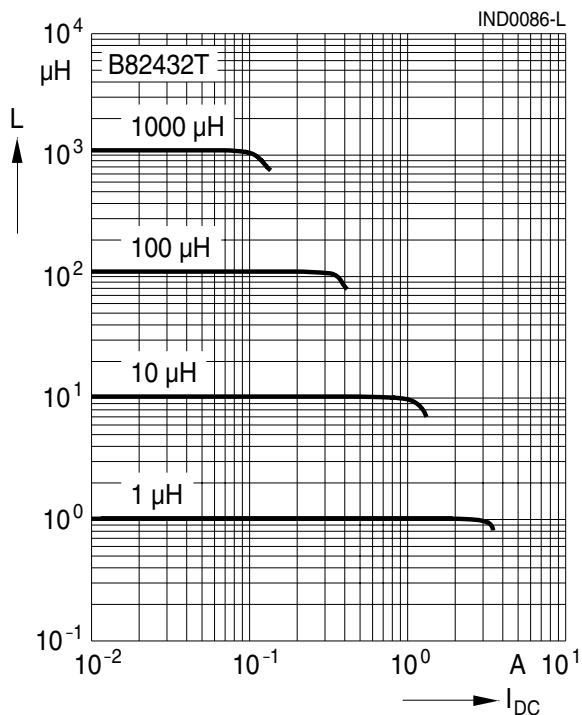
1) For Ni-barrier-plated terminals replace the last two digits of ordering code "00" by "50".

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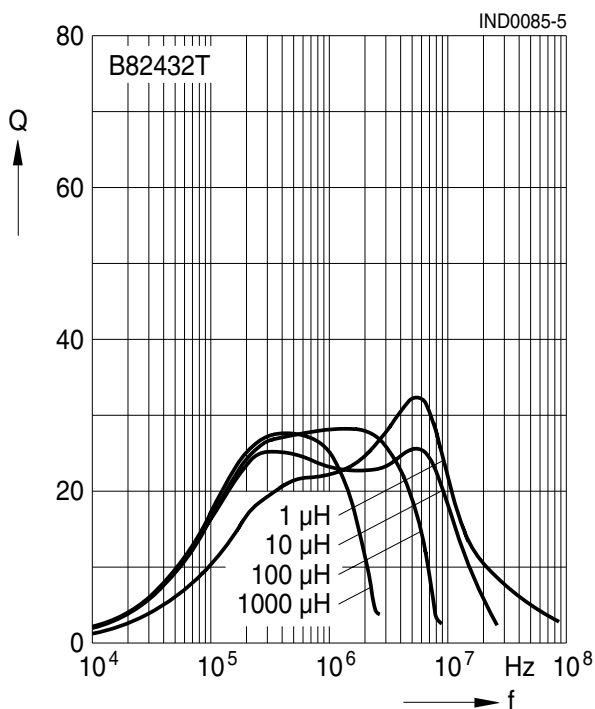
Impedance $|Z|$ versus frequency f
 measured with impedance analyzer Agilent 4294A/test fixture 16193A, typical values at 20 °C



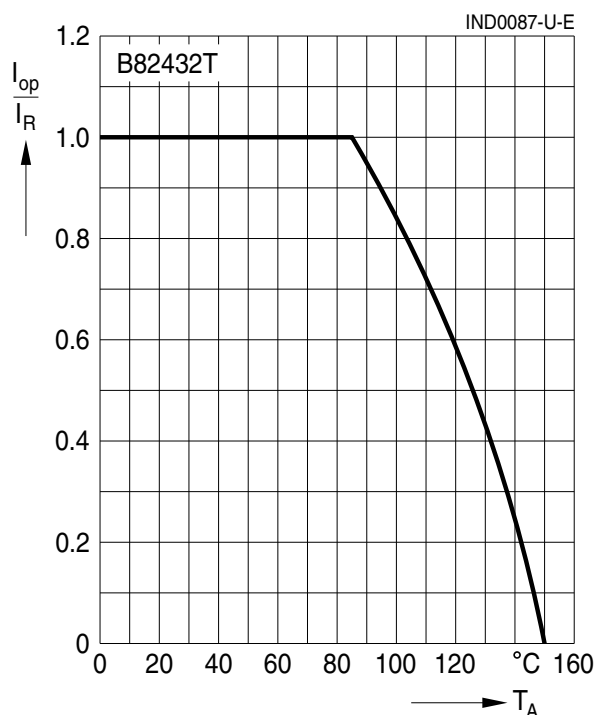
Inductance L versus DC load current I_{DC}
 measured with LCR meter Agilent 4275A, typical values at 20 °C



Q factor versus frequency f
 measured with impedance analyzer Agilent 4294A/test fixture 16193A, 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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