

# Inductors for Power Circuits

Wound/STD • magnetic shielded

## VLF series

**Type:**           VLF3014A (2.6x2.8 mm)  
                  VLF302510MT (3.0x2.5 mm)  
                  VLF302512MT (3.0x2.5 mm)  
                  VLF4012A (3.5x3.7 mm)  
                  VLF4014A (3.5x3.7 mm)  
                  VLF5010A-2 (4.5x4.7 mm)  
                  VLF5012A (4.5x4.7 mm)  
                  VLF5014A (4.5x4.7 mm)

**Issue date:**    March 2012

- All specifications are subject to change without notice.
- 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.

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF3014A

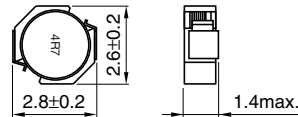
#### FEATURES

- Mount area: 2.6×2.8mm  
Low profile: 1.4mm 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.

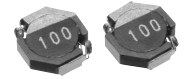
#### APPLICATIONS

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

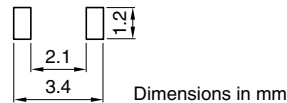
#### SHAPES AND DIMENSIONS



Dimensions in mm



#### RECOMMENDED PC BOARD PATTERN



Dimensions in mm

#### ELECTRICAL CHARACTERISTICS

Part No.	Inductance [at 1/2 Idc1] <sup>*3</sup> (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current(A)	
				max.	typ.	Based on inductance change Idc1 max. <sup>*1</sup>	Based on temperature rise Idc2 typ. <sup>*2</sup>
VLF3014AT-1R0N1R7	1	±30	100	0.054	0.047	2.5	1.7
VLF3014AT-2R2M1R2	2.2	±20	100	0.1	0.091	1.7	1.2
VLF3014AT-3R3M1R0	3.3	±20	100	0.15	0.13	1.3	1
VLF3014AT-4R7MR90	4.7	±20	100	0.2	0.17	1.2	0.9
VLF3014AT-6R8MR72	6.8	±20	100	0.31	0.27	1	0.72
VLF3014AT-100MR59	10	±20	100	0.46	0.4	0.8	0.59
VLF3014AT-220MR37	22	±20	100	1.20	1	0.52	0.37

<sup>\*1</sup> Rated current based on inductance variation: Current when inductance decreases by 30% of the initial value due to direct current superimposed characteristics

<sup>\*2</sup> Rated current based on increasing product temperature: Current when temperature of the product reaches +40°C

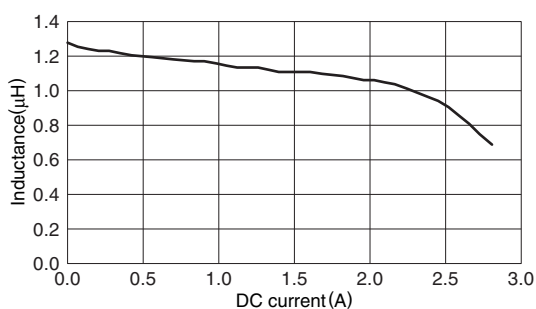
<sup>\*3</sup> Inductance is at 1/2 Idc1 power distribution. The L value at 0A is higher than the guaranteed performance.

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

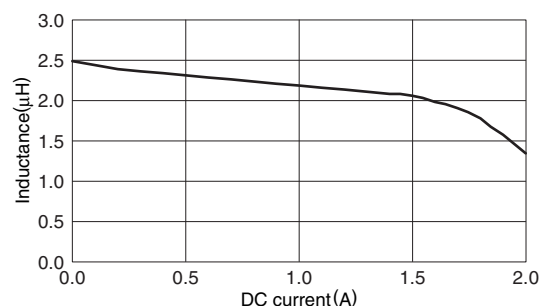
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

###### VLF3014AT-1R0N1R7



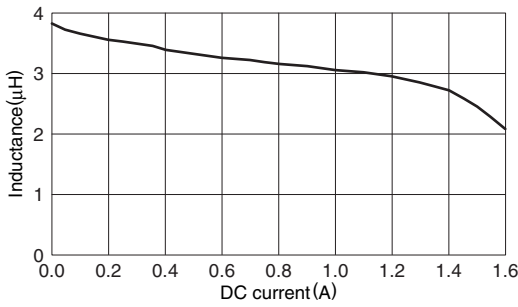
###### VLF3014AT-2R2M1R2



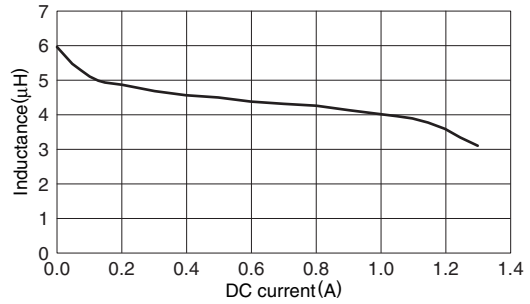
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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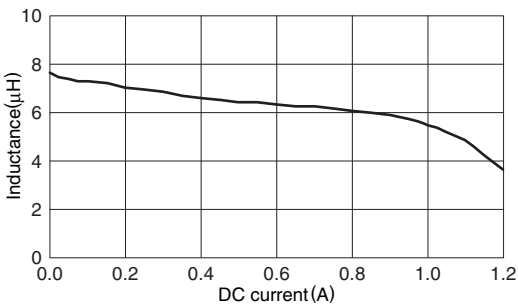
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLF3014AT-3R3M1R0**



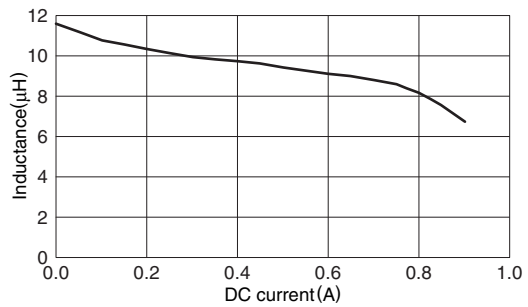
**VLF3014AT-4R7MR90**



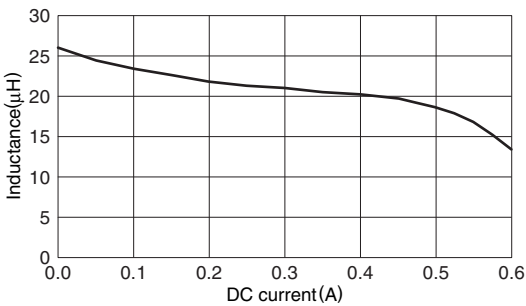
**VLF3014AT-6R8MR72**



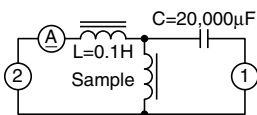
**VLF3014AT-100MR59**



**VLF3014AT-220MR37**



**TEST CIRCUIT**



- 1: LCR meter 4285A f=100kHz
- 2: DC constant current

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF-MT Series VLF302510MT

With the VLF302510MT Series, a DC to DC converter with top-class voltage conversion efficiency for similar size products was achieved by optimizing the magnetic material and configuration. These products are optimal for use as choke coils in switching power supplies such as those in mobile devices requiring space-saving design.

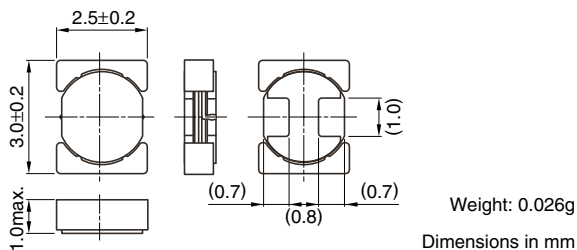
#### FEATURES

- Miniature size  
Mount area: 3.0×2.5mm  
Low profile: 1.0mm max. height
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- The products contain no lead and also support lead-free soldering.
- The products is halogen-free.
- It is a product conforming to RoHS directive.

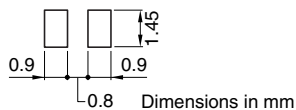
#### APPLICATIONS

Smartphones, cellular phones, DSCs, DVCs, HDDs, LCD displays, compact power supply modules, etc.

#### SHAPES AND DIMENSIONS



#### RECOMMENDED PC BOARD PATTERN



#### CIRCUIT DIAGRAM



#### PRODUCT IDENTIFICATION

VLF	302510M	T	-	1R0	N
(1)	(2)	(3)	(4)	(5)	

(1) Series name

(2) Dimensions L×W×H mm max.

(3) Packaging style

T	Taping (Embossed carrier tape)
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(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

#### PACKAGING STYLE AND QUANTITIES

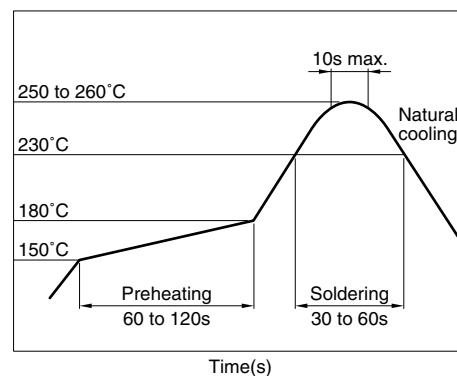
Packaging style	Quantity
Taping	2000 pieces/reel

#### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components.  
The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### RECOMMENDED SOLDERING CONDITION

##### REFLOW SOLDERING



• 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.

• Please contact our Sales office when your application is considered the following:  
The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

## ELECTRICAL CHARACTERISTICS

Part No.	Inductance ( $\mu\text{H}$ )	Inductance tolerance(%)	Test frequency (MHz)	DC resistance( $\Omega$ )		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF302510MT-1R0N	1.0	$\pm 30$	1.0	0.040	0.033	2.00	2.22	2.13
VLF302510MT-1R5N	1.5	$\pm 30$	1.0	0.066	0.055	1.49	1.65	1.65
VLF302510MT-2R2M	2.2	$\pm 20$	1.0	0.084	0.070	1.23	1.37	1.50
VLF302510MT-3R3M	3.3	$\pm 20$	1.0	0.126	0.105	1.09	1.21	1.20
VLF302510MT-4R7M	4.7	$\pm 20$	1.0	0.168	0.140	0.86	0.95	1.08
VLF302510MT-6R8M	6.8	$\pm 20$	1.0	0.258	0.215	0.73	0.81	0.84
VLF302510MT-100M	10	$\pm 20$	1.0	0.372	0.310	0.59	0.65	0.73
VLF302510MT-150M	15	$\pm 20$	1.0	0.600	0.500	0.47	0.52	0.55
VLF302510MT-220M	22	$\pm 20$	1.0	0.876	0.730	0.38	0.42	0.45

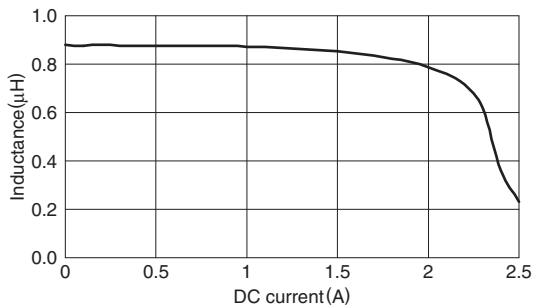
\* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

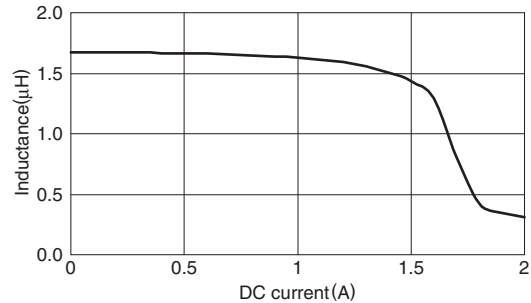
## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

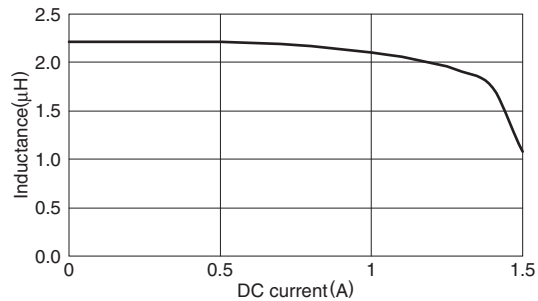
#### VLF302510MT-1R0N



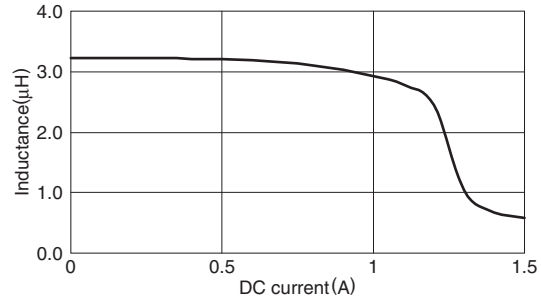
#### VLF302510MT-1R5N



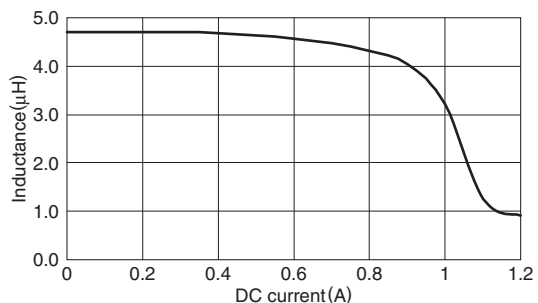
#### VLF302510MT-2R2M



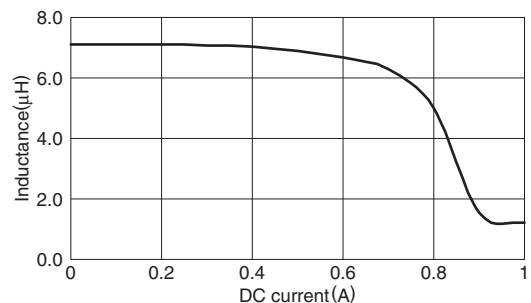
#### VLF302510MT-3R3M



#### VLF302510MT-4R7M



#### VLF302510MT-6R8M

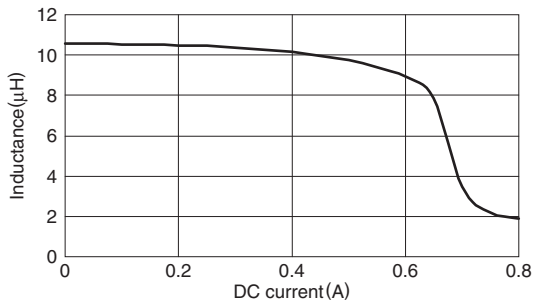


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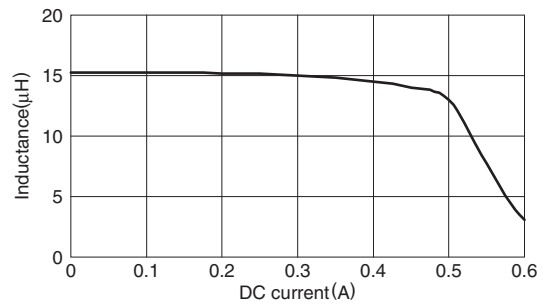
## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

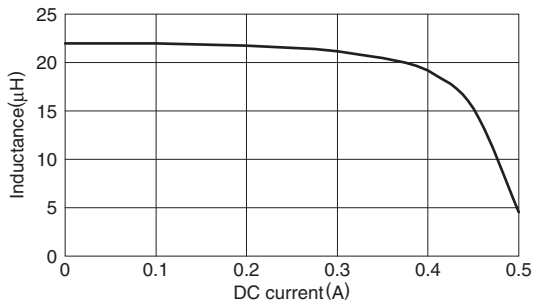
#### VLF302510MT-100M



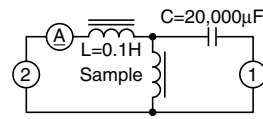
#### VLF302510MT-150M



#### VLF302510MT-220M



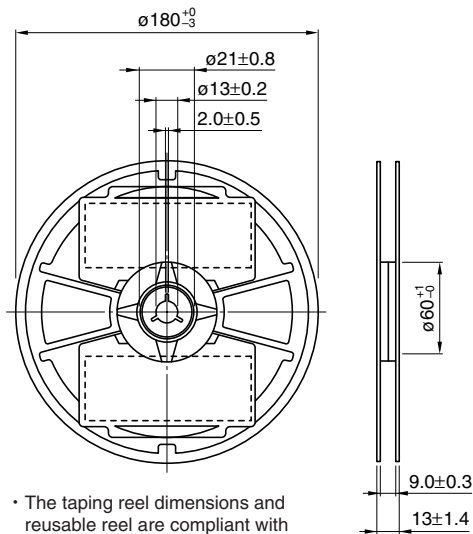
### TEST CIRCUIT



- 1: LCR meter 4285A  $f=1\text{MHz}$   
2: DC constant current source

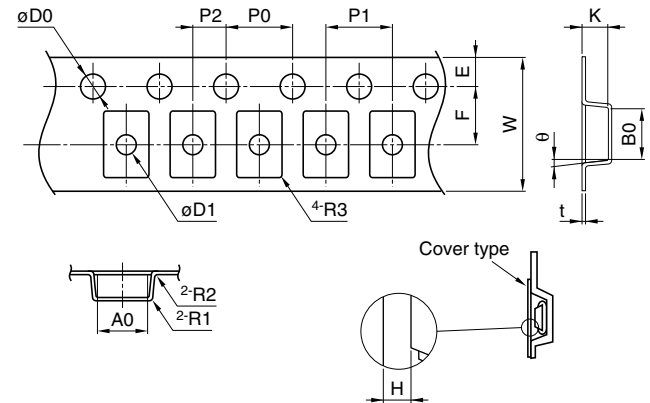
## PACKAGING STYLES

### REEL DIMENSIONS



Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

A0	B0	W	F	E
2.8typ.	3.3typ.	8.00±0.2	3.50±0.1	1.75±0.1
P1	P2	H	P0	φD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/-0
K	φD1	t	R1 to R3	θ
1.15±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

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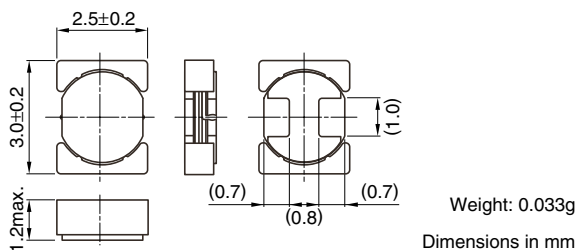
#### FEATURES

- Miniature size  
Mount area: 3.0×2.5mm  
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.
- The products contain no lead and also support lead-free soldering.
- The products is halogen-free.
- It is a product conforming to RoHS directive.

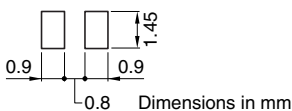
#### APPLICATIONS

Smartphones, cellular phones, DSCs, DVCs, HDDs, LCD displays, compact power supply modules, etc.

#### SHAPES AND DIMENSIONS



#### RECOMMENDED PC BOARD PATTERN



#### CIRCUIT DIAGRAM



#### PRODUCT IDENTIFICATION

VLF	302512M	T	-	1R0	N
(1)	(2)	(3)	(4)	(5)	

(1) Series name

(2) Dimensions L×W×H mm max.

(3) Packaging style

T	Taping (Embossed carrier tape)
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(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

#### PACKAGING STYLE AND QUANTITIES

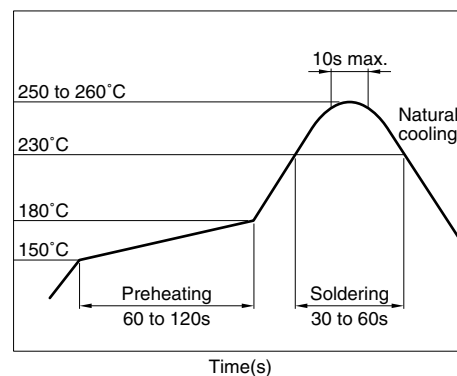
Packaging style	Quantity
Taping	2000 pieces/reel

#### HANDLING AND PRECAUTIONS

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- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### RECOMMENDED SOLDERING CONDITION

##### REFLOW SOLDERING



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## ELECTRICAL CHARACTERISTICS

Part No.	Inductance ( $\mu\text{H}$ )	Inductance tolerance(%)	Test frequency (MHz)	DC resistance( $\Omega$ )		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF302512MT-1R0N	1.0	$\pm 30$	1.0	0.037	0.031	1.91	2.12	2.77
VLF302512MT-1R5N	1.5	$\pm 30$	1.0	0.044	0.037	1.67	1.85	2.54
VLF302512MT-2R2M	2.2	$\pm 20$	1.0	0.066	0.055	1.26	1.40	1.95
VLF302512MT-3R3M	3.3	$\pm 20$	1.0	0.108	0.090	1.08	1.20	1.63
VLF302512MT-4R7M	4.7	$\pm 20$	1.0	0.136	0.113	0.97	1.08	1.42
VLF302512MT-6R8M	6.8	$\pm 20$	1.0	0.194	0.162	0.78	0.84	1.21
VLF302512MT-100M	10	$\pm 20$	1.0	0.299	0.249	0.62	0.69	0.95
VLF302512MT-150M	15	$\pm 20$	1.0	0.448	0.373	0.51	0.57	0.80
VLF302512MT-220M	22	$\pm 20$	1.0	0.700	0.583	0.43	0.47	0.64

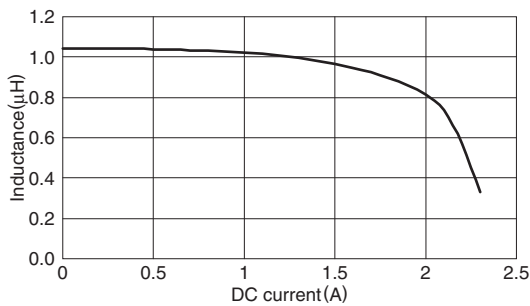
\* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

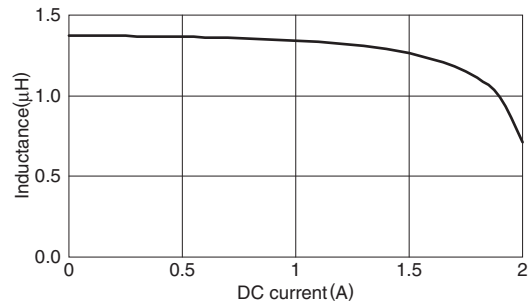
## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

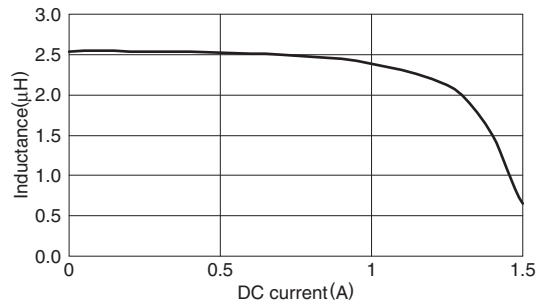
#### VLF302512MT-1R0N



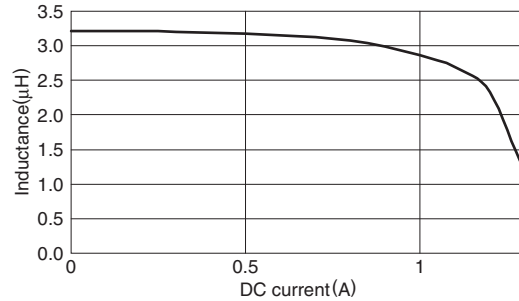
#### VLF302512MT-1R5N



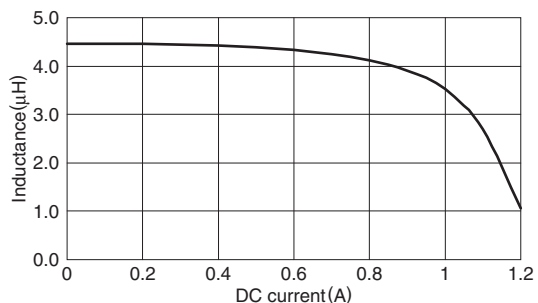
#### VLF302512MT-2R2M



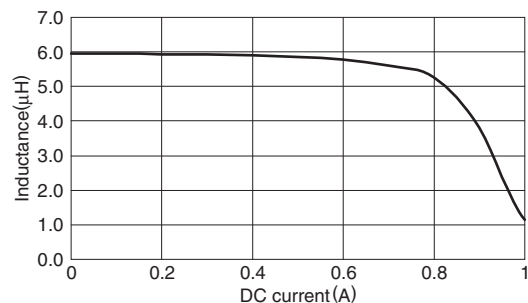
#### VLF302512MT-3R3M



#### VLF302512MT-4R7M



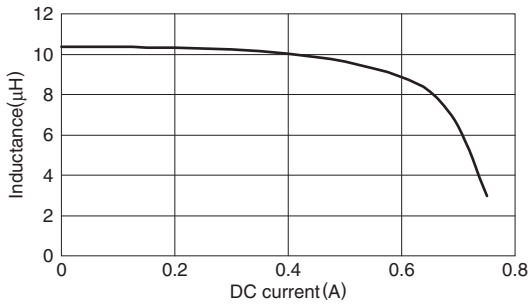
#### VLF302512MT-6R8M



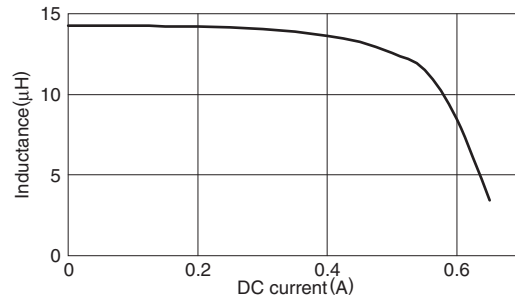
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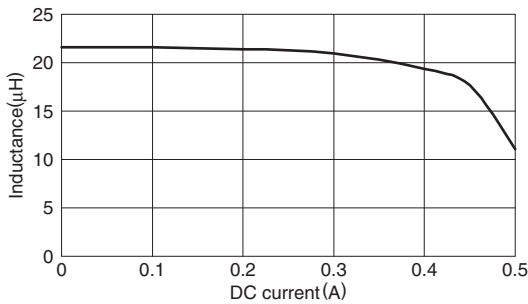
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLF302512MT-100M**



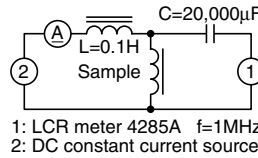
**VLF302512MT-150M**



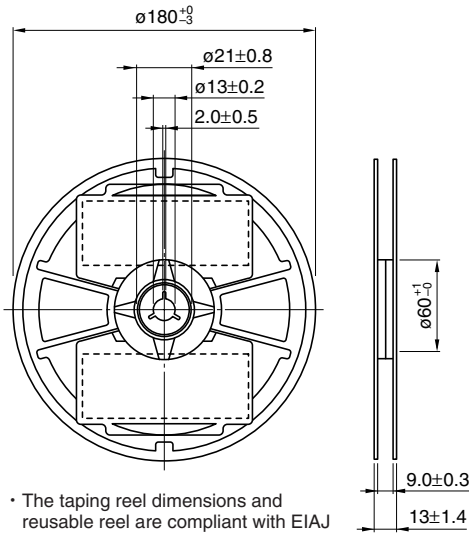
**VLF302512MT-220M**



**TEST CIRCUIT**



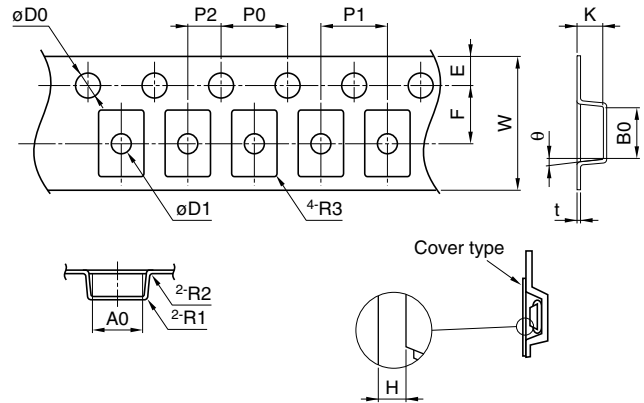
**PACKAGING STYLES**  
**REEL DIMENSIONS**



• The taping reel dimensions and reusable reel are compliant with EIAJ ET-7200.

Dimensions in mm

**TAPE DIMENSIONS**



Dimensions in mm

A0	B0	W	F	E
2.8typ.	3.3typ.	8.00± 0.2	3.50± 0.1	1.75± 0.1
P1	P2	H	P0	φD0
4.00± 0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/-0
K	φD1	t	R1 to R3	θ
1.35±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF4012A

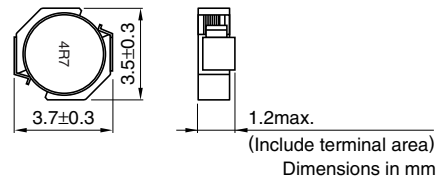
#### FEATURES

- 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.

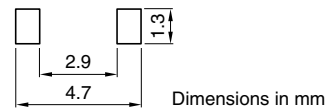
#### APPLICATIONS

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 [at 1/2 I <sub>dc1</sub> ] <sup>*2</sup> (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current <sup>*1</sup> (A)	
				max.	typ.	Based on inductance change I <sub>dc1</sub> max.	Based on temperature rise I <sub>dc2</sub> 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

<sup>\*1</sup> 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.

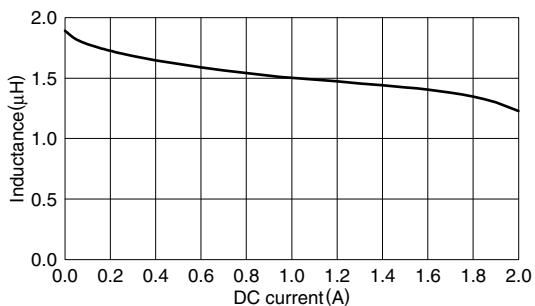
<sup>\*2</sup> Inductance is at 1/2 I<sub>dc1</sub> power distribution. The L value at 0A is higher than the guaranteed performance.

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

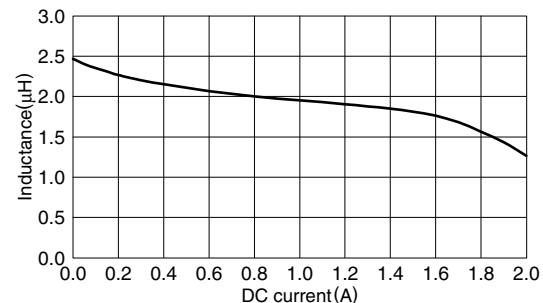
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

###### VLF4012AT-1R5M1R6



###### VLF4012AT-2R2M1R5

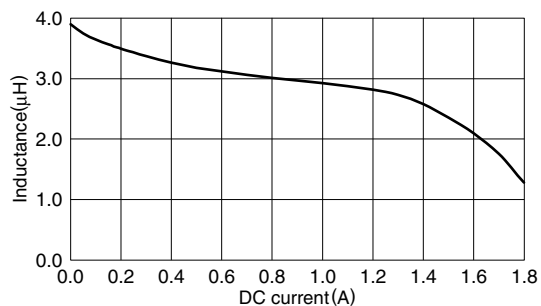


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

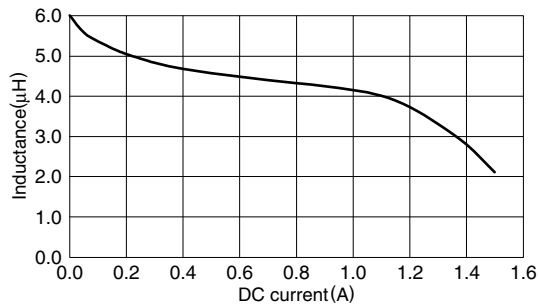
- All specifications are subject to change without notice.

### TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

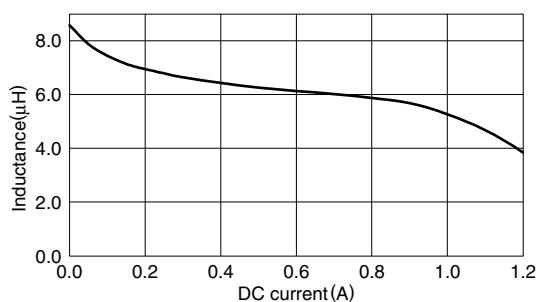
VLF4012AT-3R3M1R3



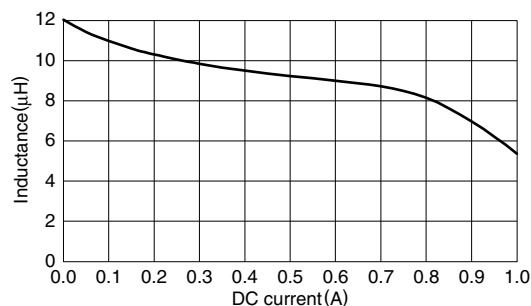
VLF4012AT-4R7M1R1



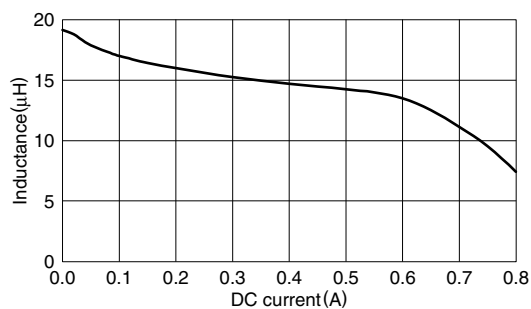
VLF4012AT-6R8MR96



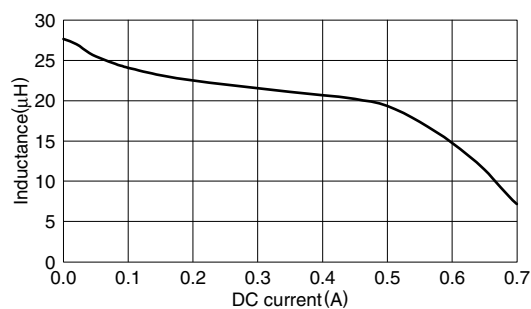
VLF4012AT-100MR79



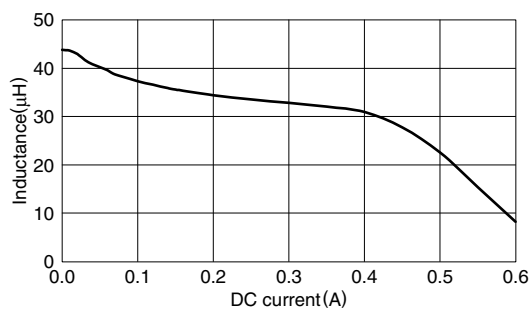
VLF4012AT-150MR63



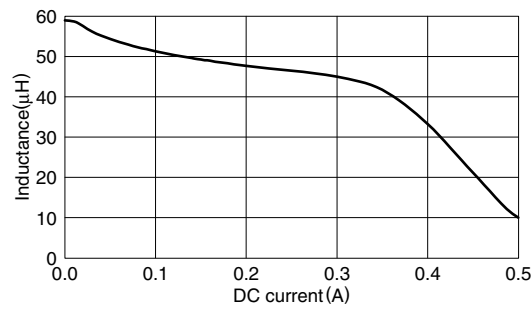
VLF4012AT-220MR51



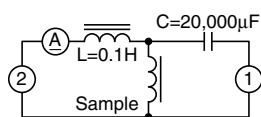
VLF4012AT-330MR39



VLF4012AT-470MR30



### TEST CIRCUIT



- 1: LCR meter 4285A=100kHz
- 2: DC constant current

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF4014A

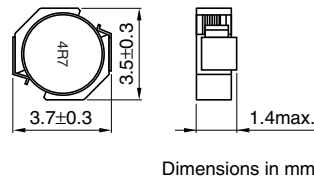
#### FEATURES

- Mount area: 3.5×3.7mm  
Low profile: 1.4mm 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.

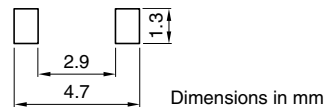
#### APPLICATIONS

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

#### SHAPES AND DIMENSIONS



#### RECOMMENDED PC BOARD PATTERN



#### ELECTRICAL CHARACTERISTICS

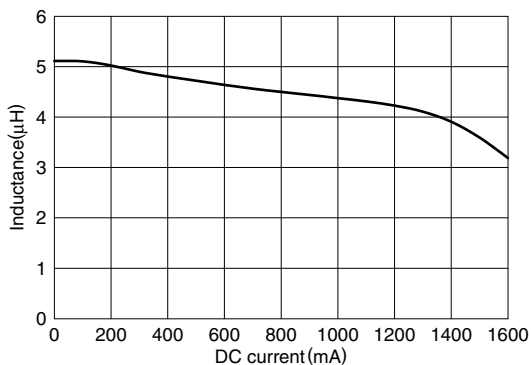
Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLF4014AT-4R7M1R1	4.7	±20	100	0.16	0.14	1.2	1.1
VLF4014AT-100MR90	10	±20	100	0.26	0.23	0.9	0.9

\* 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.

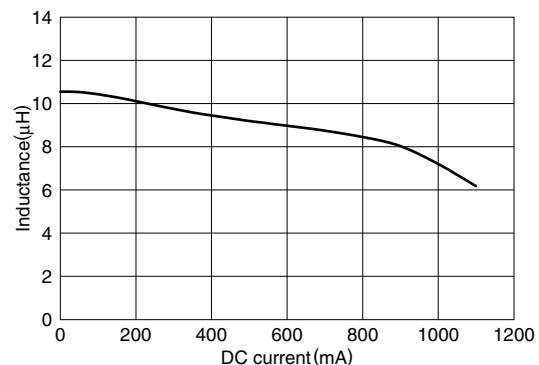
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

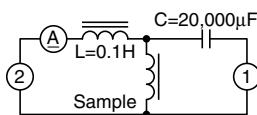
###### VLF4014AT-4R7M1R1



###### VLF4014AT-100MR90



#### TEST CIRCUIT



1: LCR meter 4285A=100kHz  
2: DC constant current

- 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.

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF5010A-2

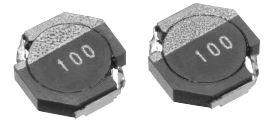
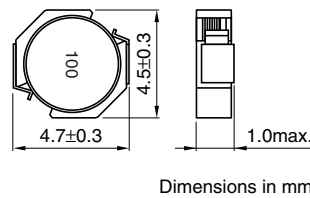
#### FEATURES

- Miniature size  
Mount area: 4.5×4.7mm  
Low profile: 1.0mm 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.

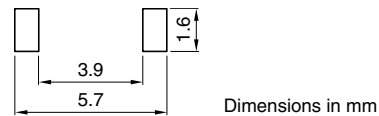
#### APPLICATIONS

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 [at 1/2 I <sub>dc1</sub> ] <sup>*2</sup> (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current <sup>*1</sup> (A)	
				max.	typ.	Based on inductance change I <sub>dc1</sub> max.	Based on temperature rise I <sub>dc2</sub> typ.
VLF5010AT-100MR78-2	10	±20	100	0.36	0.31	0.8	0.78
VLF5010AT-150MR62-2	15	±20	100	0.55	0.48	0.66	0.62
VLF5010AT-220MR50-2	22	±20	100	0.85	0.74	0.54	0.5
VLF5010AT-330MR41-2	33	±20	100	1.3	1.1	0.43	0.41

<sup>\*1</sup> 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.

<sup>\*2</sup> Inductance is at 1/2 I<sub>dc1</sub> power distribution. The L value at 0A is higher than the guaranteed performance.

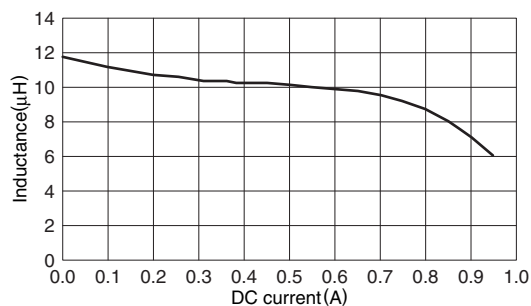
- Operating temperature range: -40 to +105°C (Including self-temperature rise)

• 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.

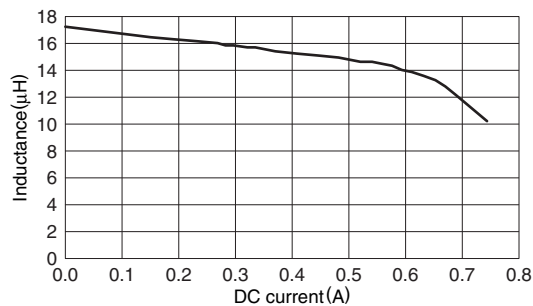
• All specifications are subject to change without notice.

### TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

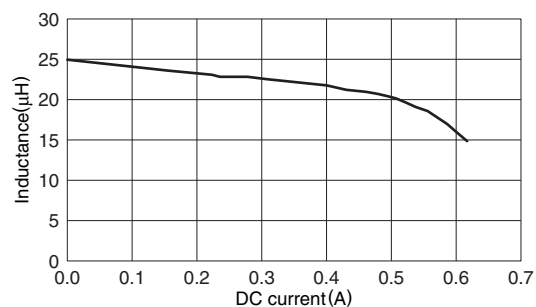
VLF5010AT-100MR78-2



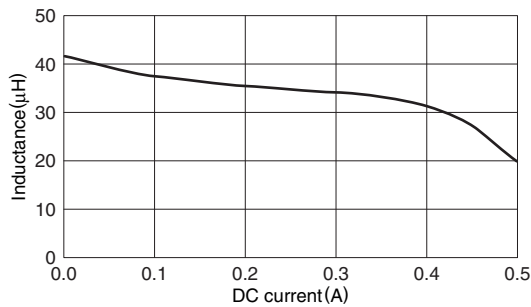
VLF5010AT-150MR62-2



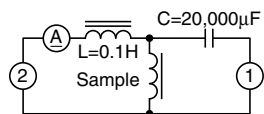
VLF5010AT-220MR50-2



VLF5010AT-330MR41-2



### TEST CIRCUIT



1: LCR meter 4285A f=100kHz  
 2: DC constant current

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF5012A

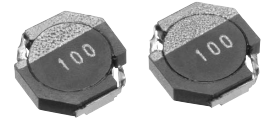
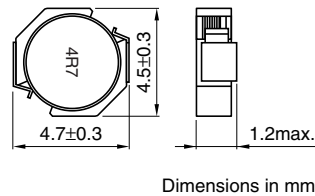
#### FEATURES

- Miniature size  
Mount area: 4.5×4.7mm  
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.
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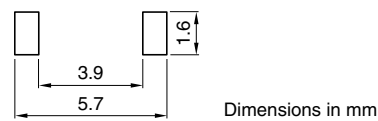
#### APPLICATIONS

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 [at 1/2 I <sub>dc1</sub> ] <sup>*2</sup> (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current <sup>*1</sup> (A)	
				max.	typ.	Based on inductance change I <sub>dc1</sub> max.	Based on temperature rise I <sub>dc2</sub> typ.
VLF5012AT-2R2M1R5	2.2	±20	100	0.11	0.09	2.3	1.5
VLF5012AT-3R3M1R3	3.3	±20	100	0.14	0.12	1.7	1.3
VLF5012AT-4R7M1R2	4.7	±20	100	0.16	0.14	1.5	1.2
VLF5012AT-6R8M1R0	6.8	±20	100	0.2	0.17	1.2	1
VLF5012AT-100MR80	10	±20	100	0.35	0.3	1	0.8

\*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.

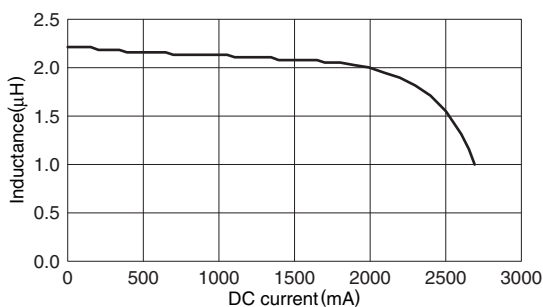
\*2 Inductance is at 1/2 I<sub>dc1</sub> power distribution. The L value at 0A is higher than the guaranteed performance.

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

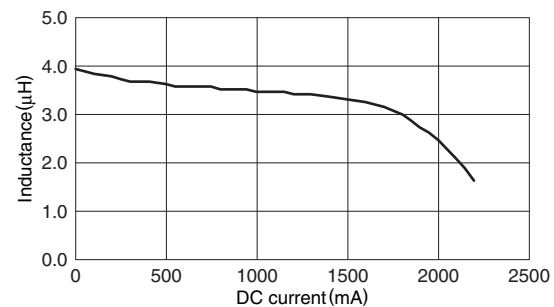
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

###### VLF5012AT-2R2M1R5



###### VLF5012AT-3R3M1R3

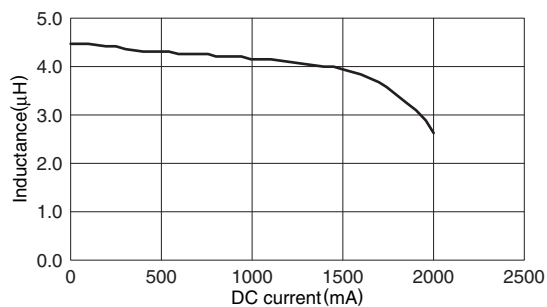


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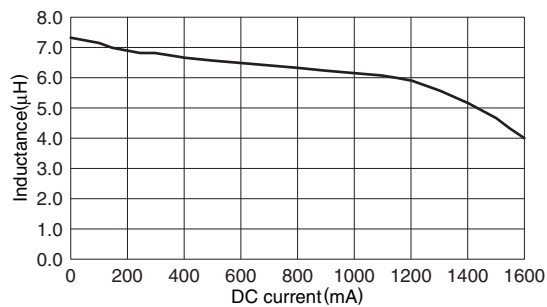
• All specifications are subject to change without notice.

### TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

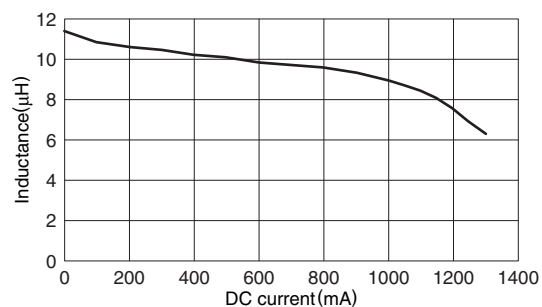
#### VLF5012AT-4R7M1R2



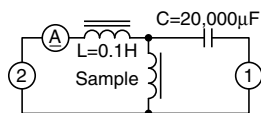
#### VLF5012AT-6R8M1R0



#### VLF5012AT-100MR80



### TEST CIRCUIT



1: LCR meter 4285A  $f=100kHz$   
2: DC constant current



# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

### VLF Series VLF5014A

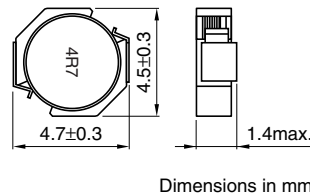
#### FEATURES

- Miniature size  
Mount area: 4.5×4.7mm  
Low profile: 1.4mm 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.
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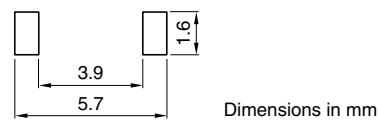
#### APPLICATIONS

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 [at 1/2 I <sub>dc1</sub> ] <sup>*2</sup> (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current <sup>*1</sup> (A)	
				max.	typ.	Based on inductance change I <sub>dc1</sub> max.	Based on temperature rise I <sub>dc2</sub> typ.
VLF5014AT-1R5M1R7	1.5	±20	100	0.059	0.051	2.9	1.7
VLF5014AT-2R7M1R5	2.7	±20	100	0.078	0.068	2.2	1.5
VLF5014AT-4R7M1R1	4.7	±20	100	0.13	0.12	1.7	1.1
VLF5014AT-6R8MR99	6.8	±20	100	0.19	0.16	1.4	0.99
VLF5014AT-100MR92	10	±20	100	0.22	0.19	1.1	0.92
VLF5014AT-150MR76	15	±20	100	0.32	0.28	0.97	0.76
VLF5014AT-220MR62	22	±20	100	0.46	0.40	0.81	0.62
VLF5014AT-330MR50	33	±20	100	0.72	0.63	0.64	0.50
VLF5014AT-470MR41	47	±20	100	1.1	0.95	0.54	0.41
VLF5014AT-101MR26	100	±20	100	2.7	2.4	0.37	0.26

<sup>\*1</sup> 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.

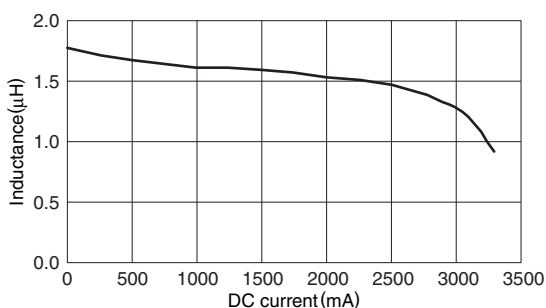
<sup>\*2</sup> Inductance is at 1/2 I<sub>dc1</sub> power distribution. The L value at 0A is higher than the guaranteed performance.

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

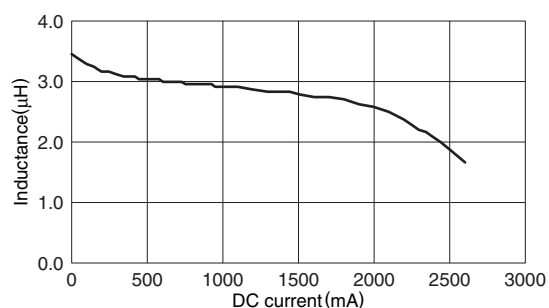
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

###### VLF5014AT-1R5M1R7



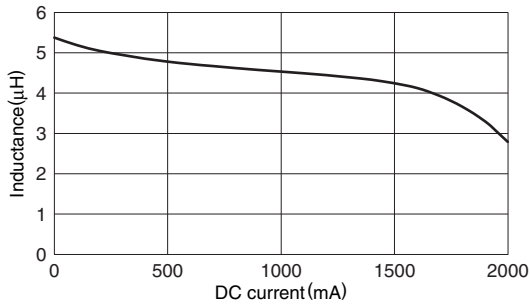
###### VLF5014AT-2R7M1R5



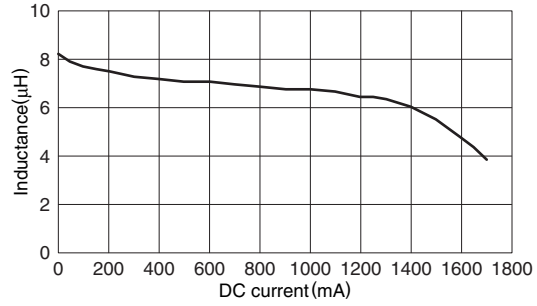
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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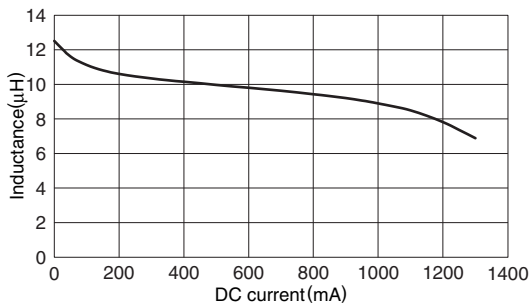
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLF5014AT-4R7M1R1**



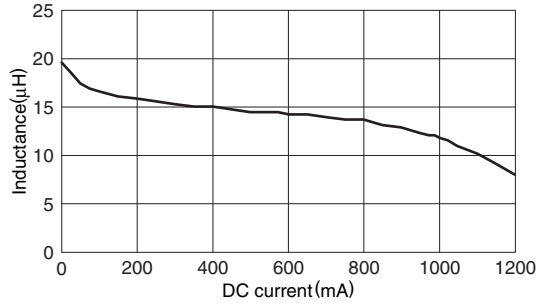
**VLF5014AT-6R8MR99**



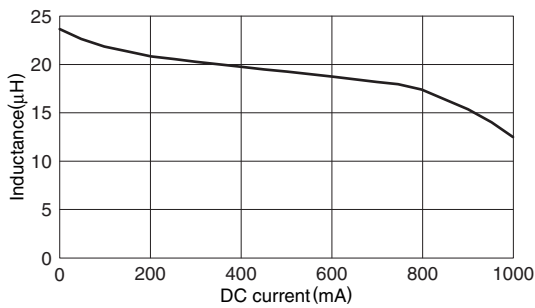
**VLF5014AT-100MR92**



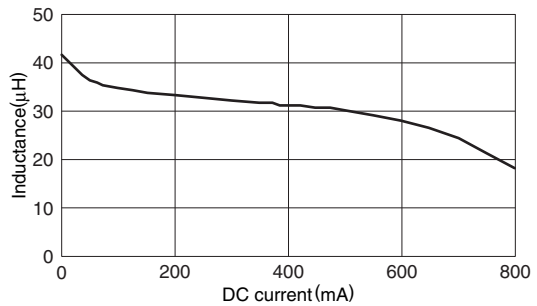
**VLF5014AT-150MR76**



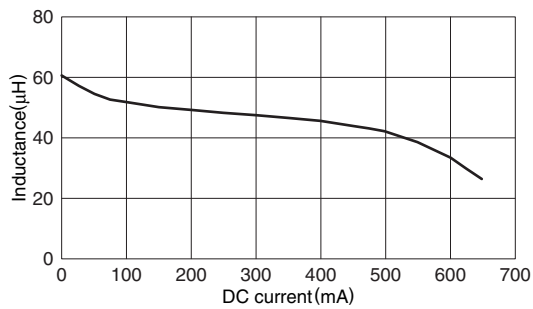
**VLF5014AT-220MR62**



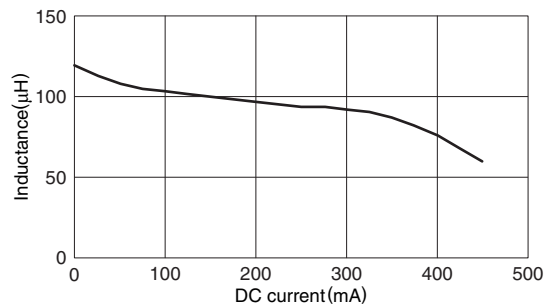
**VLF5014AT-330MR50**



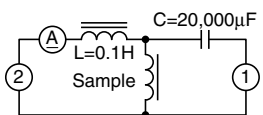
**VLF5014AT-470MR41**



**VLF5014AT-101MR26**



**TEST CIRCUIT**



1: LCR meter 4285A  $f=100\text{kHz}$   
 2: DC constant current