



SMT inductors

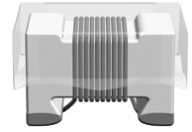
SIMID series, SIMID 0805-F

Series/Type: **B82498F**
Date: March 2008

SIMID 0805-F

SMD

Size 0805 (EIA) and/or 2012 (IEC)
Rated inductance 2.7 nH to 6800 nH
Rated current 80 mA to 1000 mA



Construction

- Cubic coil with ceramic or ferrite core
- Epoxy-molded flat top for vacuum pickup
- Winding ends welded to terminals

Features

- High resonance frequency
- Close inductance tolerance
- Suitable for lead-free reflow soldering
- RoHS-compatible

Applications

Resonant circuits, impedance matching for

- Antenna amplifiers
- Multimedia
- Wireless communication systems
- Car access systems
- TPMS (Tire Pressure Monitoring System)
- GPS (Global Positioning System)

Terminals

- Standard version:
 - Base material Al₂O₃ ceramic and ferrite
 - Thick-film coating of Ag/Pd/Pt
- Gold-plated terminals:
 - Base material Al₂O₃ ceramic
 - Layer composition W/Ni/Au
 - Electro-plated

Marking

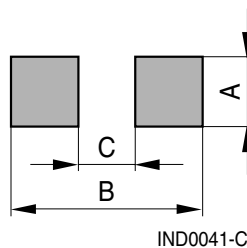
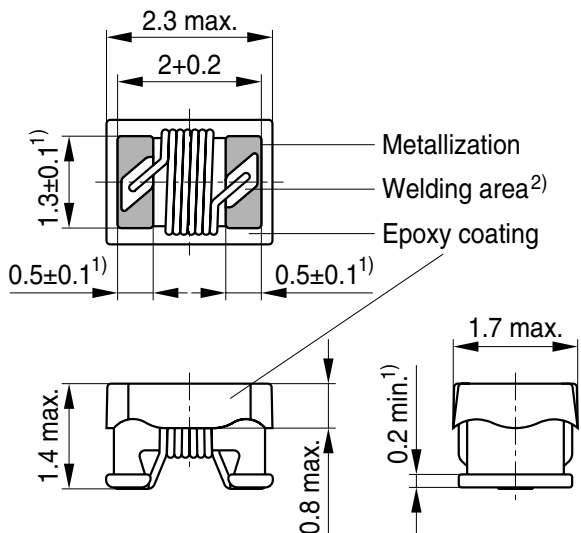
- No marking on component
- Minimum data on reel:
Manufacturer, ordering code, L value, quantity, date of packing

Delivery mode and packing unit

- 8-mm blister tape, wound on 180-mm reel
- Packing unit: 3000 pcs./reel

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Dimensional drawing and layout recommendation



| A | B | C |
|----------|----------|----------|
| 1.5 ±0.2 | 3.2 ±0.4 | 1.0 ±0.1 |

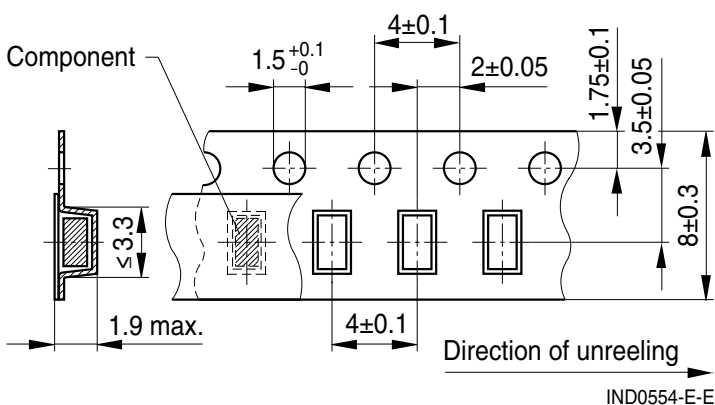
- 1) Soldering area
- 2) This area (30% of contact area) should not be used to assess solderability

IND0542-S-E

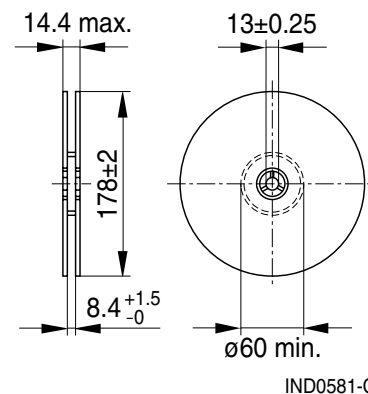
Dimensions in mm

Taping and packing

Blister tape



Reel



Dimensions in mm

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Technical data and measuring conditions

| | |
|--|--|
| Rated inductance L_R | Measured with impedance analyzer Agilent 4291A and test fixture Agilent 16197A at frequency f_L , 0.1 V, 20 °C. Pad distance 0.9 ± 0.1 (mm) Short inductance 200 pH unconsidered |
| Q factor Q_{\min} | Measured with impedance analyzer Agilent 4291A and test fixture Agilent 16197A at frequency f_Q , 20 °C. Pad distance 0.9 ± 0.1 (mm) Short inductance 200 pH unconsidered |
| 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 ≤ 20 K at rated temperature |
| Self-resonance frequency $f_{\text{res},\min}$ | Measured with network analyzer Agilent 8720D, 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 | Standard version: 260 °C, 20 s (as referenced in JEDEC J-STD 020C) Gold-plated terminals: 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. 10 mg |

Characteristics and ordering codes

| L_R nH | Tolerance | f_L MHz | Q_{min} | f_Q MHz | I_R mA | R_{max} Ω | $f_{res,min}$ MHz | Ordering code ¹⁾²⁾ (standard version) |
|------------------------|--|--------------|-----------|--------------|-------------|-----------------------|----------------------|---|
| Core material: ceramic | | | | | | | | |
| 2.7 | $\pm 10\% \triangle K$ | 250 | 50 | 1500 | 1000 | 0.03 | 9000 | B82498F3279K000 |
| 5.6 | | 250 | 50 | 1000 | 900 | 0.04 | 7000 | B82498F3569K000 |
| 6.8 | | 250 | 50 | 1000 | 800 | 0.05 | 6000 | B82498F3689K000 |
| 8.2 | | 250 | 50 | 1000 | 700 | 0.09 | 5000 | B82498F3829K000 |
| 10 | $\pm 2\% \triangle G$ $\pm 5\% \triangle J$ | 250 | 50 | 500 | 700 | 0.09 | 5000 | B82498F3100+000 |
| 12 | | 250 | 50 | 500 | 700 | 0.09 | 4000 | B82498F3120+000 |
| 15 | | 250 | 50 | 500 | 650 | 0.13 | 3300 | B82498F3150+000 |
| 18 | | 250 | 60 | 500 | 700 | 0.08 | 3300 | B82498F3180+000 |
| 22 | | 250 | 60 | 500 | 700 | 0.08 | 2500 | B82498F3220+000 |
| 27 | | 250 | 60 | 500 | 700 | 0.09 | 2500 | B82498F3270+000 |
| 33 | | 250 | 65 | 500 | 600 | 0.11 | 2200 | B82498F3330+000 |
| 39 | | 250 | 65 | 500 | 600 | 0.12 | 2100 | B82498F3390+000 |
| 47 | | 200 | 65 | 500 | 600 | 0.13 | 2000 | B82498F3470+000 |
| 56 | | 200 | 60 | 500 | 600 | 0.14 | 1700 | B82498F3560+000 |
| 68 | | 200 | 60 | 500 | 500 | 0.18 | 1600 | B82498F3680+000 |
| 82 | | 150 | 60 | 500 | 500 | 0.19 | 1500 | B82498F3820+000 |
| 100 | | 150 | 55 | 500 | 450 | 0.28 | 1350 | B82498F3101+000 |
| 120 | | 150 | 50 | 250 | 440 | 0.31 | 1250 | B82498F3121+000 |
| 150 | | 100 | 45 | 250 | 400 | 0.42 | 1150 | B82498F3151+000 |
| 180 | | 100 | 45 | 250 | 340 | 0.53 | 1050 | B82498F3181+000 |
| 220 | | 100 | 45 | 250 | 320 | 0.70 | 950 | B82498F3221+000 |
| 270 | | 100 | 45 | 250 | 270 | 1.0 | 900 | B82498F3271+000 |
| 330 | | 100 | 45 | 250 | 220 | 1.5 | 800 | B82498F3331+000 |
| 390 | | 100 | 40 | 250 | 210 | 1.6 | 700 | B82498F3391+000 |
| 470 | 50 | 30 | 100 | 190 | 1.9 | 650 | B82498F3471+000 | |
| 560 | 25 | 23 | 50 | 230 | 1.3 | 400 | B82498F3561+000 | |
| 680 | 25 | 23 | 50 | 190 | 1.7 | 300 | B82498F3681+000 | |
| 820 | 25 | 23 | 50 | 180 | 1.9 | 300 | B82498F3821+000 | |

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

Sample kit for standard version available. Ordering code: B82498X001

For more information refer to chapter "Sample kits".

1) For gold-plated terminals the last digit has to be a "1". Example: B82498F3279K001

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

Characteristics and ordering codes

| L_R nH | Tolerance | f_L MHz | Q_{min} | f_Q MHz | I_R mA | R_{max} Ω | $f_{res,min}$ MHz | Ordering code ¹⁾ (standard version) |
|------------------------|-----------------------|--------------|-----------|--------------|-------------|-----------------------|----------------------|---|
| Core material: ferrite | | | | | | | | |
| 1000 | $\pm 5\% \triangle J$ | 7.96 | 20 | 7.96 | 240 | 0.55 | 440 | B82498F1102J000 |
| 1200 | | 7.96 | 20 | 7.96 | 220 | 0.65 | 420 | B82498F1122J000 |
| 1500 | | 7.96 | 20 | 7.96 | 200 | 0.70 | 380 | B82498F1152J000 |
| 1800 | | 7.96 | 20 | 7.96 | 190 | 0.98 | 350 | B82498F1182J000 |
| 2200 | | 7.96 | 20 | 7.96 | 130 | 1.60 | 330 | B82498F1222J000 |
| 2700 | | 7.96 | 20 | 7.96 | 120 | 2.0 | 270 | B82498F1272J000 |
| 3300 | | 7.96 | 20 | 7.96 | 100 | 3.3 | 250 | B82498F1332J000 |
| 3900 | | 7.96 | 20 | 7.96 | 95 | 3.6 | 230 | B82498F1392J000 |
| 4700 | | 7.96 | 20 | 7.96 | 90 | 3.8 | 210 | B82498F1472J000 |
| 5600 | | 7.96 | 20 | 7.96 | 85 | 4.3 | 180 | B82498F1562J000 |
| 6800 | | 7.96 | 20 | 7.96 | 80 | 4.7 | 140 | B82498F1682J000 |

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

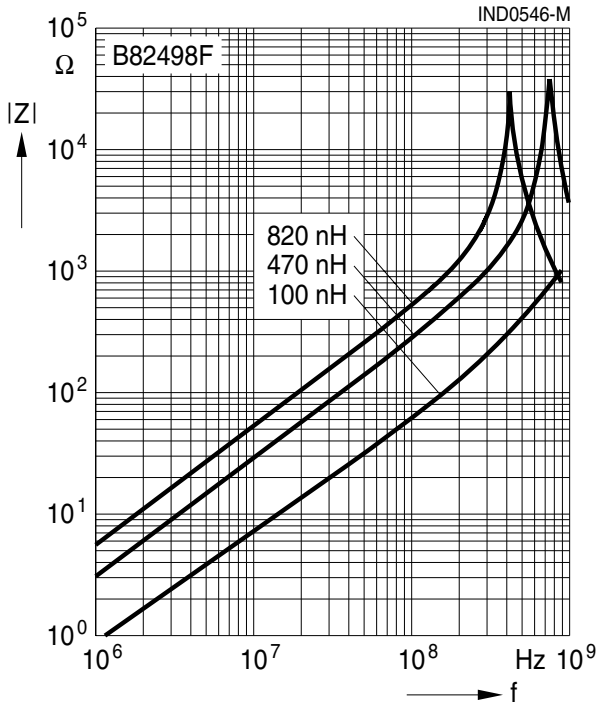
Sample kit of standard version available. Ordering code: B82498X001

For more information refer to chapter "Sample kits".

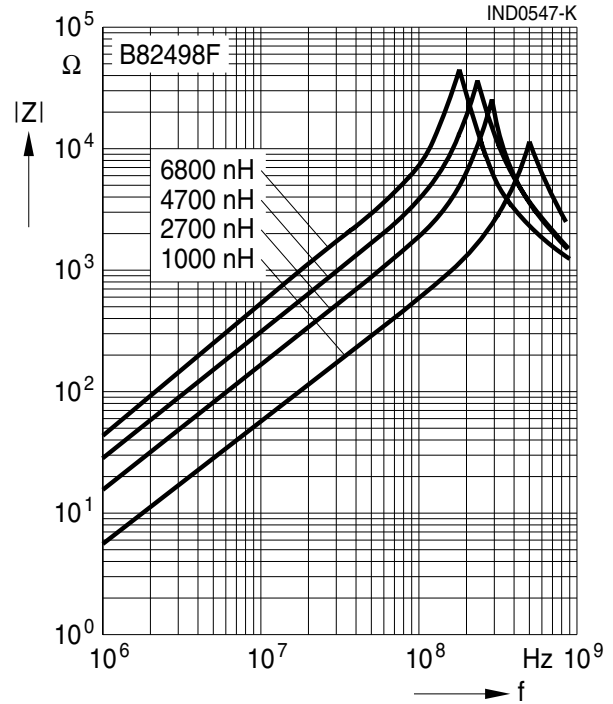
1) Replace the + by the code letter for the required inductance tolerance.

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Impedance |Z| vs. frequency f (ceramic core)
 measured with impedance analyzer
 Agilent 4291A, typical values at 20 °C



Impedance |Z| vs. frequency f (ferrite core)
 measured with impedance analyzer
 Agilent 4291A, typical values at 20 °C



Q factor versus frequency f (ceramic core)
 measured with impedance analyzer
 Agilent 4291A, typical values at 20 °C

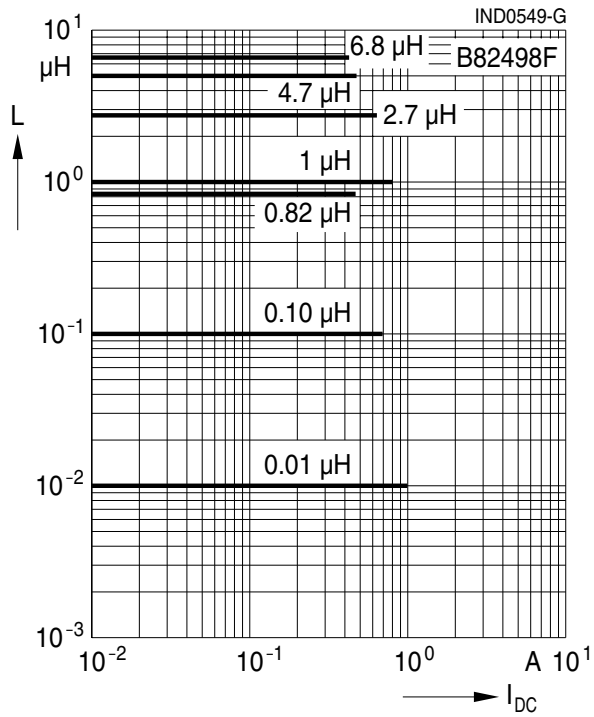


Q factor versus frequency f (ferrite core)
 measured with impedance analyzer
 Agilent 4291A, typical values at 20 °C



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Inductance L versus DC load current I_{DC}
 measured with RF LCR meter
 Agilent 4275A, 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.
- 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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- Подбор аналогов;
- Консультации по применению компонента;
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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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