



## Inductors

DC/DC converters  
E 6.3

**Series/Type:**            **B78304B\*A003**

**Date:**                    March 2008

## SMD

### Construction

- E 6.3 ferrite core
- Cover cap
- 6 gullwing terminals

### Features

- Very small size
- Low stray inductance, low winding capacitance, low DC resistance

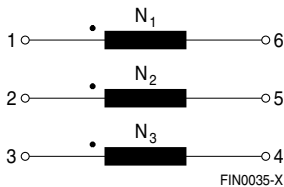
### Applications

- Pulse transformers
- Broadband transformers
- Drive transformers for power semiconductors
- Low-power DC/DC converters (B78304B1016A003)

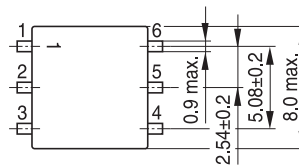
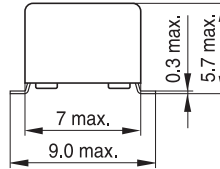
### Delivery mode and packing unit

- 16-mm blister tape, 330-mm  $\varnothing$  reel
- Packing unit: 900 pcs./reel

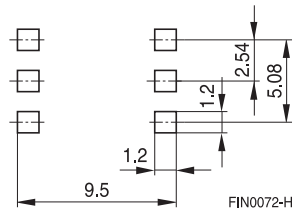
### Pinning



### Dimensional drawing



### Layout recommendation



Dimensions in mm

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

|                                           |                               |
|-------------------------------------------|-------------------------------|
| Main inductance L (1-6)                   | 10 kHz, 10 mV                 |
| Inductance tolerance                      | ±55%                          |
| Stray inductance $L_{\text{stray}}$ (1-6) | 10 kHz, 10 mV, short 2-5, 3-4 |
| Resistance $R_{\text{DC}}$ (1-6)          | Measured on 1-6               |
| Capacitance $C_i$ (1-2)                   | 10 kHz, 100 mV                |
| Resonance frequency $f_{\text{res}}$      | Primary winding 1-6           |
| Test voltage $V_{\text{test}}$            | 50 Hz, 1 s                    |
| Operating temperature range               | −40 °C ... +85 °C             |
| Weight                                    | Approx. 0.6 g                 |

**Characteristics and ordering codes**

| L<br>mH | $N_1 : N_2 : N_3$ | $L_{\text{stray}}$<br>μH | $R_{\text{DC}}$<br>Ω | $C_i$<br>pF | $B_{3\text{dB}}$<br>MHz | $f_{\text{res}}$<br>MHz | $V_{\text{test}}$<br>V AC | Ordering code   |
|---------|-------------------|--------------------------|----------------------|-------------|-------------------------|-------------------------|---------------------------|-----------------|
| 0.1     | 1:1:1             | 0.3                      | < 0.2                | 15          | 0.05 ... 60             | Approx. 9.0             | 500                       | B78304B1030A003 |
| 1.0     | 1:1:1             | 1.0                      | < 0.9                | 30          | 0.03 ... 23             | Approx. 4.0             | 500                       | B78304B1031A003 |
| 10.0    | 1:1:1             | 4.0                      | < 6.0                | 80          | 0.01 ... 1.6            | Approx. 0.2             | 500                       | B78304B1032A003 |
| 4.3     | 1: 0.21:0.21      | 20.0                     | < 6.0                | —           | —                       | > 0.6                   | 500                       | B78304B1016A003 |

## 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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