

# SMD Inductors(Coils)

## For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

### VLF Series VLF4012A

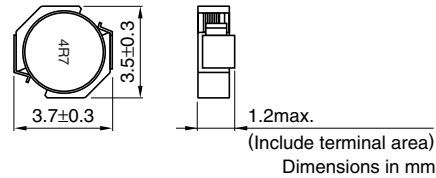
#### FEATURES

- Mount area: 3.5×3.7mm  
Low profile: 1.2mm max. height
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and reel package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

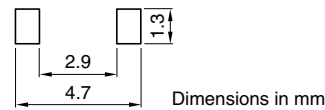
#### APPLICATIONS

Power source inductor for mobile devices such as mobile phones, HDDs, and DSCs

#### SHAPES AND DIMENSIONS



#### RECOMMENDED PC BOARD PATTERN



#### ELECTRICAL CHARACTERISTICS

| Part No.          | Inductance<br>[at 1/2 Idc1]*2<br>(μH) | Inductance<br>tolerance(%) | Test frequency<br>(kHz) | DC resistance(Ω) |       | Rated current*1(A)                      |                                        |
|-------------------|---------------------------------------|----------------------------|-------------------------|------------------|-------|-----------------------------------------|----------------------------------------|
|                   |                                       |                            |                         | max.             | typ.  | Based on inductance<br>change Idc1 max. | Based on temperature<br>rise Idc2 typ. |
| VLF4012AT-1R5M1R6 | 1.5                                   | ±20                        | 100                     | 0.079            | 0.069 | 1.8                                     | 1.6                                    |
| VLF4012AT-2R2M1R5 | 2.2                                   | ±20                        | 100                     | 0.087            | 0.076 | 1.5                                     | 1.5                                    |
| VLF4012AT-3R3M1R3 | 3.3                                   | ±20                        | 100                     | 0.12             | 0.1   | 1.3                                     | 1.3                                    |
| VLF4012AT-4R7M1R1 | 4.7                                   | ±20                        | 100                     | 0.16             | 0.14  | 1.1                                     | 1.1                                    |
| VLF4012AT-6R8MR96 | 6.8                                   | ±20                        | 100                     | 0.23             | 0.2   | 0.96                                    | 0.97                                   |
| VLF4012AT-100MR79 | 10                                    | ±20                        | 100                     | 0.35             | 0.3   | 0.80                                    | 0.79                                   |
| VLF4012AT-150MR63 | 15                                    | ±20                        | 100                     | 0.53             | 0.46  | 0.63                                    | 0.64                                   |
| VLF4012AT-220MR51 | 22                                    | ±20                        | 100                     | 0.82             | 0.71  | 0.52                                    | 0.51                                   |
| VLF4012AT-330MR39 | 33                                    | ±20                        | 100                     | 1.4              | 1.2   | 0.44                                    | 0.39                                   |
| VLF4012AT-470MR30 | 47                                    | ±20                        | 100                     | 2.3              | 2.0   | 0.36                                    | 0.30                                   |

\*1 Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

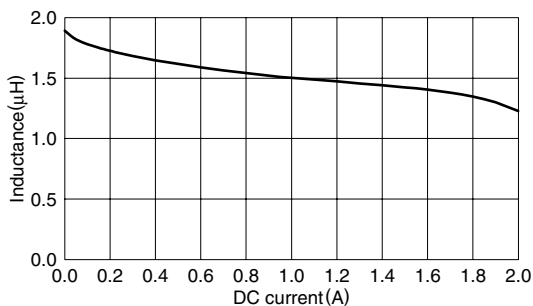
\*2 Inductance is at 1/2 Idc1 power distribution. The L value at 0A is higher than the guaranteed performance.

• Operating temperature range: -40 to +105°C (Including self-temperature rise)

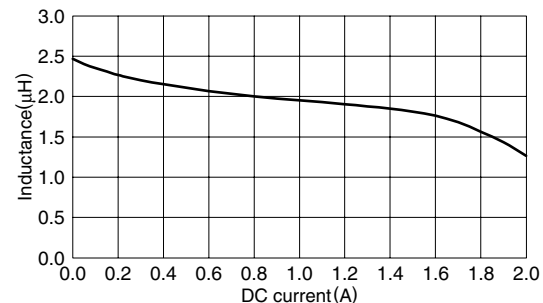
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

###### VLF4012AT-1R5M1R6



###### VLF4012AT-2R2M1R5



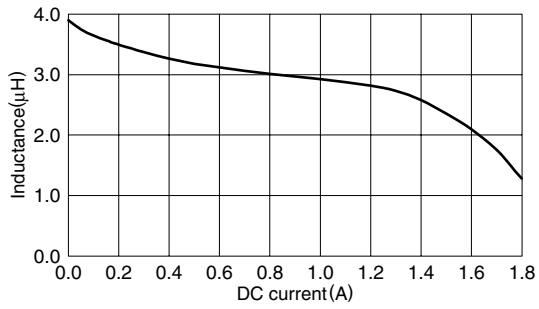
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

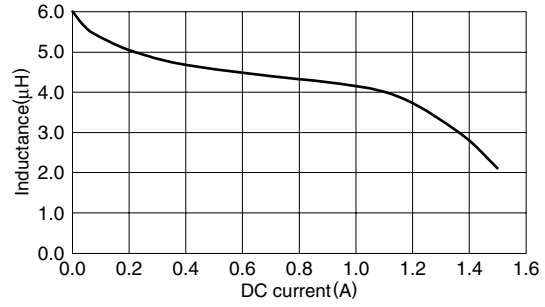
## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

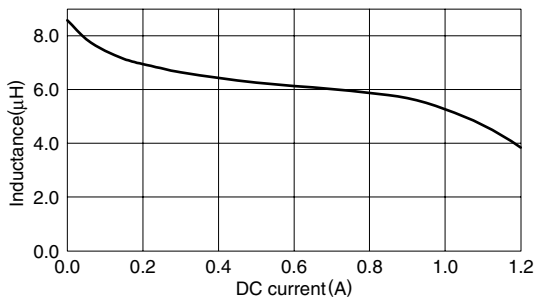
**VLF4012AT-3R3M1R3**



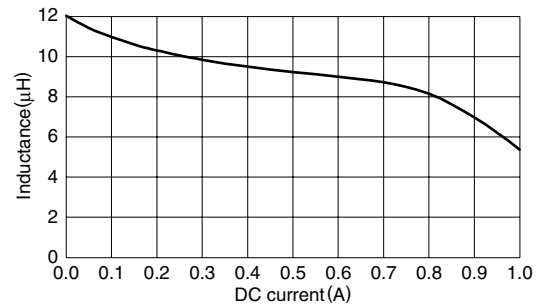
**VLF4012AT-4R7M1R1**



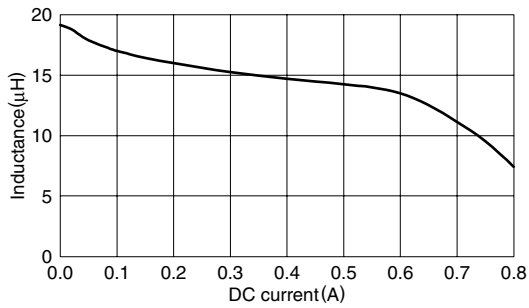
**VLF4012AT-6R8MR96**



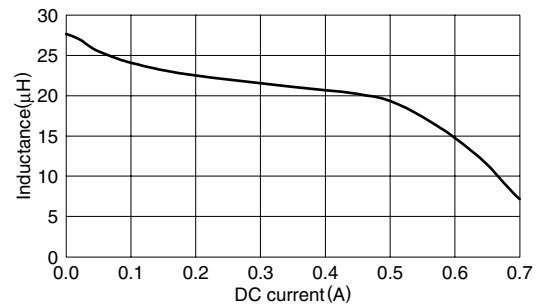
**VLF4012AT-100MR79**



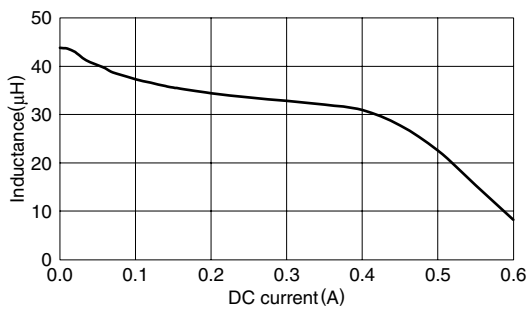
**VLF4012AT-150MR63**



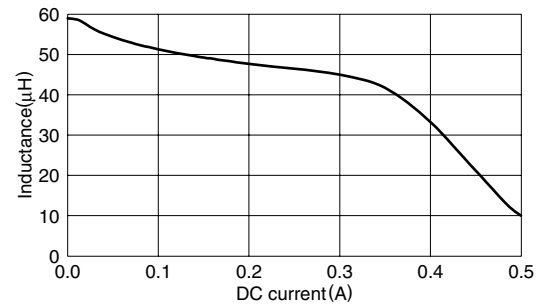
**VLF4012AT-220MR51**



**VLF4012AT-330MR39**



**VLF4012AT-470MR30**



### TEST CIRCUIT

