

**Size 0603 (EIA) and/or 1608 (IEC)**

**Rated inductance 1,0 to 220 nH**

**Rated current 0,11 to 1,8 A**



#### Construction

- Copper-plated ceramic core
- Laser-cut winding, epoxy-coated

#### Features

- Extremely close tolerance of dimensions
- High resonance frequency
- Free of polarization effect
- Close inductance tolerance
- High mechanical stability
- Suitable for reflow (IR and vapor phase) and wave soldering

#### Applications

Resonant circuits, impedance matching for

- Mobile phones
- DECT systems
- Keyless entry
- GPS (Global Positioning System)
- Video cameras

#### Terminals

- Electro-plated, 2  $\mu\text{m}$  Ni, 10  $\mu\text{m}$  Sn (lead-free)
- Base material  $\text{Al}_2\text{O}_3$  ceramic with Cu layer

#### Marking

No marking on component

Minimum data on reel:

Manufacturer, part number, ordering code,  
 $L$  value and tolerance of  $L$  value,  
quantity, date of packing

#### Delivery mode

8-mm cardboard tape, wound on 180-mm  $\varnothing$  reel

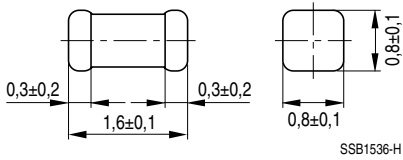
Bulk case on request

For details on taping, packing and packing units refer to  
data book 2000 "Chokes and Inductors", page 151.

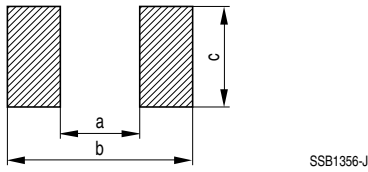
**General technical data**

|                                         |                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Rated inductance $L_R$                  | Measured with impedance analyzer HP 4291A and Agilent test fixture 16196 A at frequency $f_L$                       |
| Q factor $Q_{min}$ , $Q_{typ}$          | Measured with impedance analyzer HP 4291A and Agilent test fixture 16196 A<br>$Q_{min}$ measured at frequency $f_Q$ |
| Rated current $I_R$                     | Maximum permissible dc with a temperature increase of $\leq 15$ K at rated temperature 125 °C                       |
| Self-resonance frequency $f_{res, min}$ | Measured with network analyzer HP 8720                                                                              |
| DC resistance $R_{max}$                 | Measured at 20 °C ambient temperature, measuring current $< I_R$                                                    |
| Climatic category                       | 55/125/56 (– 55 °C/+ 125 °C/56 days damp heat test) in accordance with IEC 60068-1                                  |
| Solderability                           | (215 ± 3) °C, (3 ± 0,3) s<br>wetting of soldering area: $\geq 95$ %<br>in accordance with IEC 60068-2-58            |
| Resistance to soldering heat            | 260 °C, 10 s in accordance with IEC 60068-2-58<br>$\Delta L/L$ : $\leq \pm 3$ %                                     |
| Permissible PCB bending                 | 2 mm (100 mm long standard PCB)                                                                                     |
| Weight                                  | Approx. 4 mg                                                                                                        |

### Dimensional drawing



### Layout recommendation



### Dimensions (mm)

| <i>a</i>      | <i>b</i>      | <i>c</i>      |
|---------------|---------------|---------------|
| $0,9 \pm 0,1$ | $2,3 \pm 0,3$ | $0,8 \pm 0,1$ |

**Characteristics and ordering codes**

| $L_R$<br>nH | Tolerance      | $Q_{min}$ | $Q_{typ}$<br>(at<br>800 MHz) | $f_L, f_Q$<br>MHz | $I_R$<br>A | $R_{max}$<br>$\Omega$ | $f_{res, min}$<br>GHz | Ordering code <sup>1)2)</sup> |
|-------------|----------------|-----------|------------------------------|-------------------|------------|-----------------------|-----------------------|-------------------------------|
| 1,0         | $\pm 0,3$ nH   | 7         | 60                           | 100               | 1,8        | 0,02                  | 16                    | B82496C3109+                  |
| 1,2         | $\triangleq A$ | 8         | 60                           | 100               | 1,8        | 0,025                 | 15                    | B82496C3129+                  |
| 1,5         | $\pm 0,2$ nH   | 8         | 50                           | 100               | 1,5        | 0,03                  | 13                    | B82496C3159+                  |
| 1,8         | $\triangleq Z$ | 12        | 50                           | 100               | 1,5        | 0,033                 | 12                    | B82496C3189+                  |
| 2,2         |                | 14        | 50                           | 100               | 1,5        | 0,035                 | 10                    | B82496C3229+                  |
| 2,7         |                | 14        | 40                           | 100               | 1,4        | 0,04                  | 10                    | B82496C3279+                  |
| 3,3         |                | 14        | 40                           | 100               | 1,2        | 0,06                  | 9                     | B82496C3339+                  |
| 3,9         | $\pm 5$ %      | 14        | 40                           | 100               | 1,1        | 0,065                 | 8                     | B82496C3399+                  |
| 4,7         | $\triangleq J$ | 14        | 40                           | 100               | 0,8        | 0,10                  | 7                     | B82496C3479+                  |
| 5,6         | $\pm 0,2$ nH   | 14        | 40                           | 100               | 0,7        | 0,15                  | 6                     | B82496C3569+                  |
| 6,8         | $\triangleq Z$ | 14        | 40                           | 100               | 0,7        | 0,15                  | 6                     | B82496C3689+                  |
| 8,2         |                | 14        | 40                           | 100               | 0,65       | 0,18                  | 6                     | B82496C3829+                  |
| 10          | $\pm 5$ %      | 14        | 40                           | 100               | 0,6        | 0,20                  | 5                     | B82496C3100+                  |
| 12          | $\triangleq J$ | 14        | 40                           | 100               | 0,45       | 0,35                  | 5                     | B82496C3120+                  |
| 15          | $\pm 2$ %      | 14        | 40                           | 100               | 0,42       | 0,40                  | 4,5                   | B82496C3150+                  |
| 18          | $\triangleq G$ | 14        | 40                           | 100               | 0,40       | 0,45                  | 4,0                   | B82496C3180+                  |
| 22          |                | 14        | 40                           | 100               | 0,38       | 0,50                  | 4,0                   | B82496C3220+                  |
| 27          |                | 14        | 35                           | 100               | 0,36       | 0,55                  | 3,0                   | B82496C3270+                  |
| 33          |                | 14        | 35                           | 100               | 0,35       | 0,60                  | 3,0                   | B82496C3330+                  |
| 39          |                | 14        | 35                           | 100               | 0,30       | 0,80                  | 2,5                   | B82496C3390+                  |
| 47          |                | 14        | 35                           | 100               | 0,27       | 0,95                  | 2,5                   | B82496C3470+                  |
| 56          |                | 14        | 35                           | 100               | 0,25       | 1,2                   | 2,5                   | B82496C3560+                  |
| 68          |                | 14        | 35                           | 100               | 0,23       | 1,3                   | 2,0                   | B82496C3680+                  |
| 82          |                | 14        | 35                           | 100               | 0,22       | 1,5                   | 2,0                   | B82496C3820+                  |
| 100         |                | 14        | 30                           | 100               | 0,20       | 1,8                   | 1,8                   | B82496C3101+                  |
| 120         |                | 5         | 30                           | 25,2              | 0,16       | 3,0                   | 1,8                   | B82496C3121+                  |
| 150         |                | 5         | 30                           | 25,2              | 0,13       | 5,0                   | 1,6                   | B82496C3151+                  |
| 180         |                | 4         | 25                           | 25,2              | 0,12       | 6,0                   | 1,4                   | B82496C3181+                  |
| 220         |                | 4         | 25                           | 25,2              | 0,11       | 7,0                   | 1,3                   | B82496C3221+                  |

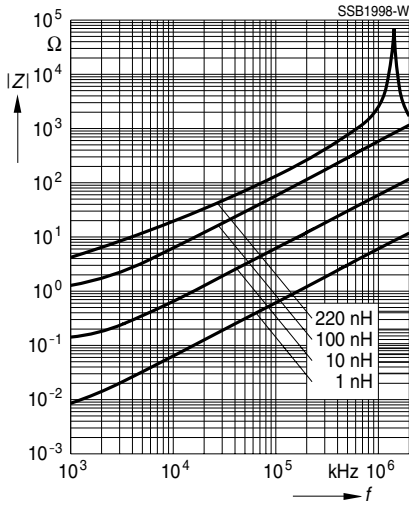
Special values available on request.

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

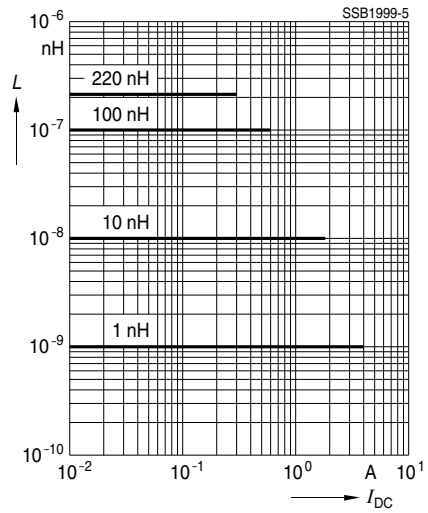
2) Ordering code for cardboard tape/reel packing. For bulk case append code number »1«.

Example: B82496C3109A1

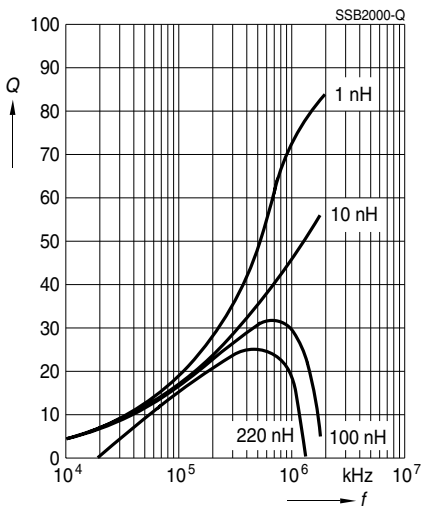
Impedance  $|Z|$   
versus frequency  $f$   
measured with impedance analyzer  
HP 4291A/16196A



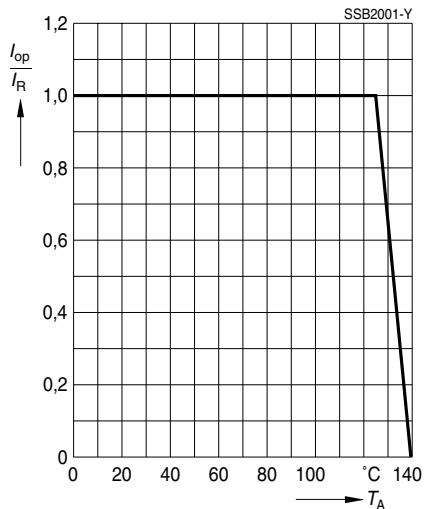
Inductance  $L$   
versus dc load current  $I_{DC}$   
measured with LCR meter  
HP 4275A



$Q$  factor versus frequency  $f$   
measured with impedance analyzer  
HP 4291A/16196A



Current derating  $I_{op}/I_R$   
versus ambient temperature  $T_A$



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**Corporate Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY**

**☎ ++49 89 636 09, FAX (0 89) 636-2 26 89**

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