TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF3010A

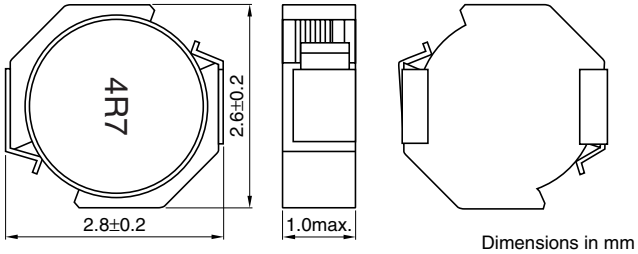
FEATURES

- These are compact inductors for power line measuring at L2.6× W2.8mm and 1mm in height, considerably smaller compared to inductors with comparable characteristics.
- They feature low coil resistance, making them suitable for large currents (e.g. 0.7A at 0.24Ω).
- They offer an excellent shielding effect.
- The products do not contain lead and support lead-free soldering.
- This product does not contain regulated substances that are slated to be included in RoHS.

APPLICATIONS

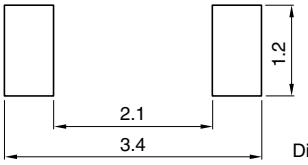
For mobile phones, hard disk drives and DSCs.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

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.
VLF3010AT-1R5N1R2	1.5	±30%	100	0.078	0.068	1.2	1.5
VLF3010AT-2R2M1R0	2.2	±20%	100	0.12	0.10	1.0	1.2
VLF3010AT-3R3MR87	3.3	±20%	100	0.17	0.15	0.87	1.0
VLF3010AT-4R7MR70	4.7	±20%	100	0.28	0.24	0.70	0.82
VLF3010AT-6R8MR61	6.8	±20%	100	0.39	0.34	0.61	0.68
VLF3010AT-100MR49	10.0	±20%	100	0.67	0.58	0.49	0.52
VLF3010AT-150MR40	15.0	±20%	100	0.86	0.75	0.40	0.46
VLF3010AT-220MR33	22.0	±20%	100	1.5	1.3	0.33	0.35

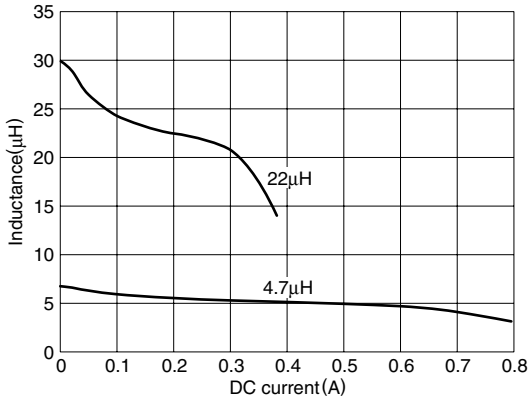
* Rated current:The rated current is the smaller of the values given based on the rate of inductance change (30% decrease from the initial value) or the temperature rise (temperature rise of 40°C caused by the heat generated by the product itself).

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

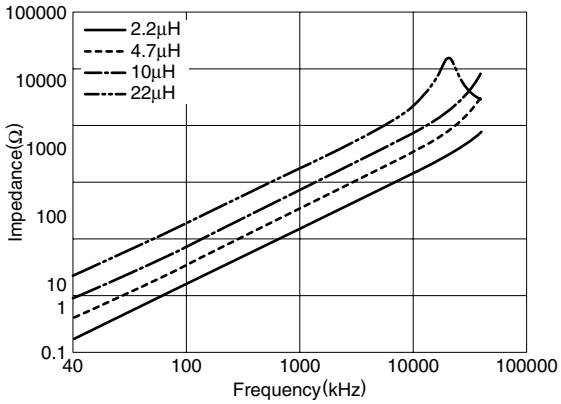
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

TYPICAL ELECTRICAL CHARACTERISTICS

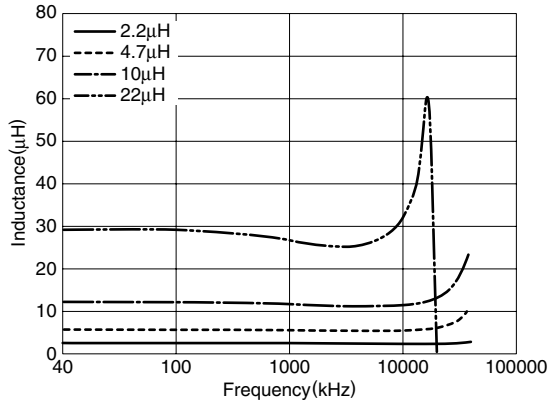
INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



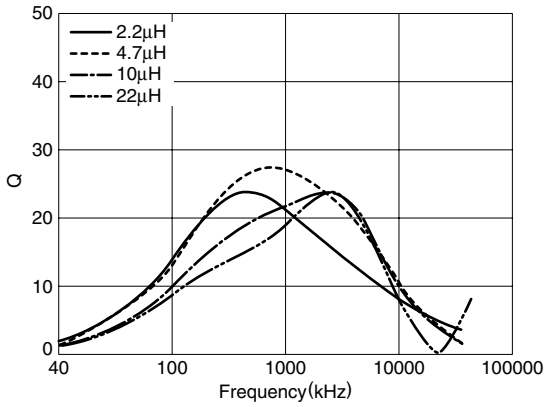
IMPEDANCE vs. FREQUENCY CHARACTERISTICS



INDUCTANCE vs. FREQUENCY CHARACTERISTICS

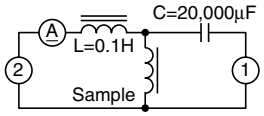


Q vs. FREQUENCY CHARACTERISTICS



• Test equipment: YHP4194A IMPEDANCE/GAIN-PHASE ANALYZER(10kHz to 40MHz)

TEST CIRCUIT



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

TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

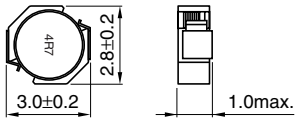
Conformity to RoHS Directive

VLF Series VLF3010S

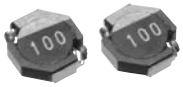
FEATURES

- Miniature size
  Mount area: 2.8×3.0mm
  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 real package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

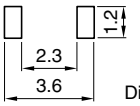
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

APPLICATIONS

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

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLF3010ST-1R0N1R7	1	±30	1	0.049	0.041	1.7	2.3
VLF3010ST-2R2M1R1	2.2	±20	1	0.092	0.077	1.1	1.6
VLF3010ST-3R3MR88	3.3	±20	1	0.13	0.11	0.88	1.3
VLF3010ST-4R7MR75	4.7	±20	1	0.18	0.15	0.75	1.1
VLF3010ST-6R8MR65	6.8	±20	1	0.25	0.22	0.65	0.95
VLF3010ST-100MR53	10	±20	1	0.49	0.41	0.53	0.7
VLF3010ST-150MR38	15	±20	1	0.61	0.51	0.38	0.63
VLF3010ST-220MR34	22	±20	1	0.97	0.81	0.34	0.5

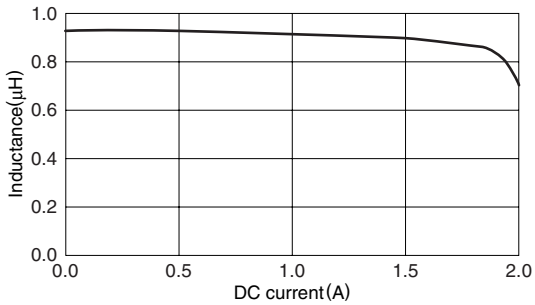
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

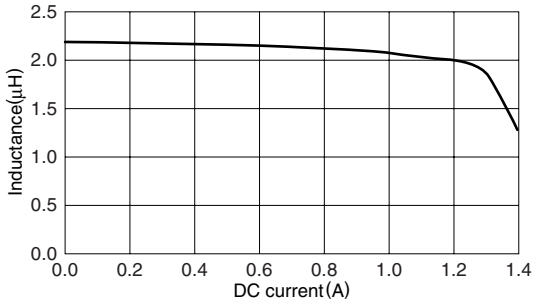
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF3010ST-1R0N1R7



VLF3010ST-2R2M1R1

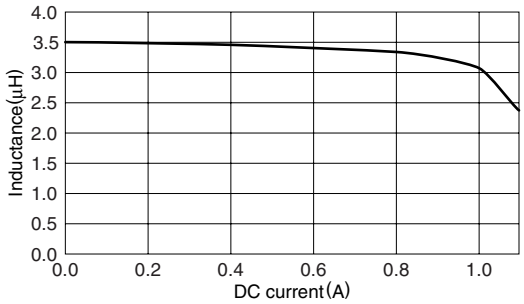


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

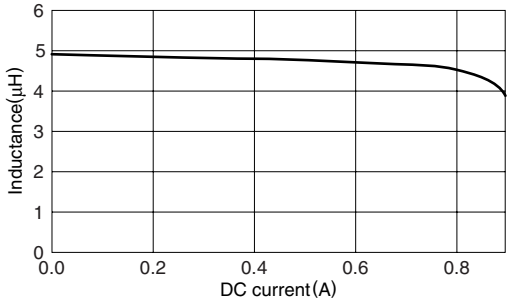
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

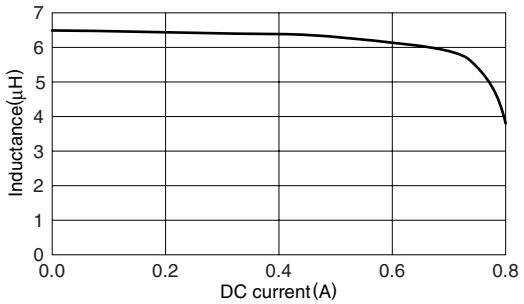
VLF3010ST-3R3MR88



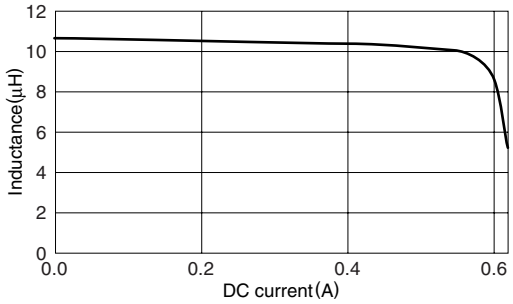
VLF3010ST-4R7MR75



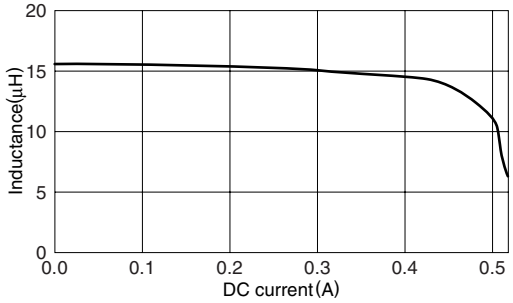
VLF3010ST-6R8MR65



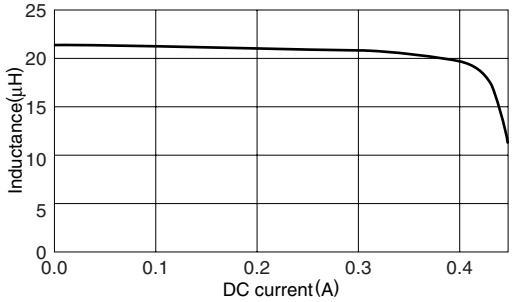
VLF3010ST-100MR53



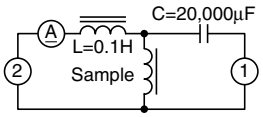
VLF3010ST-150MR38



VLF3010ST-220MR34



TEST CIRCUIT



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

TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF3012A

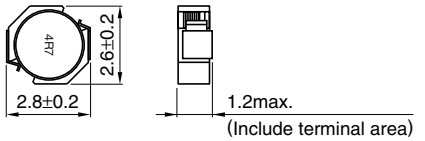
FEATURES

- Miniature size
  Mount area: 2.6×2.8mm
  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 real package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

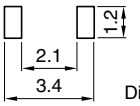
Power souce inductor for mobile devices such as mobile phones, HDDs, and DSCs

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance [at 1/2 Idc1]*2 (µH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current*1(A)	
				max.	typ.	Based on inductance change Idc1 max.	Based on temperature rise Idc2 typ.
VLF3012AT-1R5N1R2	1.5	±30	100	0.068	0.059	1.2	1.6
VLF3012AT-2R2M1R0	2.2	±20	100	0.1	0.088	1.0	1.3
VLF3012AT-3R3MR87	3.3	±20	100	0.13	0.11	0.87	1.2
VLF3012AT-4R7MR74	4.7	±20	100	0.19	0.16	0.74	0.98
VLF3012AT-6R8MR59	6.8	±20	100	0.27	0.23	0.59	0.83
VLF3012AT-100MR49	10	±20	100	0.41	0.36	0.49	0.67
VLF3012AT-150MR41	15	±20	100	0.62	0.54	0.41	0.54
VLF3012AT-220MR33	22	±20	100	0.76	0.66	0.33	0.49
VLF3012AT-330MR27	33	±20	100	1.3	1.1	0.27	0.38
VLF3012AT-470MR22	47	±20	100	2.2	1.9	0.22	0.29

*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.

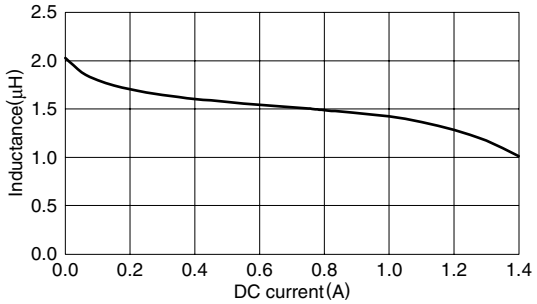
*2 Inductance is at 1/2 Idc1 power distribution. The L vaule at 0A is higher than the guaranteed performance.

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

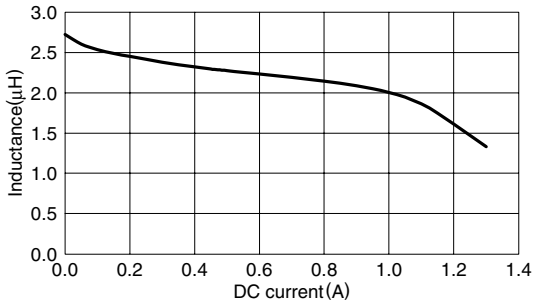
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF3012AT-1R5N1R2



VLF3012AT-2R2M1R0

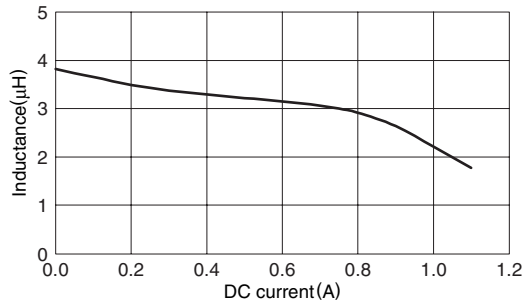


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

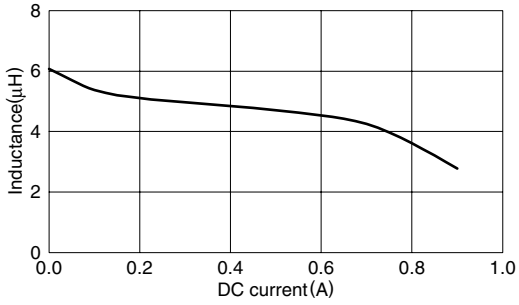
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

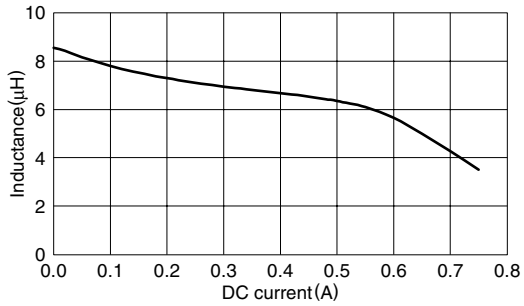
VLF3012AT-3R3MR87



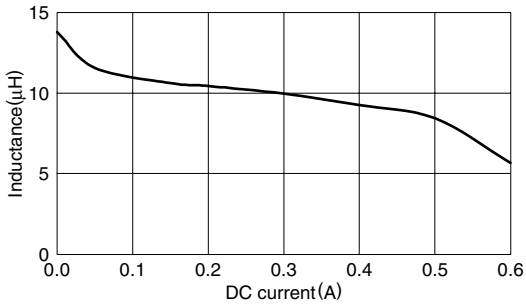
VLF3012AT-4R7MR74



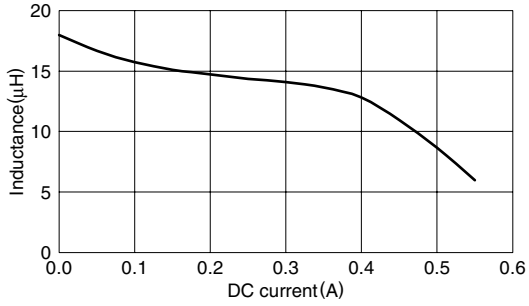
VLF3012AT-6R8MR59



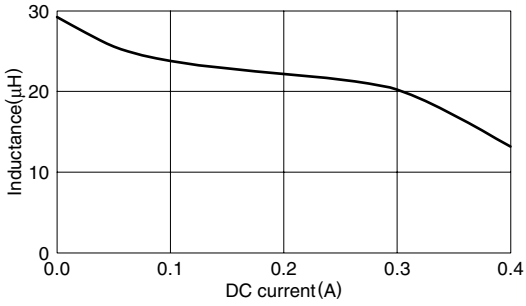
VLF3012AT-100MR49



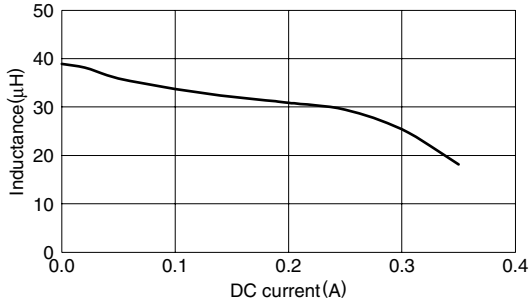
VLF3012AT-150MR41



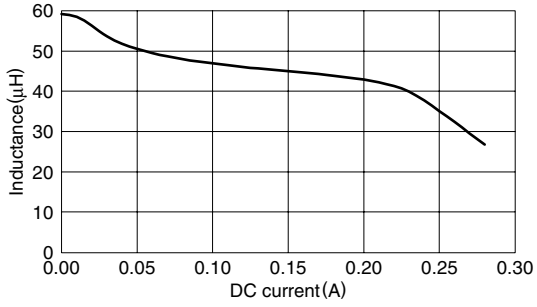
VLF3012AT-220MR33



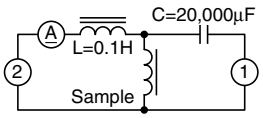
VLF3012AT-330MR27



VLF3012AT-470MR22



TEST CIRCUIT



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

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For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF3012S

FEATURES

- Miniature size
  Mount area: 2.8×3mm
  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 real package.
- The products contain no lead and also support lead-free soldering.
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APPLICATIONS

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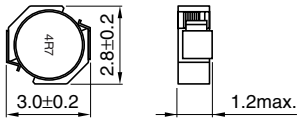
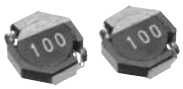
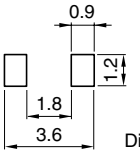
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLF3012ST-1R0N2R0	1	±30	1	0.038	0.032	2.0	2.7
VLF3012ST-2R2M1R4	2.2	±20	1	0.072	0.060	1.4	1.9
VLF3012ST-3R3M1R1	3.3	±20	1	0.11	0.090	1.1	1.6
VLF3012ST-4R7MR91	4.7	±20	1	0.155	0.13	0.91	1.3
VLF3012ST-6R8MR78	6.8	±20	1	0.22	0.18	0.78	1.1
VLF3012ST-100MR59	10	±20	1	0.33	0.28	0.59	0.91
VLF3012ST-150MR49	15	±20	1	0.49	0.41	0.49	0.78
VLF3012ST-220MR43	22	±20	1	0.74	0.61	0.43	0.63

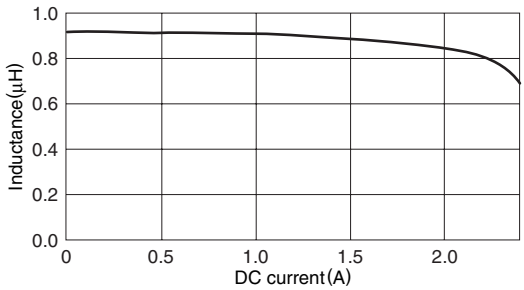
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

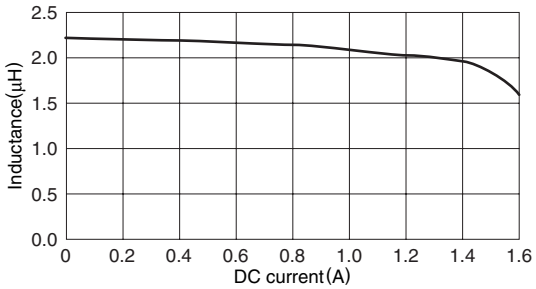
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF3012ST-1R0N2R0



VLF3012ST-2R2M1R4

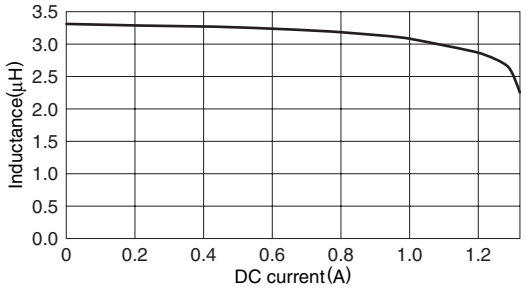


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

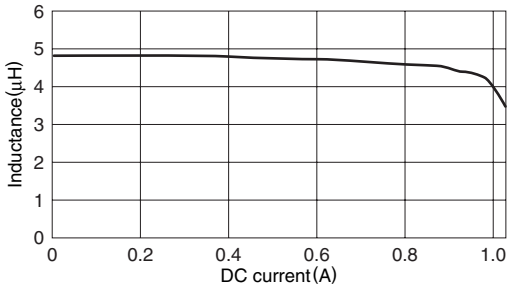
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

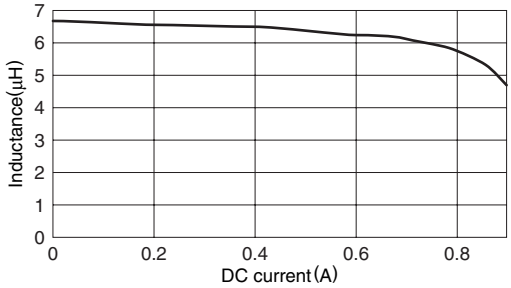
VLF3012ST-3R3M1R1



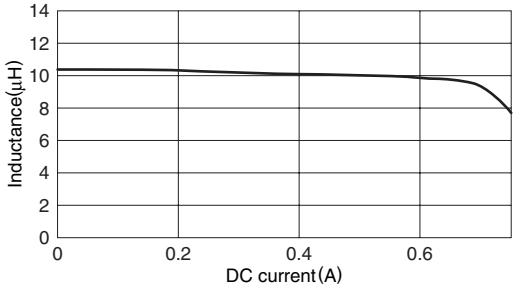
VLF3012ST-4R7MR91



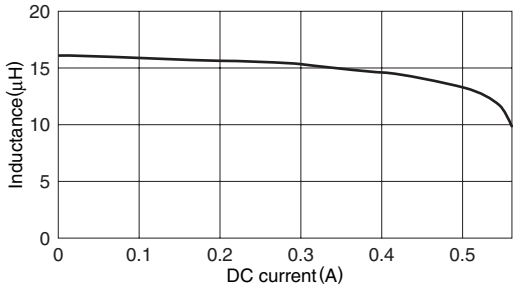
VLF3012ST-6R8MR78



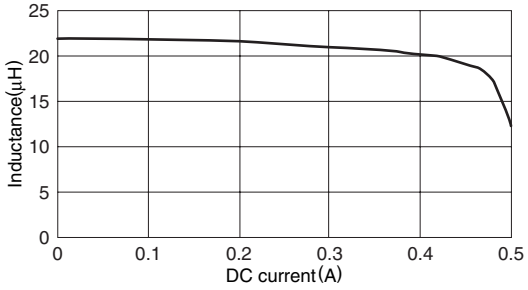
VLF3012ST-100MR59



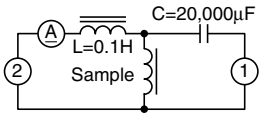
VLF3012ST-150MR49



VLF3012ST-220MR43



TEST CIRCUIT



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

TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF3014A

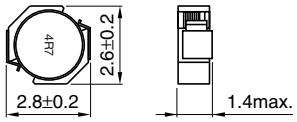
FEATURES

- 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 real package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

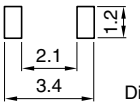
Power souce inductor for mobile devices such as mobile phones, HDDs, and DSCs

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

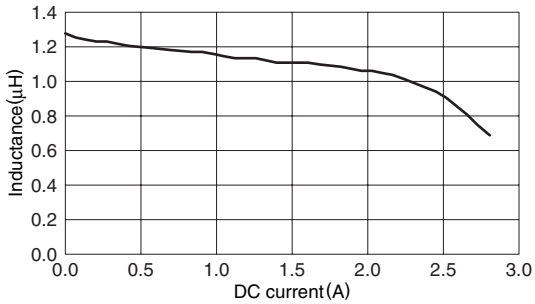
Part No.	Inductance [at 1/2 Idc1]*4 (µH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current(A)		
				max.	typ.	Based on inductance change Idc1 max.*1	Based on temperature rise Idc2 typ.*2	Based on inductance change Idc3 typ.*3
VLF3014AT-1R0N1R8	1	±30	100	0.048	0.042	2.5	1.8	2.5
VLF3014AT-2R2M1R2	2.2	±20	100	0.1	0.091	1.7	1.2	1.6
VLF3014AT-3R3M1R0	3.3	±20	100	0.15	0.13	1.3	1	1.1
VLF3014AT-4R7MR90	4.7	±20	100	0.2	0.17	1.2	0.9	0.8
VLF3014AT-6R8MR72	6.8	±20	100	0.31	0.27	1	0.72	0.78
VLF3014AT-100MR59	10	±20	100	0.46	0.4	0.8	0.59	0.65
VLF3014AT-220MR37	22	±20	100	1.20	1	0.52	0.37	0.43

*1 Rated current based on inductance variation: Current when inductance decreases by 30% of the initial value due to direct current superimposed characteristics
*2 Rated current based on increasing product temperature: Current when temperature of the product reaches +40°C
*3 Rated current based on inductance variation: Current when inductance decreases by 10% of the initial value due to direct current superimposed characteristics
*4 Inductance is at 1/2 Idc1 power distribution. The L vaule at 0A is higher than the guaranteed performance.
- Operating temperature range: –40 to +105°C (Including self-temperature rise)

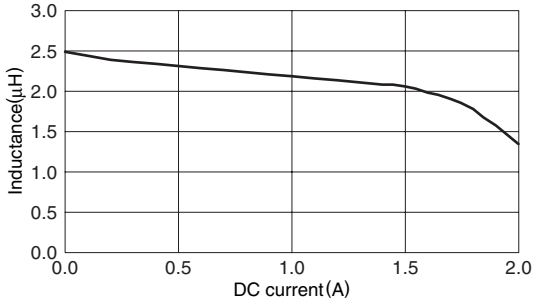
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF3014AT-1R0N1R8



VLF3014AT-2R2M1R2

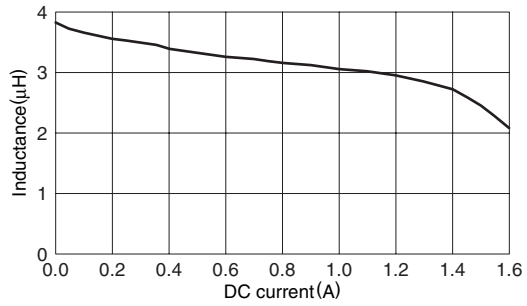


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

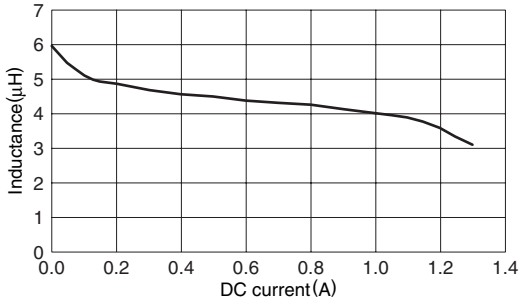
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

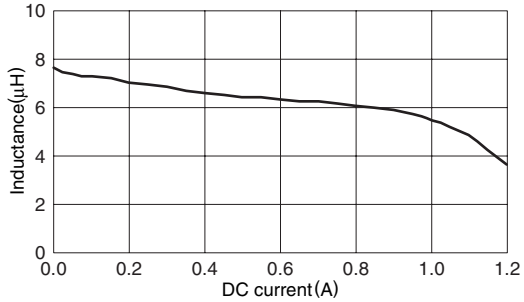
VLF3014AT-3R3M1R0



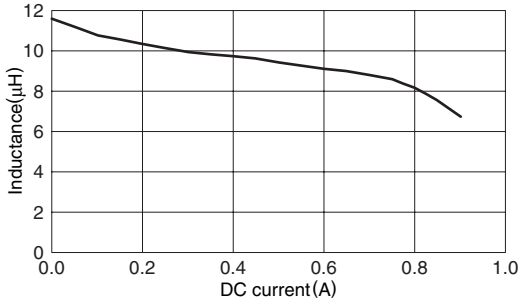
VLF3014AT-4R7MR90



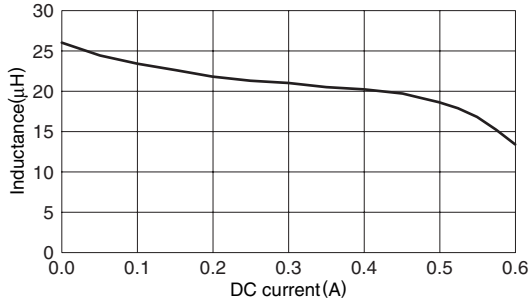
VLF3014AT-6R8MR72



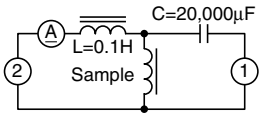
VLF3014AT-100MR59



VLF3014AT-220MR37



TEST CIRCUIT



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

TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF4012A

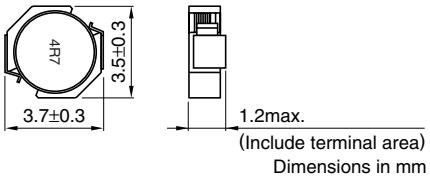
FEATURES

- 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 real package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

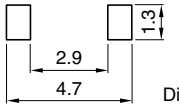
Power souce inductor for mobile devices such as mobile phones, HDDs, and DSCs

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance [at 1/2 Idc1]*2 (μH)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance(Ω)		Rated current*1(A)	
				max.	typ.	Based on inductance change Idc1 max.	Based on temperature 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.

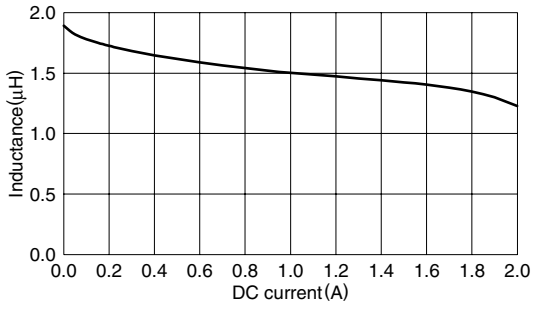
*2 Inductance is at 1/2 Idc1 power distribution. The L vaule at 0A is higher than the guaranteed performance.

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

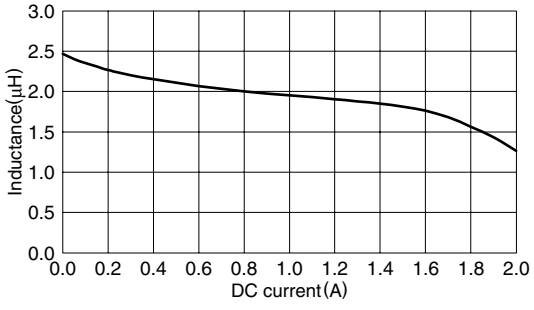
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF4012AT-1R5M1R6



VLF4012AT-2R2M1R5

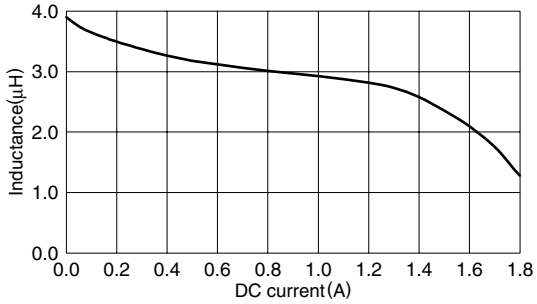


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

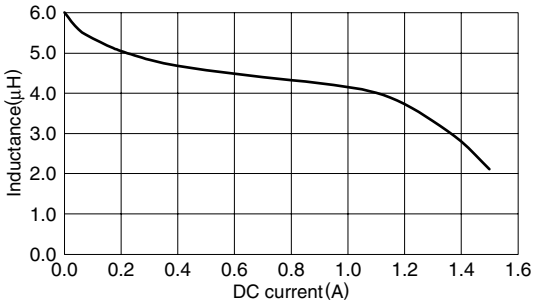
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

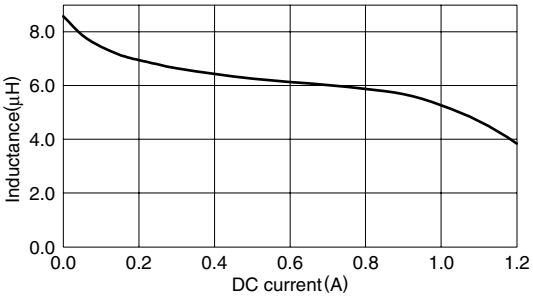
VLF4012AT-3R3M1R3



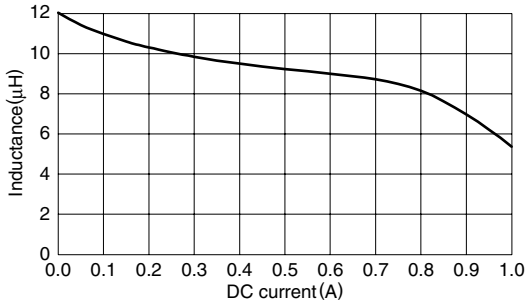
VLF4012AT-4R7M1R1



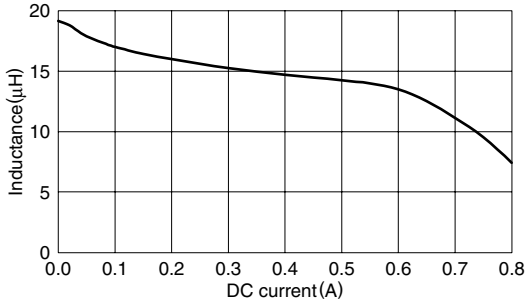
VLF4012AT-6R8MR96



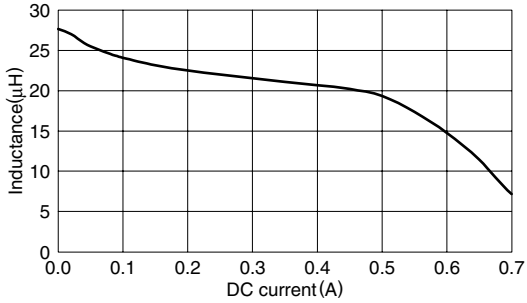
VLF4012AT-100MR79



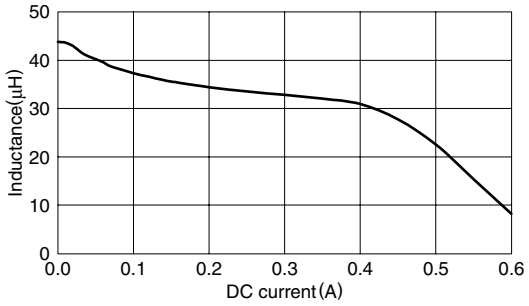
VLF4012AT-150MR63



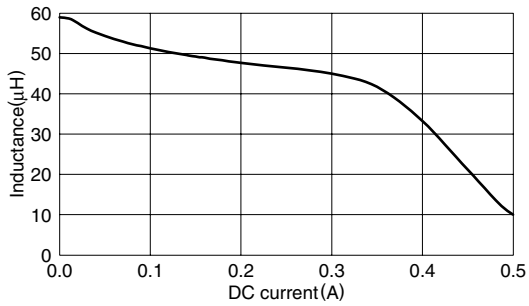
VLF4012AT-220MR51



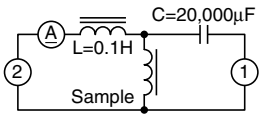
VLF4012AT-330MR39



VLF4012AT-470MR30



TEST CIRCUIT



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

TDK

SMD Inductors(Coils)
For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

VLF Series VLF4012S

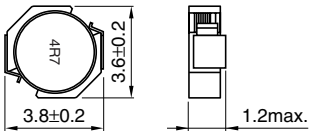
FEATURES

- Miniature size
  Mount area: 3.6×3.8mm
  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 real package.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

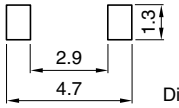
Power souce inductor for mobile devices such as mobile phones, HDDs, and DSCs

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLF4012ST-1R0N1R9	1	±30	1	0.054	0.045	2.7	1.9
VLF4012ST-2R2M1R3	2.2	±20	1	0.12	0.097	1.7	1.3
VLF4012ST-3R3M1R1	3.3	±20	1	0.16	0.13	1.5	1.1
VLF4012ST-4R7M1R0	4.7	±20	1	0.19	0.16	1.4	1
VLF4012ST-6R8MR80	6.8	±20	1	0.32	0.27	1	0.8
VLF4012ST-100MR65	10	±20	1	0.49	0.41	0.9	0.65

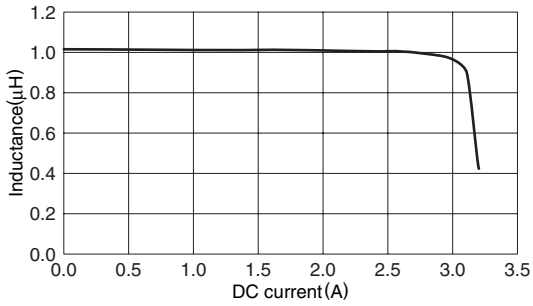
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

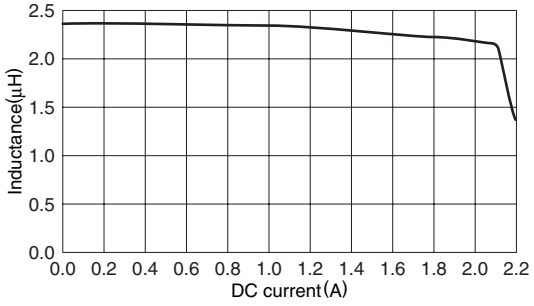
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLF4012ST-1R0N1R9



VLF4012ST-2R2M1R3

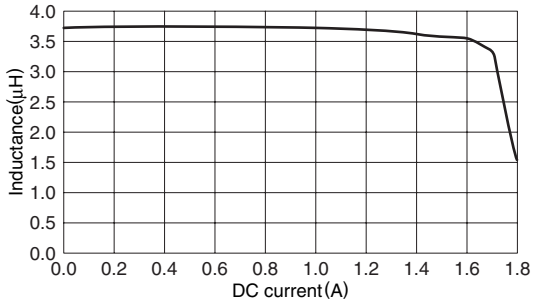


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

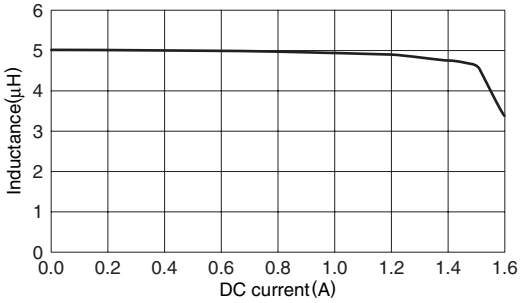
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

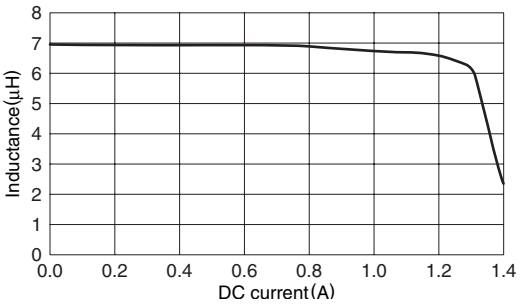
VLF4012ST-3R3M1R1



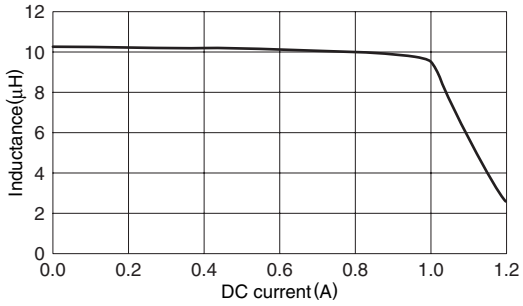
VLF4012ST-4R7M1R0



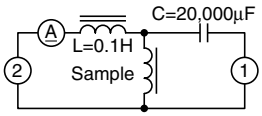
VLF4012ST-6R8MR80



VLF4012ST-100MR65



TEST CIRCUIT



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