



# Inductors

## RF chokes, LBC series

**Series/Type:**            **B82144F**

**Date:**                    June 2012

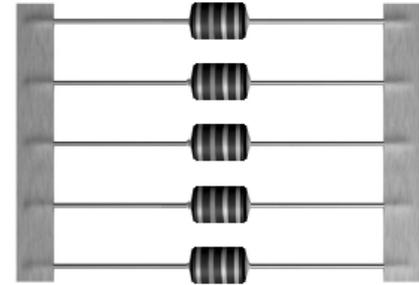
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**LBC chokes, axial leaded**  
**Rated inductance 1 ... 100000  $\mu$ H**  
**Rated current 20 ... 2500 mA**

### Construction

- Large ferrite drum core
- Winding: enamel copper wire
- Flame-retardant lacquer coating



### Features

- Very wide inductance range
- High rated current
- Suitable for wave soldering
- RoHS-compatible

### Applications

- RF blocking and filtering
- Decoupling and interference suppression
- For telecommunications, automotive electronics, energy-saving lamps, entertainment electronics

### Terminals

- Central axial lead
- Base material CuAg0.1
- Electroplated with nickel and pure tin

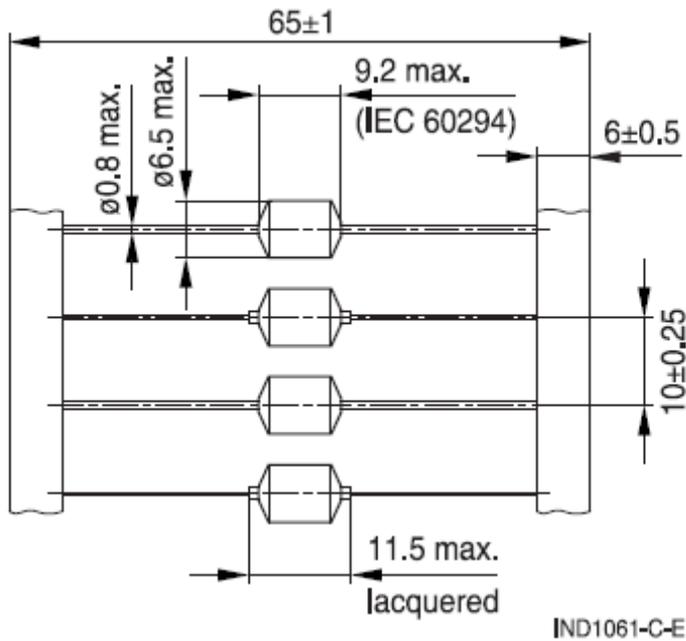
### Marking

- Inductance indicated by color bands in accordance with IEC 60062

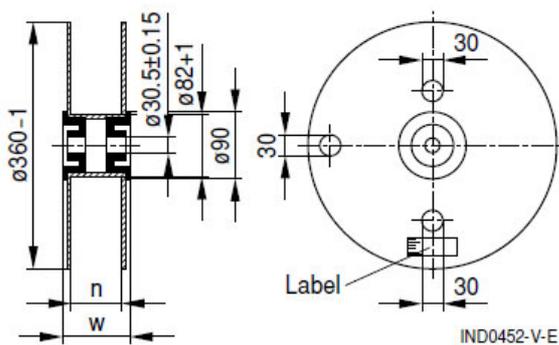
### Delivery mode and packing unit

- Taped, reel packing
- Packing unit:

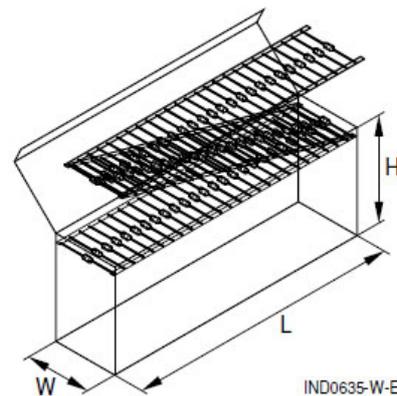
	Ammo (pcs./pack)	Reel (pcs./reel)
B82144F	1200	1500

**Dimensional drawing**


Dimensions in mm

**Packing**


$n$  (mm):  $72 + 1$   
 $w$  (mm):  $84 \text{ max.}$



$L \times B \times H$  (max. mm):  $275 \times 75 \times 140$

Dimensions in mm

**Technical data and measuring conditions**

Rated inductance $L_R$	Measured with LCR meter Agilent 4284A or impedance analyzer Agilent 4294A Measuring frequency: $L_R \leq 10 \mu\text{H}$ = 1 MHz $10 \mu\text{H} < L_R \leq 4700\mu\text{H}$ = 100 kHz $L_R > 4700\mu\text{H}$ = 10 kHz Measuring current: $\leq 1 \text{ mA}$ Measuring temperature: $+20 \text{ }^\circ\text{C}$
Q factor $Q_{\min}$	Measured with precision impedance analyzer Agilent 4294A, $+20 \text{ }^\circ\text{C}$
Rated temperature $T_R$	$+40 \text{ }^\circ\text{C}$
Rated current $I_R$	Maximum permissible DC current at rated temperature
Inductance decrease $\Delta L/L_0$	$\leq 10\%$ (referred to initial value) at $I_R$ , $+20 \text{ }^\circ\text{C}$
DC resistance $R_{\max}$	Measured at $+20 \text{ }^\circ\text{C}$
Resonance frequency $f_{\text{res},\min}$	Measured with Agilent 4294A or 8753ES, $+20 \text{ }^\circ\text{C}$
Solderability (lead-free)	Sn95.5Ag3.8Cu0.7: $+(245 \pm 5) \text{ }^\circ\text{C}$ , $(+3 \pm 0.3) \text{ s}$ Wetting of soldering area $\geq 90\%$ (to IEC 60068-2-20, test Ta)
Resistance to soldering heat	$(+260 \pm 5)^\circ\text{C}$ , $+10 \text{ s}$ (to IEC 60068-2-20, test Tb)
Tensile strength of leads	$\geq 20 \text{ N}$ (to IEC 60068-2-21, test Ua)
Climatic category	55/125/56 (to IEC 60068-1)
Storage conditions	Mounted: $-55 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$ Packaged: $-25 \text{ }^\circ\text{C} \dots +40 \text{ }^\circ\text{C}$ , $\leq 75\% \text{ RH}$
Weight	Approx. 0.95 g


**Mounting information**

When bending the leads, take care that the start-of-winding areas at the face ends (protected by glue and lacquer) are not subjected to any mechanical stress.

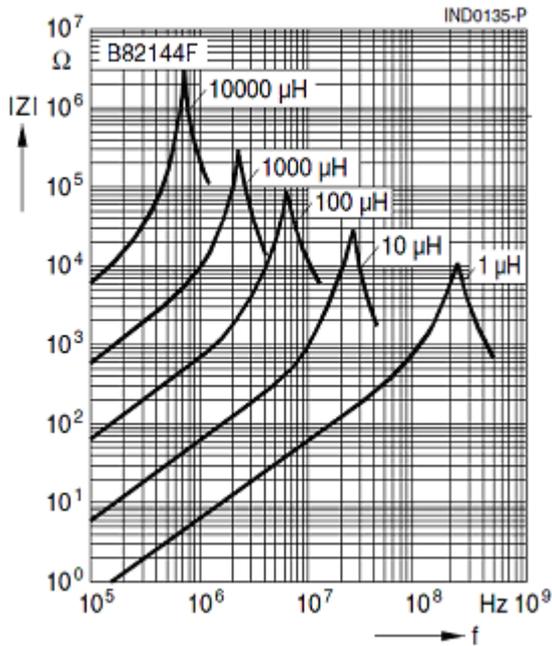
**Characteristics and ordering codes**

L <sub>R</sub> [μH]	Tolerance <sup>1)</sup>	Q <sub>min</sub>	f <sub>Q</sub> [MHz]	I <sub>R</sub> [mA]	R <sub>max</sub> [Ω]	f <sub>res,min</sub> [MHz]	Ordering code <sup>2)</sup>	
1.0 1.5 2.2	±10% Δ K	25	7.96	2500	0.06	200	B82144F1102K000	
		25	7.96	2300	0.07	180	B82144F1152K000	
		25	7.96	2100	0.09	140	B82144F1222K000	
3.3 4.7 6.8			25	7.96	1950	0.10	120	B82144F1332K000
			25	7.96	1800	0.12	100	B82144F1472K000
			25	7.96	1600	0.15	60	B82144F1682K000
10 15 22			60	2.52	1500	0.18	24	B82144F1103K000
			60	2.52	1400	0.22	17	B82144F1153K000
			50	2.52	1250	0.28	12	B82144F1223K000
33 47 56		± 5% Δ J	40	2.52	1100	0.35	8.0	B82144F1333J000
			40	2.52	900	0.41	7.0	B82144F1473J000
			40	2.52	850	0.47	7.0	B82144F1563J000
68 100 150			30	2.52	800	0.52	6.2	B82144F1683J000
			40	0.796	760	0.70	5.2	B82144F1104J000
			40	0.796	670	0.90	4.5	B82144F1154J000
220 330 470			40	0.796	550	1.30	3.8	B82144F1224J000
			30	0.796	500	1.70	3.2	B82144F1334J000
			30	0.796	400	2.20	2.9	B82144F1474J000
680 820			20	0.796	340	3.10	2.6	B82144F1684J000
			20	0.796	310	3.70	2.4	B82144F1824J000
1000 1500 2200			60	0.252	280	4.20	2.2	B82144F1105J000
			60	0.252	230	6.40	1.9	B82144F1155J000
			60	0.252	180	9.50	1.5	B82144F1225J000
3300 4700 5600			60	0.252	150	13.8	1.3	B82144F1335J000
			60	0.252	120	21.0	1.1	B82144F1475J000
			60	0.252	110	28.0	1.0	B82144F1565J000
6800 10000 15000			60	0.252	100	30.0	0.9	B82144F1685J000
			50	0.0796	85	42.0	0.75	B82144F1106J000
			50	0.0796	50	75.0	0.50	B82144F1156J000
22000 33000 47000			50	0.0796	40	120	0.40	B82144F1226J000
			50	0.0796	35	150	0.30	B82144F1336J000
			40	0.0796	30	230	0.26	B82144F1476J000
68000 100000			40	0.0796	25	290	0.20	B82144F1686J000
		40	0.0796	20	490	0.18	B82144F1107J000	

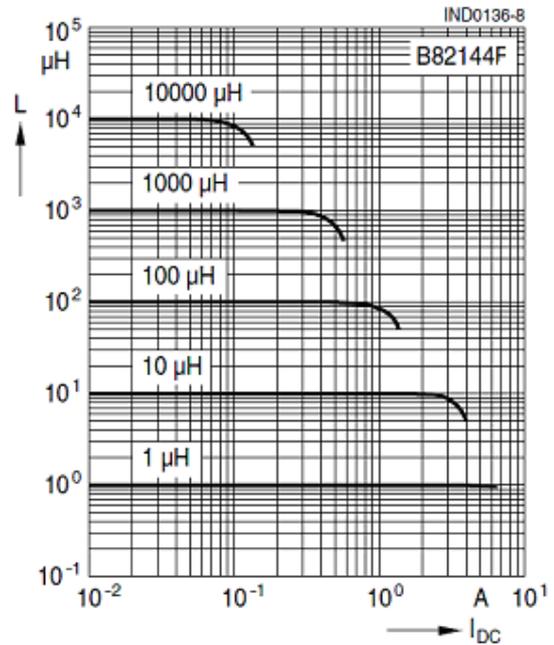
<sup>1)</sup> Closer tolerance on request.

<sup>2)</sup> For Ammo pack the last digit has to be a "9". Example: B82144F1223K009

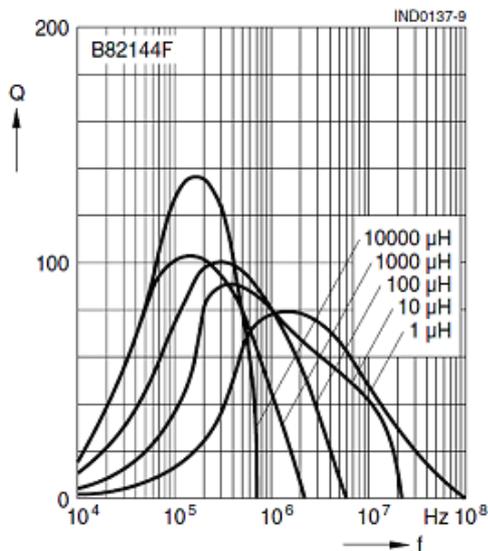
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at +20°C



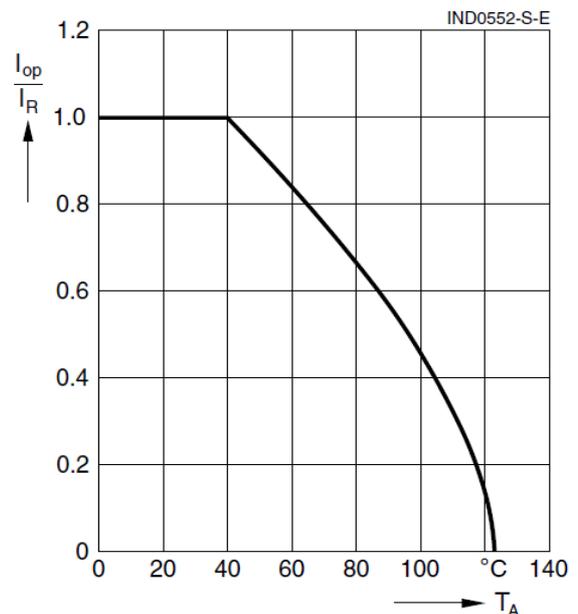
**Inductance  $L$  versus DC load current  $I_{DC}$**   
 measured with LCR meter Agilent 4284A, typical values at +20°C



**Q factor versus frequency  $f$**   
 measured with impedance analyzer Agilent 4294A, typical values at +20°C



**Current derating  $I_{OP}/I_R$  versus ambient temperature  $T_A$**   
 (rated temperature  $T_R = +40°C$ )



## Cautions and warnings

### 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  
Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
  
- 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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