Inductors for Power Circuits

Wound/STD • magnetic shielded

VLF series

Type:

VLF252010MT (2.5x2.0x1.0 mm)
VLF252012MT (2.5x2.0x1.2 mm)
VLF252015MT (2.5x2.0x1.5 mm)
VLF302510MT (3.0x2.5x1.0 mm)
VLF302512MT (3.0x2.5x1.2 mm)
VLF302515MT (3.0x2.5x1.5 mm)
VLF403210MT (4.0x3.2x1.0 mm)
VLF403212MT (4.0x3.2x1.2 mm)
VLF403215MT (4.0x3.2x1.5 mm)
VLF504010MT (5.0x4.0x1.0 mm)
VLF504012MT (5.0x4.0x1.2 mm)
VLF504015MT (5.0x4.0x1.5 mm)

Issue date: October 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.

TDK

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF252010MT

With the VLF252010MT 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.

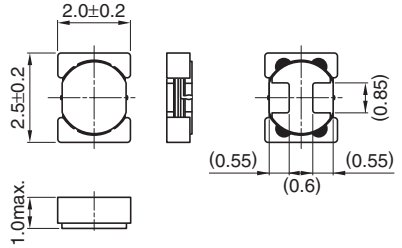
FEATURES

- Miniature size
  Mount area: 2.5×2.0mm
  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.
- 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.

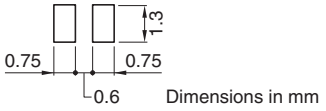
SHAPES AND DIMENSIONS



Weight: 0.017g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	252010M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

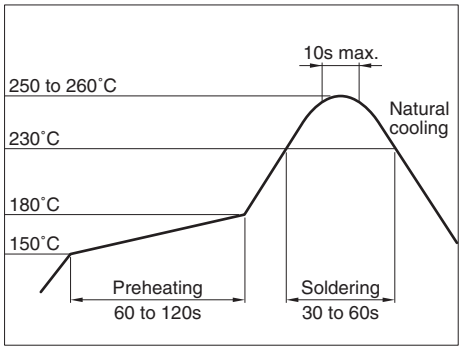
PACKAGING STYLE AND QUANTITIES

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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF252010MT-R47N	0.47	±30	1.0	0.029	0.024	1.84	2.04	3.35
VLF252010MT-R68N	0.68	±30	1.0	0.043	0.036	1.53	1.70	2.70
VLF252010MT-1R0N	1.0	±30	1.0	0.059	0.049	1.27	1.41	2.25
VLF252010MT-1R5N	1.5	±30	1.0	0.090	0.075	0.99	1.10	1.83
VLF252010MT-2R2M	2.2	±20	1.0	0.12	0.097	0.83	0.92	1.47
VLF252010MT-3R3M	3.3	±20	1.0	0.19	0.16	0.68	0.75	1.15
VLF252010MT-4R7M	4.7	±20	1.0	0.30	0.25	0.57	0.64	0.95
VLF252010MT-6R8M	6.8	±20	1.0	0.36	0.30	0.47	0.53	0.85
VLF252010MT-100M	10.0	±20	1.0	0.59	0.49	0.39	0.44	0.66
VLF252010MT-150M	15.0	±20	1.0	0.87	0.73	0.31	0.34	0.53
VLF252010MT-220M	22.0	±20	1.0	1.26	1.05	0.26	0.29	0.45

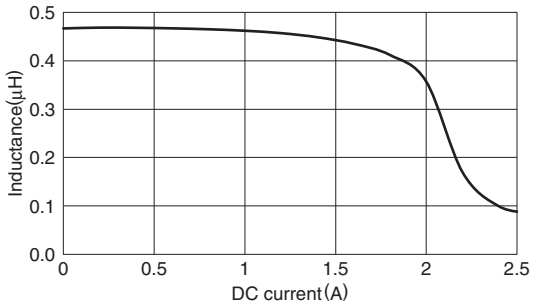
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

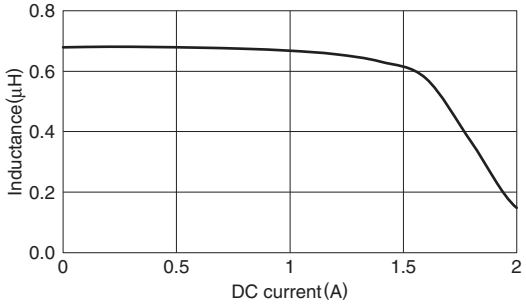
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

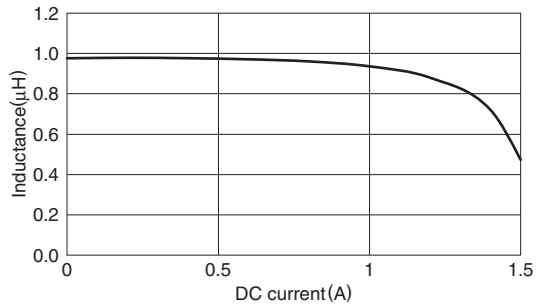
VLF252010MT-R47N



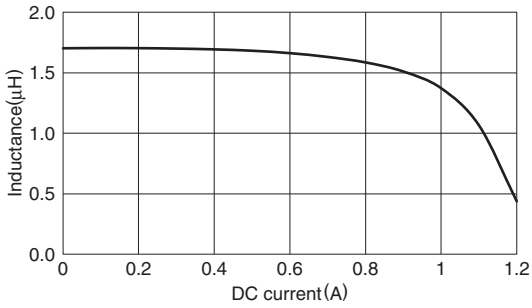
VLF252010MT-R68N



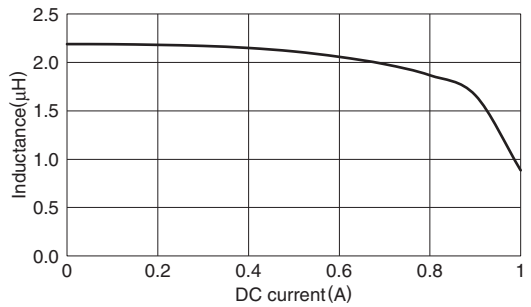
VLF252010MT-1R0N



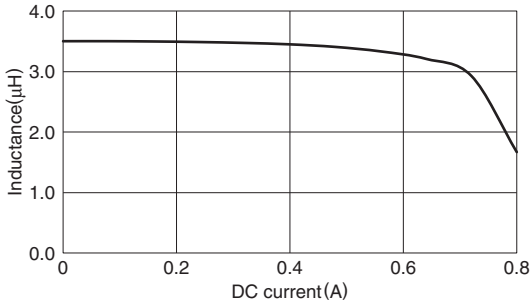
VLF252010MT-1R5N



VLF252010MT-2R2M



VLF252010MT-3R3M



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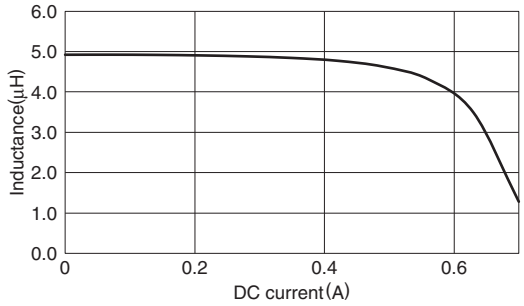
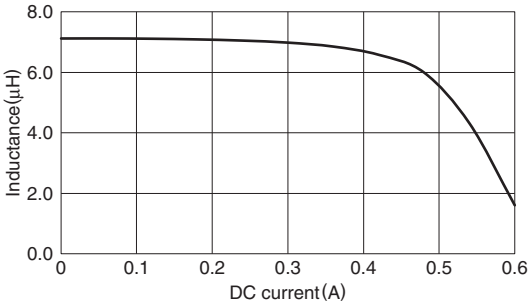
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

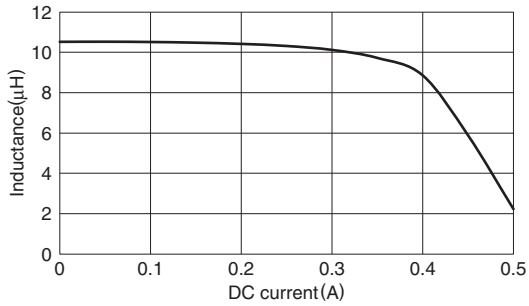
VLF252010MT-4R7M



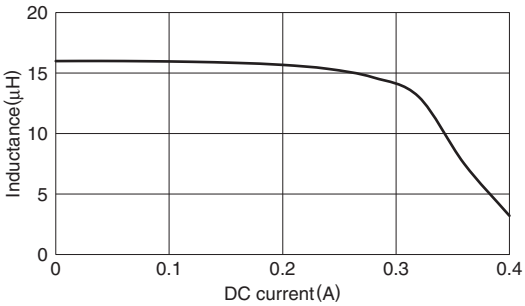
VLF252010MT-6R8M



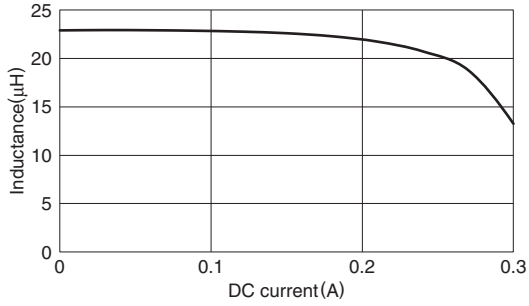
VLF252010MT-100M



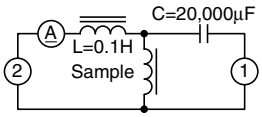
VLF252010MT-150M



VLF252010MT-220M



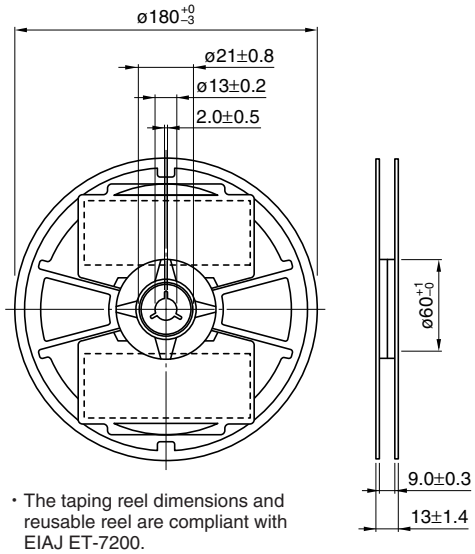
TEST CIRCUIT



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

PACKAGING STYLES

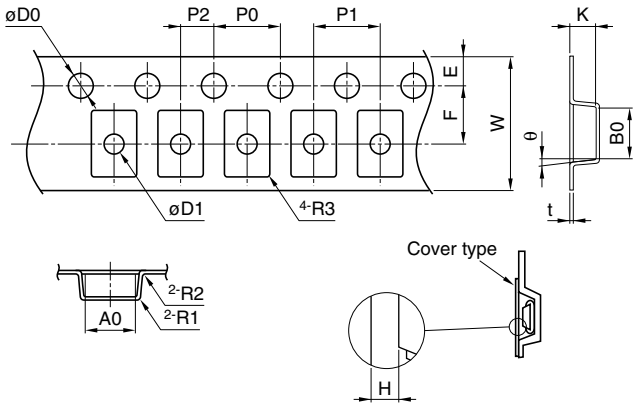
REEL DIMENSIONS



・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
2.3typ.	2.8typ.	8.00±0.2	3.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	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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Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF-MT Series VLF252012MT

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FEATURES

- Miniature size
  Mount area: 2.5×2.0mm
  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.
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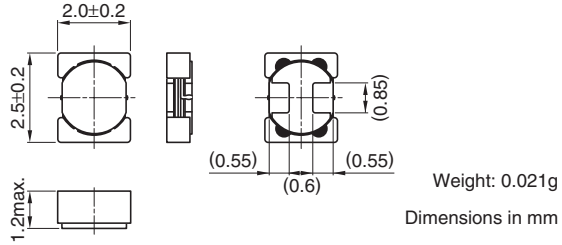
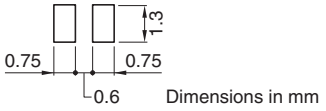
SHAPES AND DIMENSIONS



Weight: 0.021g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

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1R0	1.0µH
100	10µH

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PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
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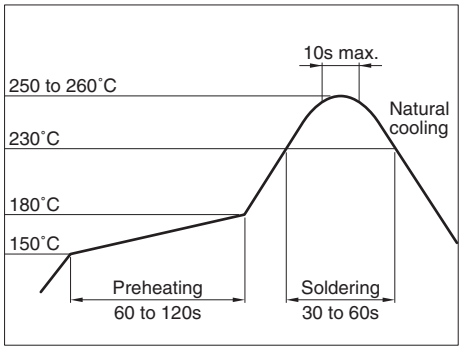
REFLOW SOLDERING



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VLF252012MT-R68N	0.68	±30	1.0	0.038	0.032	1.55	1.72	3.04
VLF252012MT-1R0N	1.0	±30	1.0	0.052	0.043	1.30	1.44	2.47
VLF252012MT-1R5N	1.5	±30	1.0	0.069	0.057	1.10	1.22	2.17
VLF252012MT-2R2M	2.2	±20	1.0	0.10	0.085	0.94	1.04	1.67
VLF252012MT-3R3M	3.3	±20	1.0	0.15	0.13	0.70	0.78	1.39
VLF252012MT-4R7M	4.7	±20	1.0	0.22	0.18	0.62	0.69	1.09
VLF252012MT-6R8M	6.8	±20	1.0	0.34	0.28	0.50	0.56	0.89
VLF252012MT-100M	10.0	±20	1.0	0.41	0.34	0.41	0.46	0.78
VLF252012MT-150M	15.0	±20	1.0	0.68	0.57	0.33	0.37	0.63
VLF252012MT-220M	22.0	±20	1.0	1.00	0.83	0.28	0.31	0.46

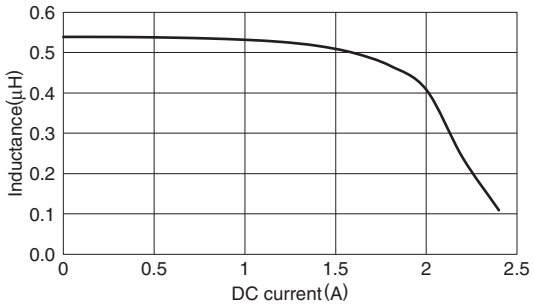
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

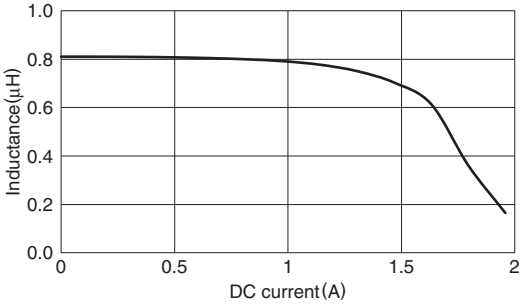
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

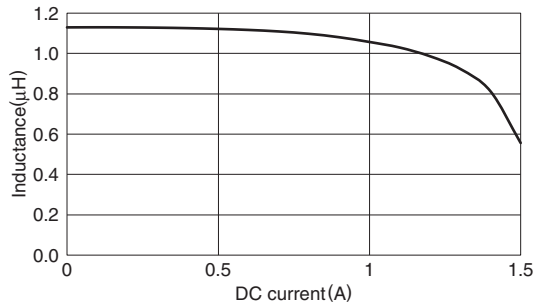
VLF252012MT-R47N



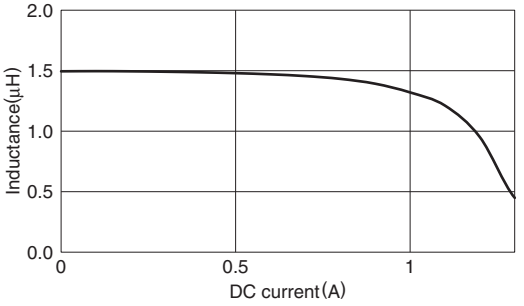
VLF252012MT-R68N



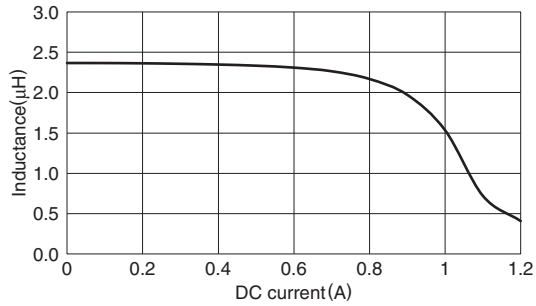
VLF252012MT-1R0N



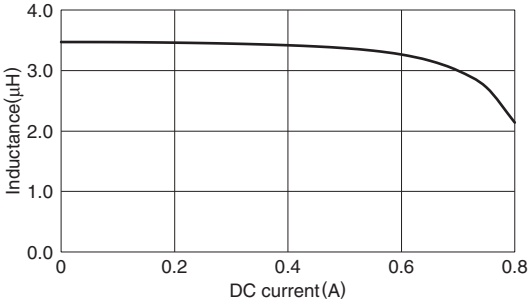
VLF252012MT-1R5N



VLF252012MT-2R2M



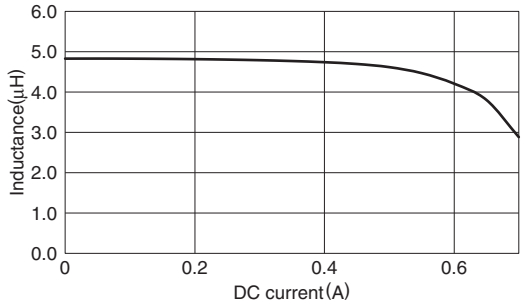
VLF252012MT-3R3M



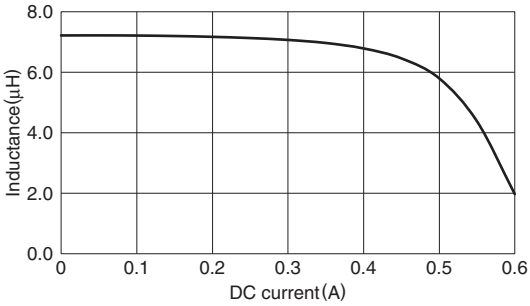
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

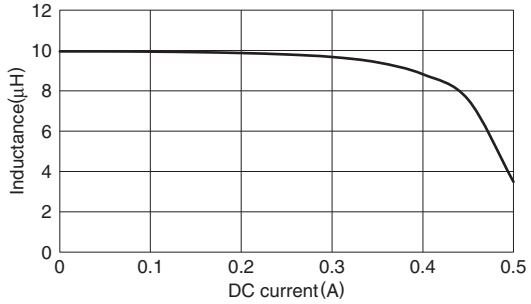
VLF252012MT-4R7M



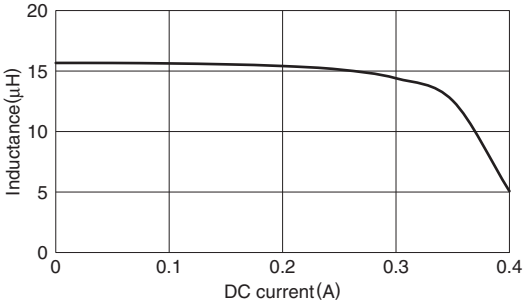
VLF252012MT-6R8M



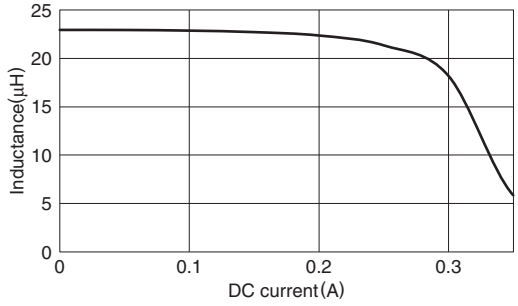
VLF252012MT-100M



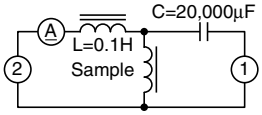
VLF252012MT-150M



VLF252012MT-220M



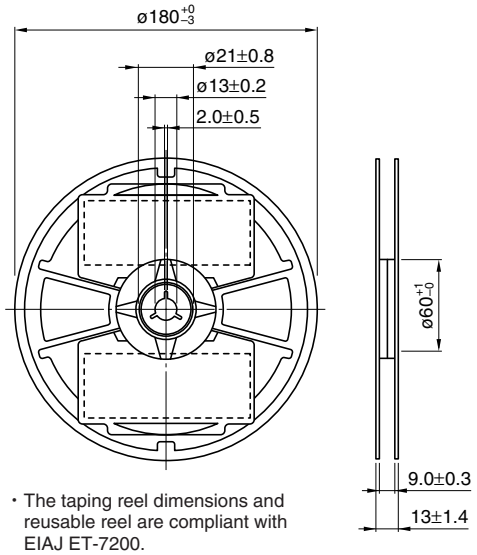
TEST CIRCUIT



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

PACKAGING STYLES

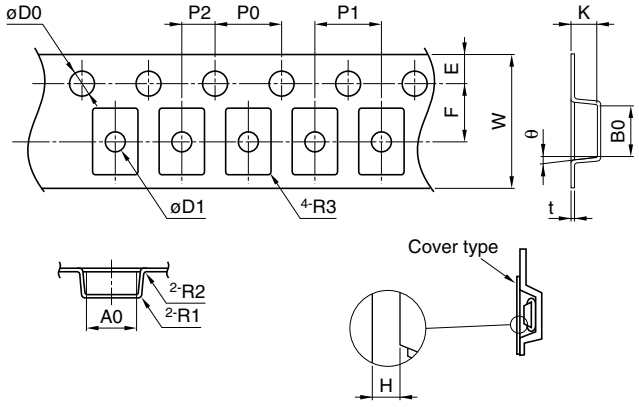
REEL DIMENSIONS



・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
2.3typ.	2.8typ.	8.00±0.2	3.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	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

Conformity to RoHS Directive

VLF Series VLF252015MT

With the VLF252015MT 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.

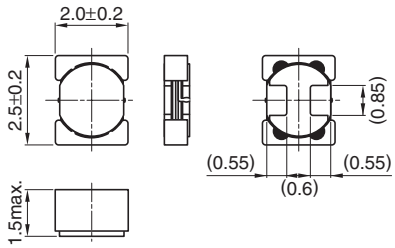
FEATURES

- Miniature size
  Mount area: 2.5×2.0mm
  Low profile: 1.5mm 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.

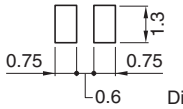
SHAPES AND DIMENSIONS



Weight: 0.027g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	252015M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

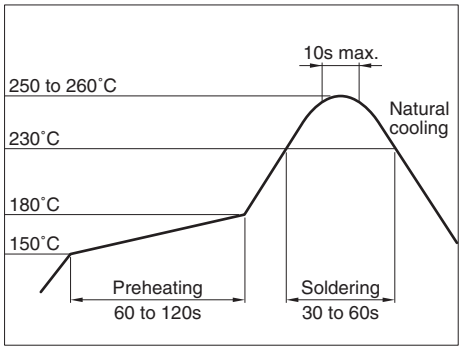
PACKAGING STYLE AND QUANTITIES

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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF252015MT-R47N	0.47	±30	1.0	0.016	0.013	1.85	2.06	4.03
VLF252015MT-R68N	0.68	±30	1.0	0.023	0.019	1.54	1.71	3.38
VLF252015MT-1R0N	1.0	±30	1.0	0.030	0.025	1.34	1.49	3.13
VLF252015MT-1R5N	1.5	±30	1.0	0.039	0.033	1.02	1.13	2.58
VLF252015MT-2R2M	2.2	±20	1.0	0.068	0.056	0.87	0.97	2.10
VLF252015MT-3R3M	3.3	±20	1.0	0.096	0.080	0.71	0.79	1.70
VLF252015MT-4R7M	4.7	±20	1.0	0.12	0.10	0.59	0.66	1.45
VLF252015MT-6R8M	6.8	±20	1.0	0.19	0.16	0.52	0.57	1.14
VLF252015MT-100M	10.0	±20	1.0	0.28	0.24	0.42	0.47	0.94
VLF252015MT-150M	15.0	±20	1.0	0.45	0.37	0.34	0.37	0.77
VLF252015MT-220M	22.0	±20	1.0	0.73	0.61	0.28	0.31	0.58

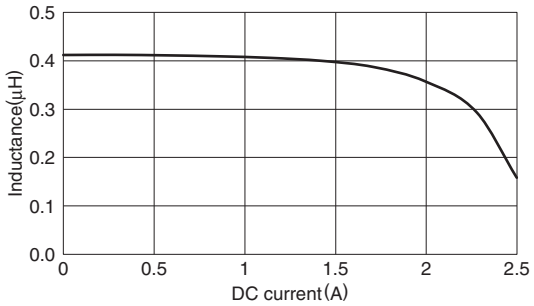
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

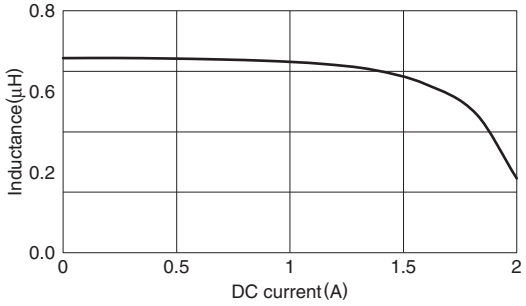
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

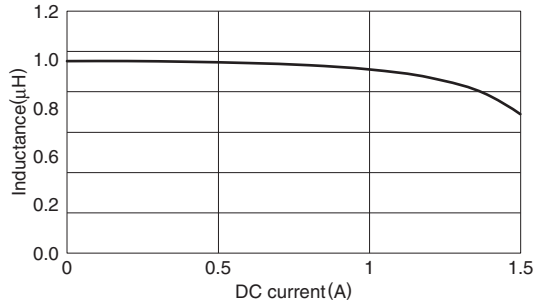
VLF252015MT-R47N



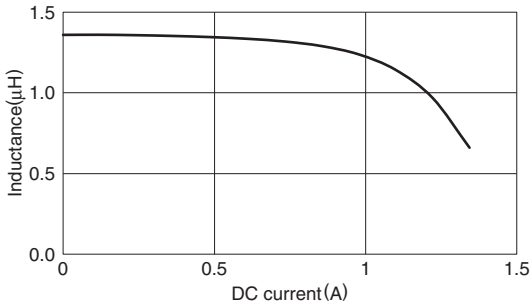
VLF252015MT-R68N



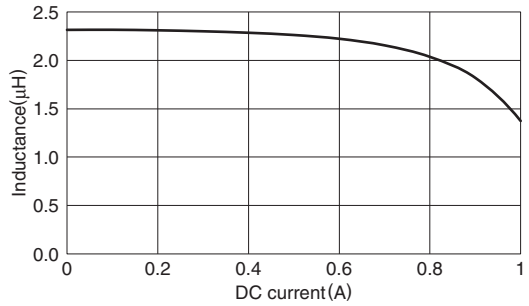
VLF252015MT-1R0N



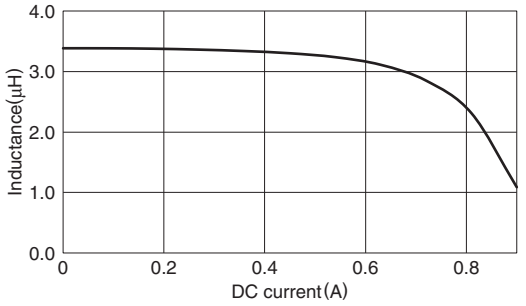
VLF252015MT-1R5N



VLF252015MT-2R2M



VLF252015MT-3R3M

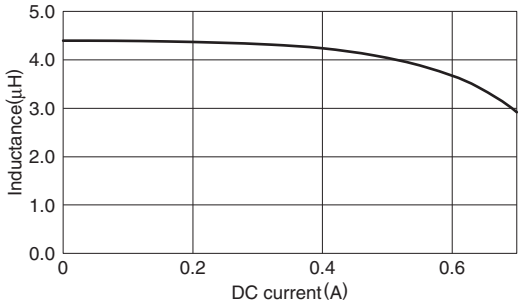


- All specifications are subject to change without notice.

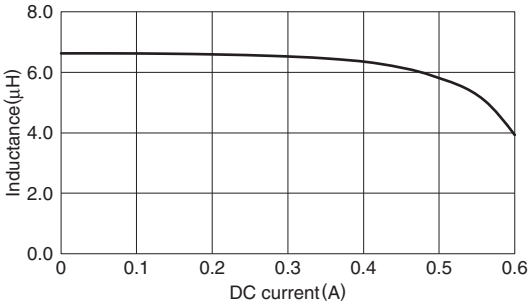
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

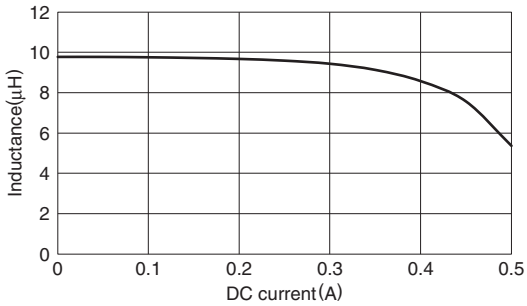
VLF252015MT-4R7M



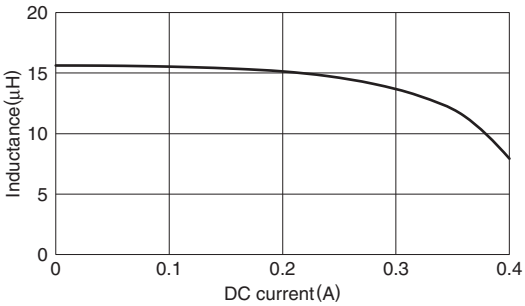
VLF252015MT-6R8M



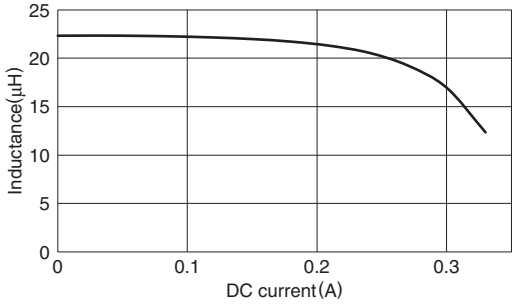
VLF252015MT-100M



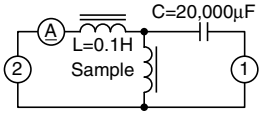
VLF252015MT-150M



VLF252015MT-220M



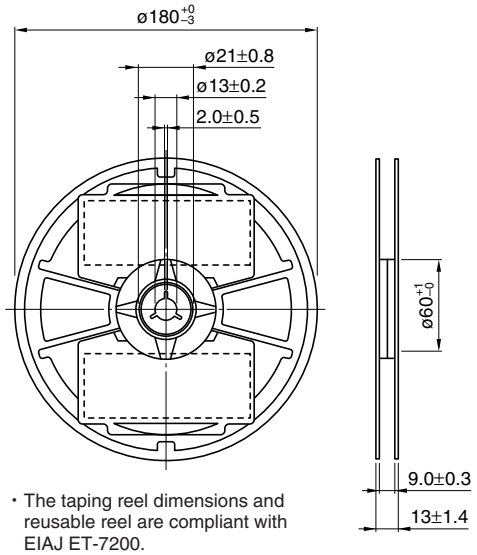
TEST CIRCUIT



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

PACKAGING STYLES

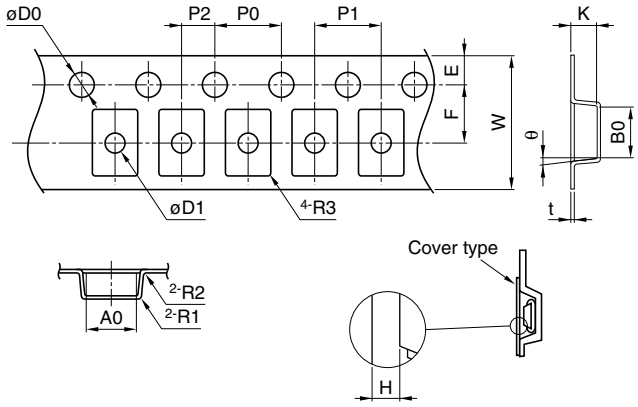
REEL DIMENSIONS



・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
2.3typ.	2.8typ.	8.00±0.2	3.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.65±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF 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.

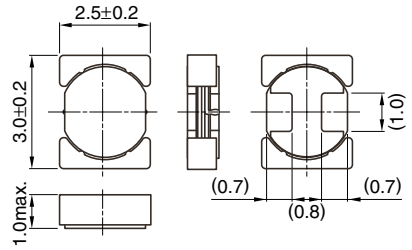
FEATURES

- 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.

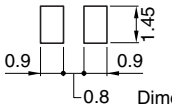
SHAPES AND DIMENSIONS



Weight: 0.026g

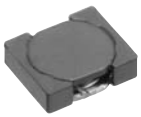
Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

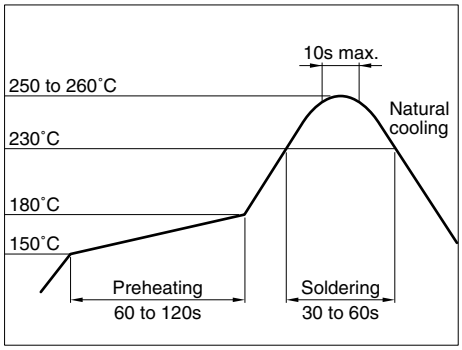
PACKAGING STYLE AND QUANTITIES

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.)

ELECTRICAL CHARACTERISTICS

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

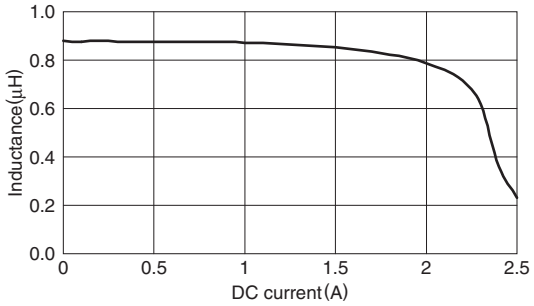
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

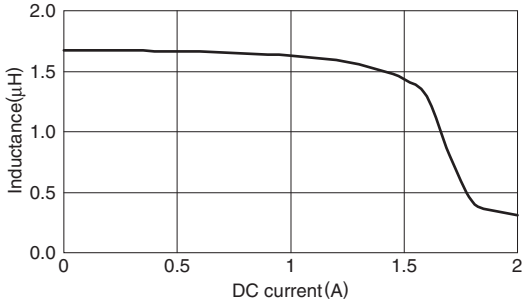
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

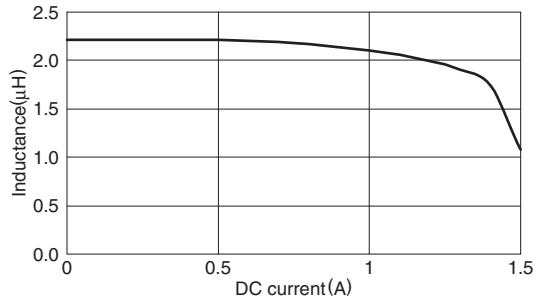
VLF302510MT-1R0N



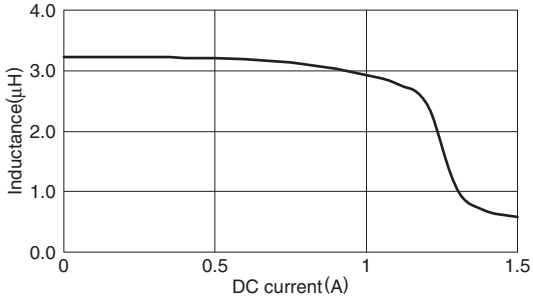
VLF302510MT-1R5N



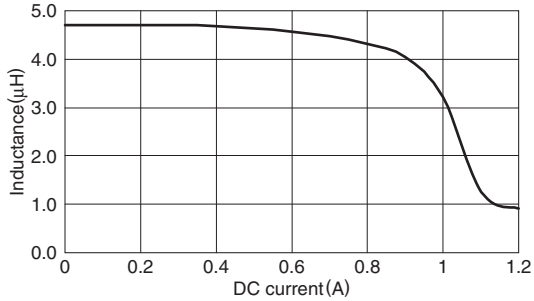
VLF302510MT-2R2M



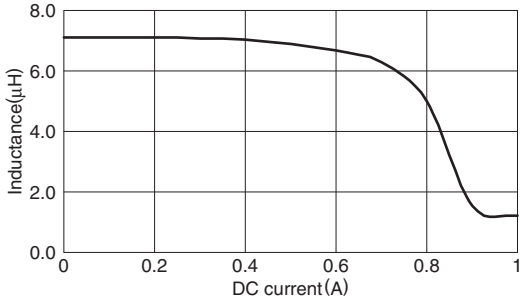
VLF302510MT-3R3M



VLF302510MT-4R7M



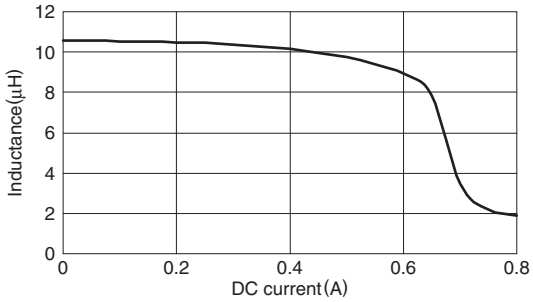
VLF302510MT-6R8M



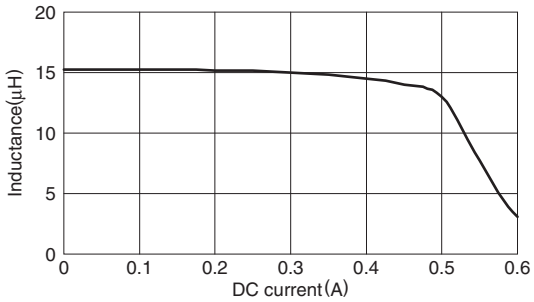
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

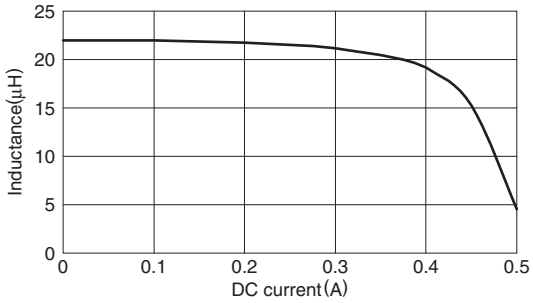
VLF302510MT-100M



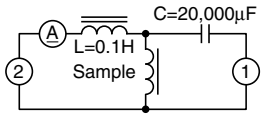
VLF302510MT-150M



VLF302510MT-220M



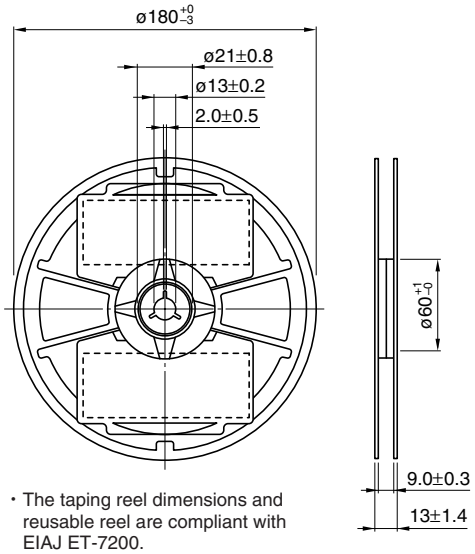
TEST CIRCUIT



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

PACKAGING STYLES

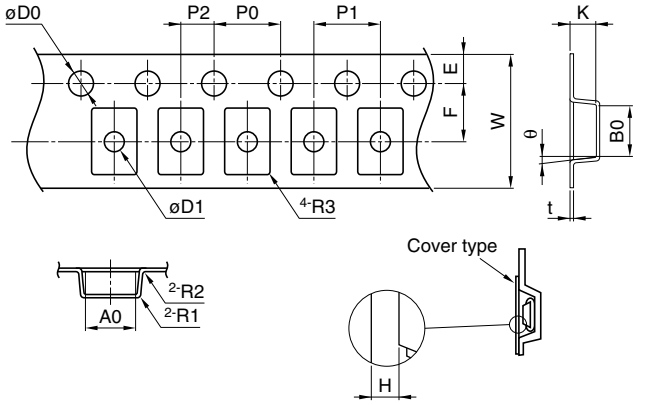
REEL DIMENSIONS



・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	øD0
4.00± 0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.15±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF302512MT

With the VLF302512MT 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.

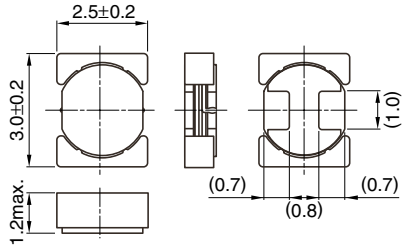
FEATURES

- Miniature size
  Mount area: 3.0×2.5mm
  Low profile: 1.2mm 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.

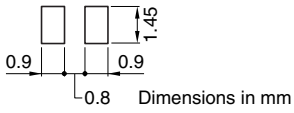
SHAPES AND DIMENSIONS



Weight: 0.033g

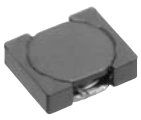
Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

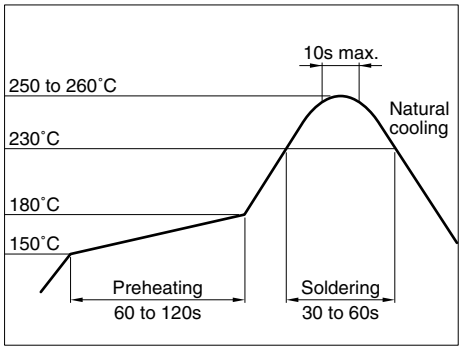
PACKAGING STYLE AND QUANTITIES

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.)

ELECTRICAL CHARACTERISTICS

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

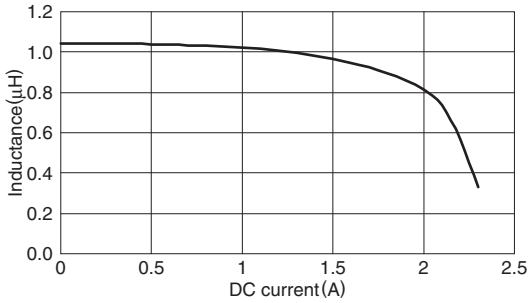
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

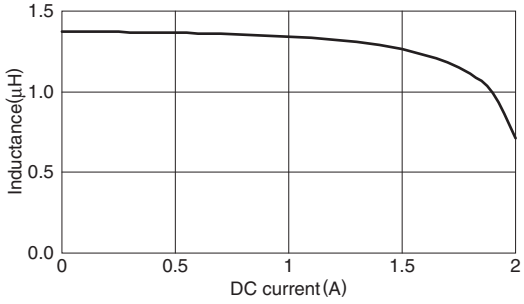
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

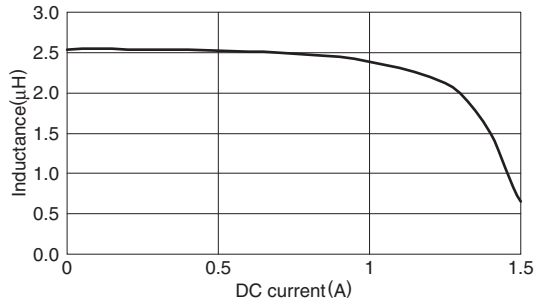
VLF302512MT-1R0N



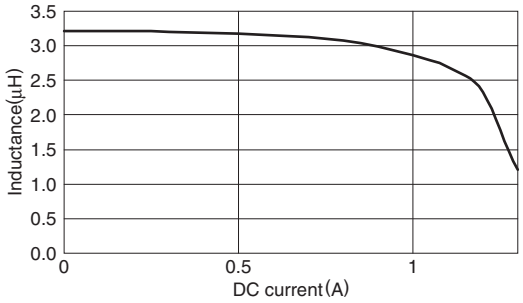
VLF302512MT-1R5N



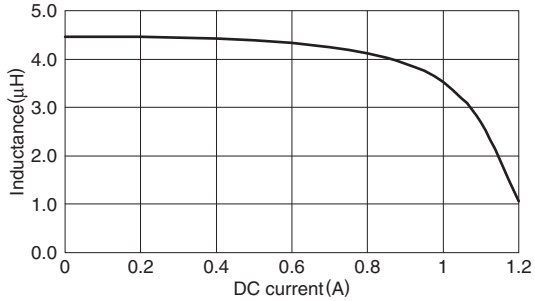
VLF302512MT-2R2M



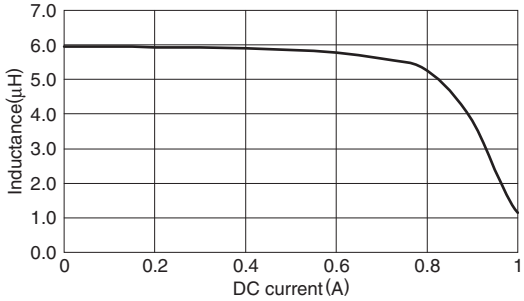
VLF302512MT-3R3M



VLF302512MT-4R7M



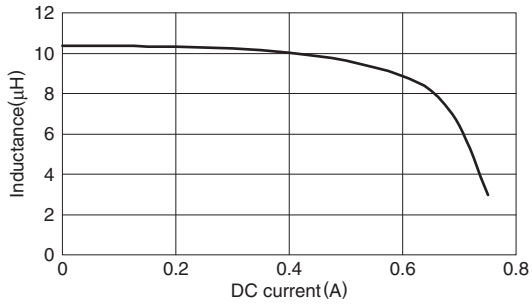
VLF302512MT-6R8M



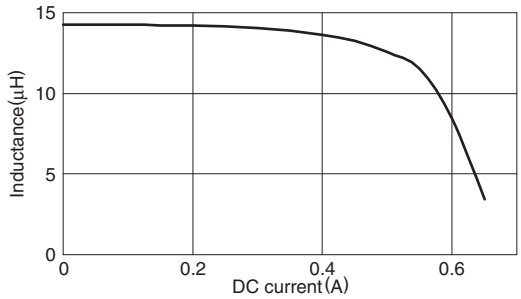
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

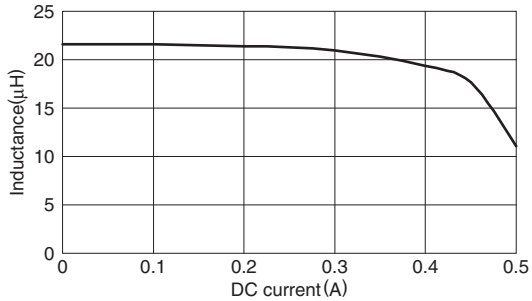
VLF302512MT-100M



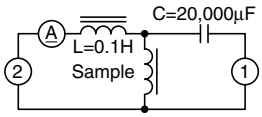
VLF302512MT-150M



VLF302512MT-220M



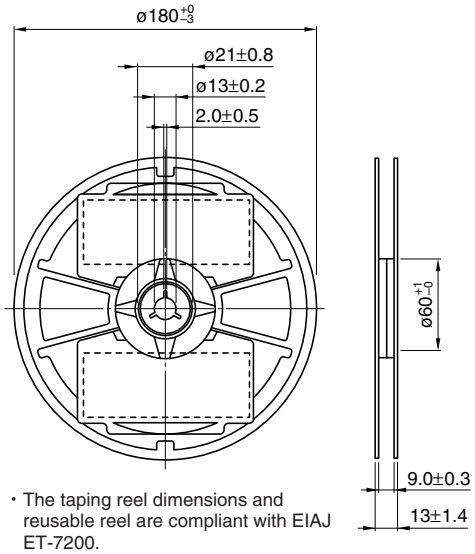
TEST CIRCUIT



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

PACKAGING STYLES

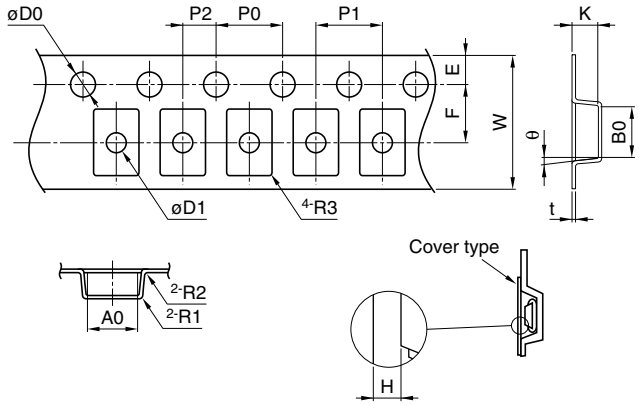
REEL DIMENSIONS



・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	øD0
4.00± 0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	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

Conformity to RoHS Directive

VLF Series VLF302515MT

With the VLF302515MT 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.

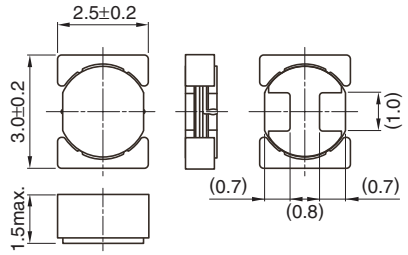
FEATURES

- Miniature size
  Mount area: 3.0×2.5mm
  Low profile: 1.5mm 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.

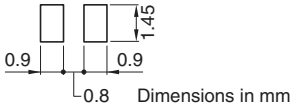
SHAPES AND DIMENSIONS



Weight: 0.041g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	302515M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

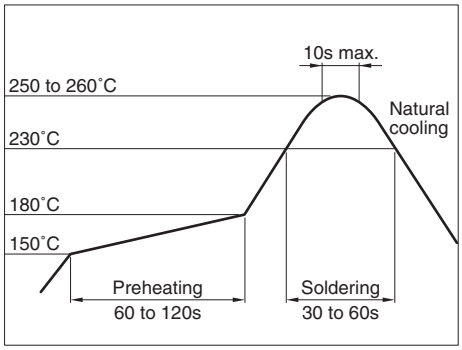
PACKAGING STYLE AND QUANTITIES

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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF302515MT-R47N	0.47	±30	1.0	0.020	0.017	2.88	3.18	4.00
VLF302515MT-1R0N	1.0	±30	1.0	0.030	0.025	1.94	2.15	3.31
VLF302515MT-1R5N	1.5	±30	1.0	0.038	0.032	1.66	1.84	3.14
VLF302515MT-2R2M	2.2	±20	1.0	0.050	0.042	1.41	1.57	2.71
VLF302515MT-3R3M	3.3	±20	1.0	0.072	0.060	1.11	1.23	2.25
VLF302515MT-4R7M	4.7	±20	1.0	0.090	0.075	0.93	1.03	1.95
VLF302515MT-6R8M	6.8	±20	1.0	0.16	0.13	0.77	0.86	1.45
VLF302515MT-100M	10.0	±20	1.0	0.18	0.15	0.64	0.71	1.37
VLF302515MT-150M	15.0	±20	1.0	0.33	0.28	0.50	0.56	0.99
VLF302515MT-220M	22.0	±20	1.0	0.49	0.41	0.41	0.46	0.75

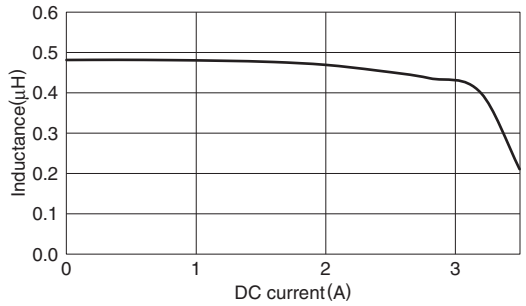
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

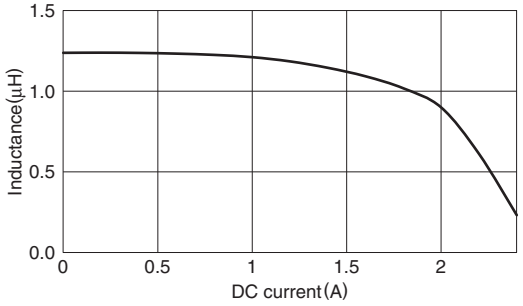
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

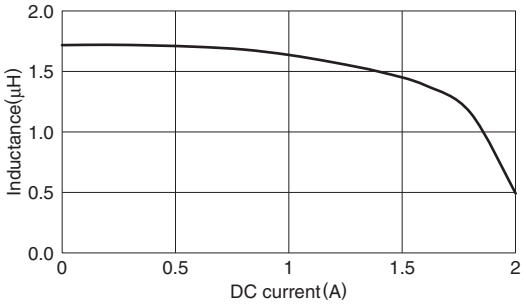
VLF302515MT-R47N



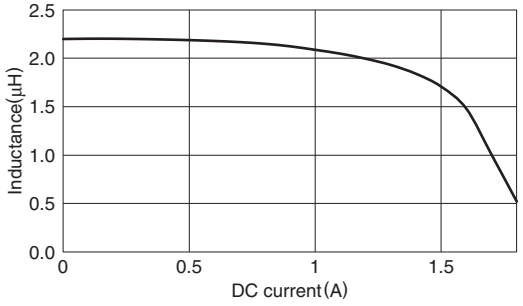
VLF302515MT-1R0N



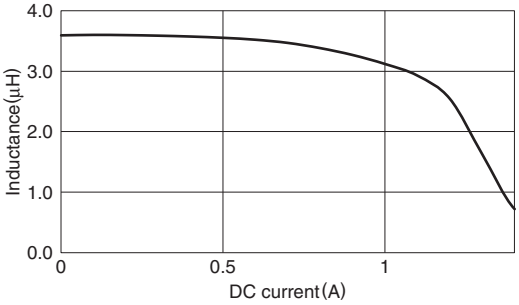
VLF302515MT-1R5N



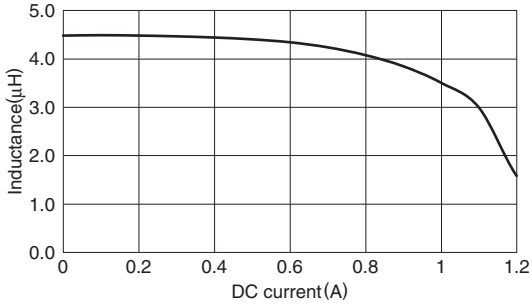
VLF302515MT-2R2M



VLF302515MT-3R3M



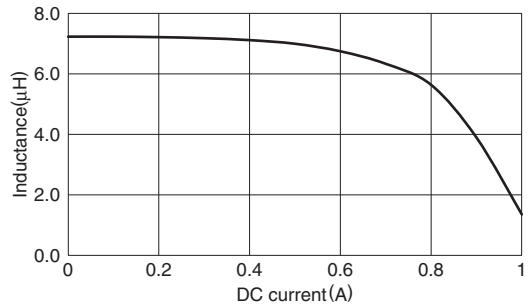
VLF302515MT-4R7M



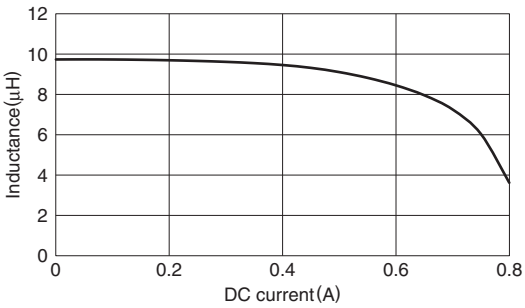
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

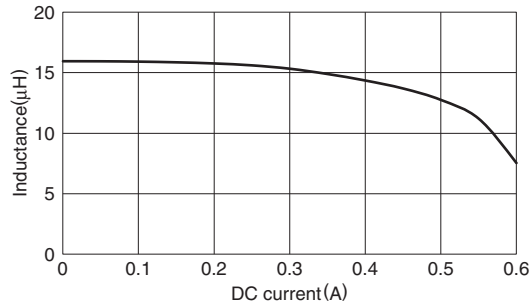
VLF302515MT-6R8M



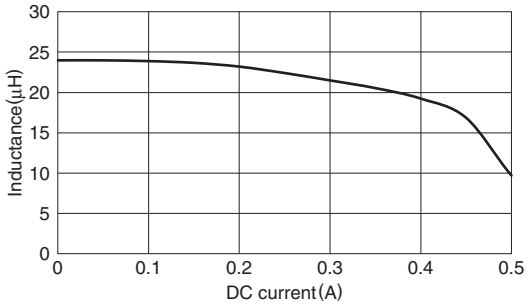
VLF302515MT-100M



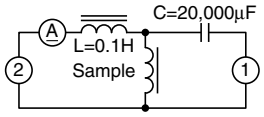
VLF302515MT-150M



VLF302515MT-220M



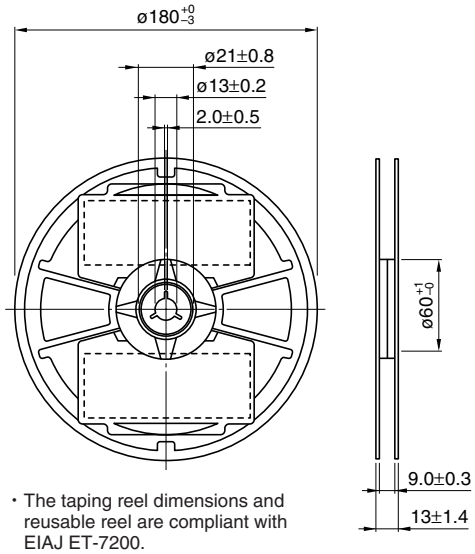
TEST CIRCUIT



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

PACKAGING STYLES

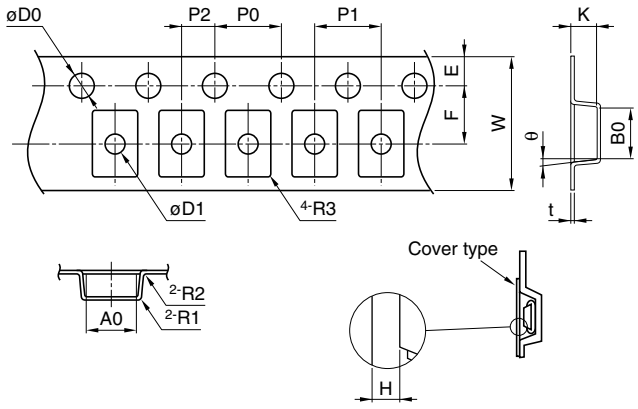
REEL DIMENSIONS



・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	øD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/−0

K	øD1	t	R1 to R3	θ
1.65±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF403210MT

With the VLF403210MT 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.

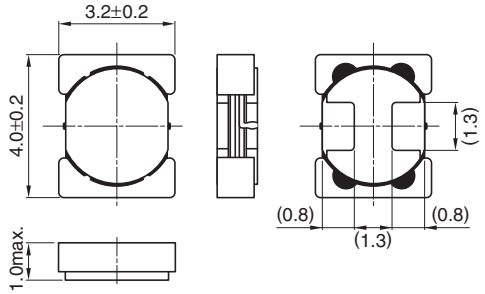
FEATURES

- Miniature size
  Mount area: 4.0×3.2mm
  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.

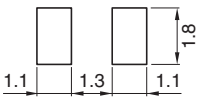
SHAPES AND DIMENSIONS



Weight: 0.048g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	403210M	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)

(4) Inductance value

1R0	1.0µH
100	10µH

(5) Inductance tolerance

M	±20%
N	±30%

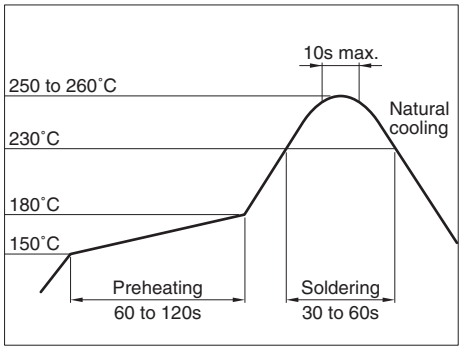
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF403210MT-1R0N	1.0	±30	1.0	0.032	0.026	2.23	2.48	3.44
VLF403210MT-1R5N	1.5	±30	1.0	0.043	0.036	1.85	2.06	2.96
VLF403210MT-2R2M	2.2	±20	1.0	0.066	0.055	1.59	1.77	2.33
VLF403210MT-3R3M	3.3	±20	1.0	0.098	0.082	1.19	1.32	1.95
VLF403210MT-4R7M	4.7	±20	1.0	0.14	0.12	1.09	1.21	1.61
VLF403210MT-6R8M	6.8	±20	1.0	0.22	0.18	0.84	0.93	1.24
VLF403210MT-100M	10.0	±20	1.0	0.31	0.26	0.70	0.78	1.04
VLF403210MT-150M	15.0	±20	1.0	0.49	0.40	0.59	0.66	0.83
VLF403210MT-220M	22.0	±20	1.0	0.72	0.60	0.46	0.51	0.68

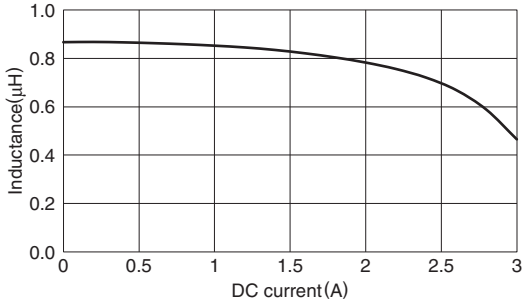
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

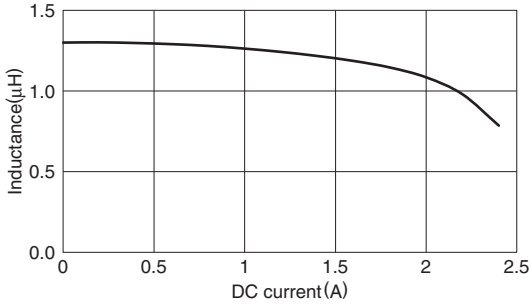
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

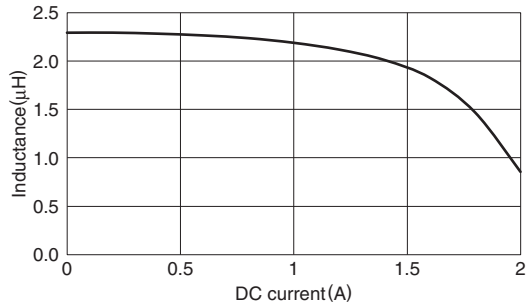
VLF403210MT-1R0N



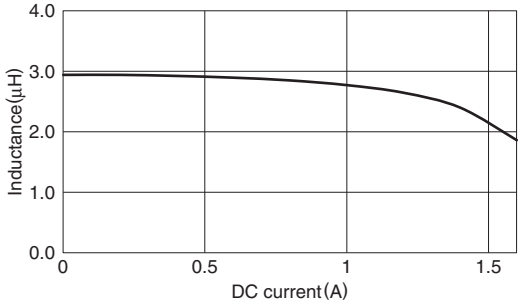
VLF403210MT-1R5N



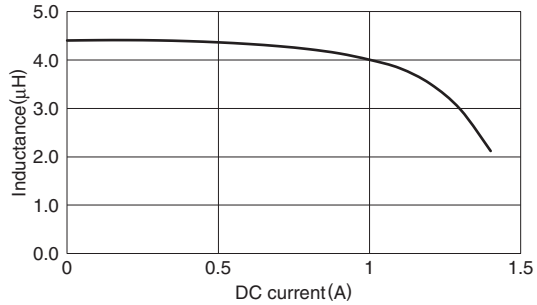
VLF403210MT-2R2M



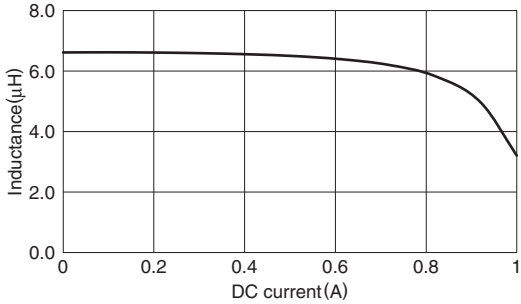
VLF403210MT-3R3M



VLF403210MT-4R7M



VLF403210MT-6R8M

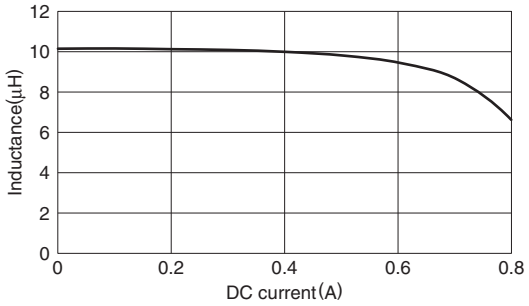


- All specifications are subject to change without notice.

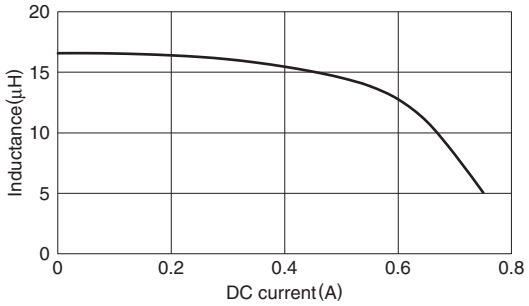
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

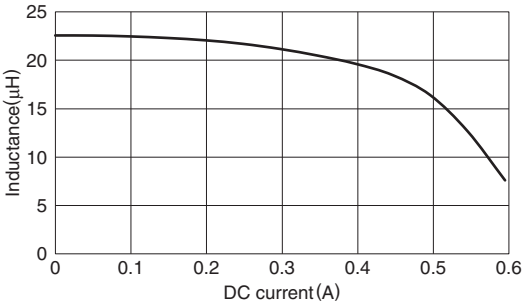
VLF403210MT-100M



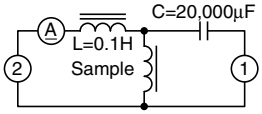
VLF403210MT-150M



VLF403210MT-220M



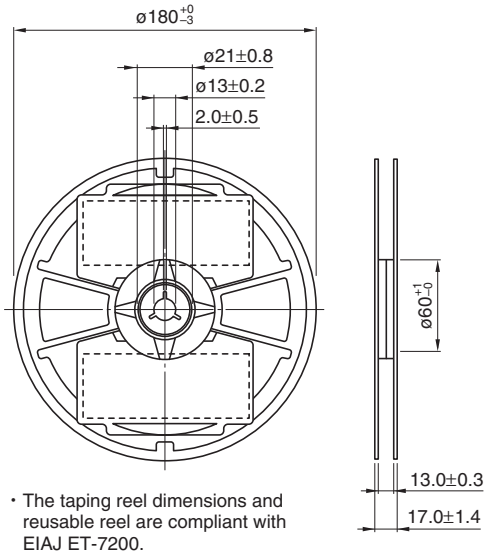
TEST CIRCUIT



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

PACKAGING STYLES

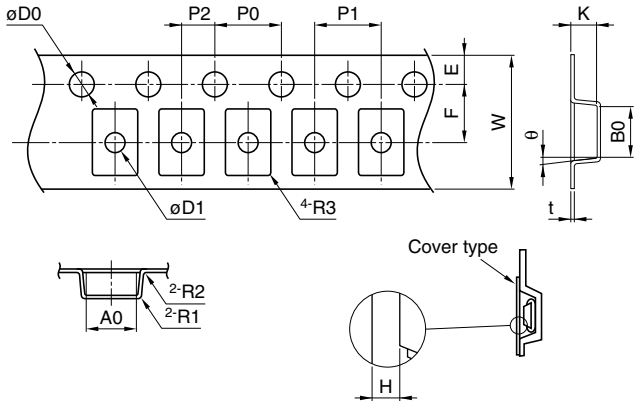
REEL DIMENSIONS



・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
3.65typ.	4.45typ.	12.00±0.2	5.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.15±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF403212MT

With the VLF403212MT 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.

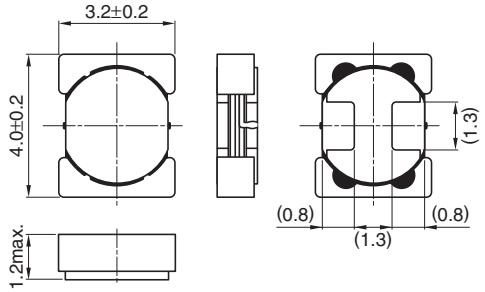
FEATURES

- Miniature size
  Mount area: 4.0×3.2mm
  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.

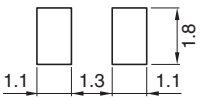
SHAPES AND DIMENSIONS



Weight: 0.059g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	403212M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

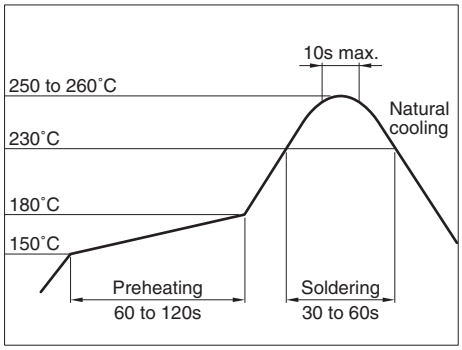
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF403212MT-1R0N	1.0	±30	1.0	0.031	0.026	3.00	3.33	3.62
VLF403212MT-1R5N	1.5	±30	1.0	0.050	0.042	2.41	2.68	2.98
VLF403212MT-2R2M	2.2	±20	1.0	0.065	0.054	2.05	2.28	2.48
VLF403212MT-3R3M	3.3	±20	1.0	0.091	0.076	1.65	1.83	1.91
VLF403212MT-4R7M	4.7	±20	1.0	0.12	0.096	1.40	1.56	1.85
VLF403212MT-6R8M	6.8	±20	1.0	0.18	0.15	1.09	1.22	1.33
VLF403212MT-100M	10.0	±20	1.0	0.28	0.23	0.90	1.00	1.07
VLF403212MT-150M	15.0	±20	1.0	0.42	0.35	0.74	0.82	0.87
VLF403212MT-220M	22.0	±20	1.0	0.71	0.59	0.54	0.60	0.67

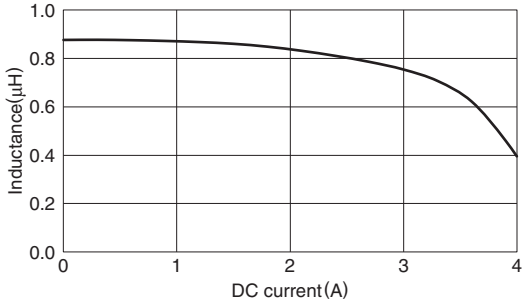
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

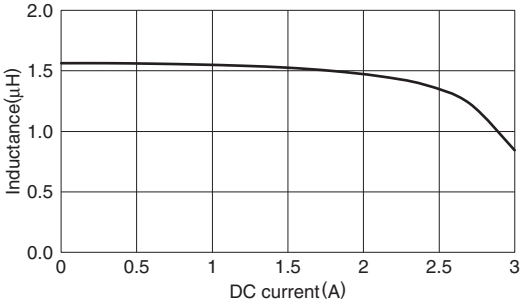
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

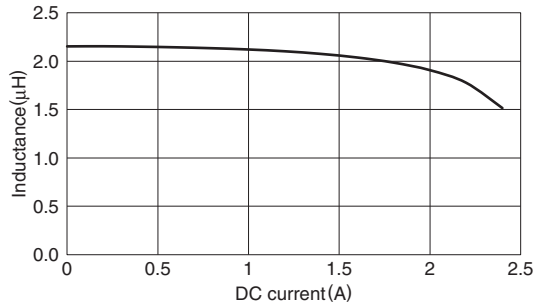
VLF403212MT-1R0N



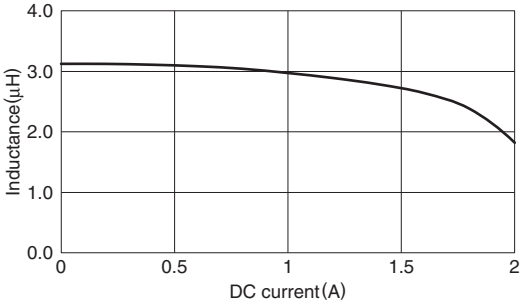
VLF403212MT-1R5N



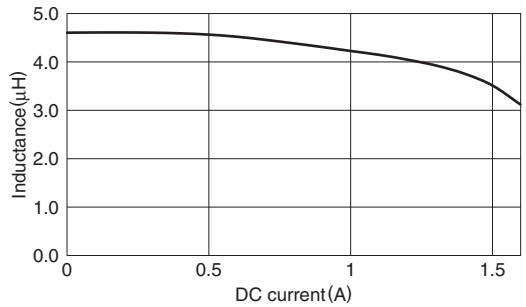
VLF403212MT-2R2M



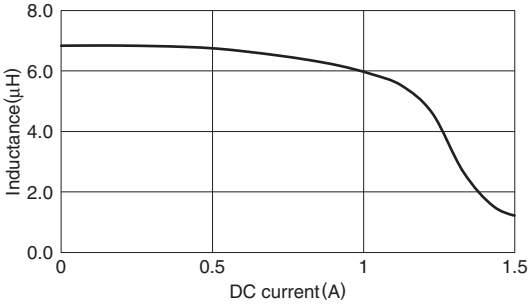
VLF403212MT-3R3M



VLF403212MT-4R7M



VLF403212MT-6R8M

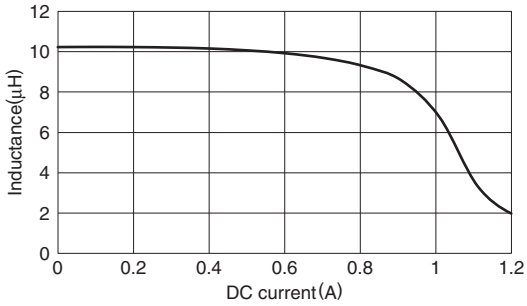


- All specifications are subject to change without notice.

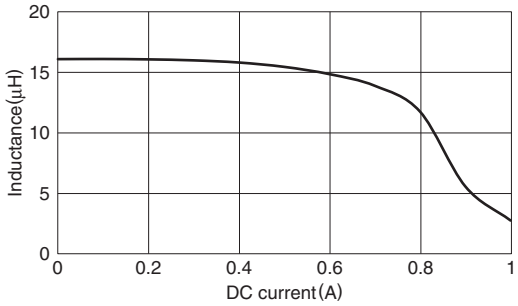
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

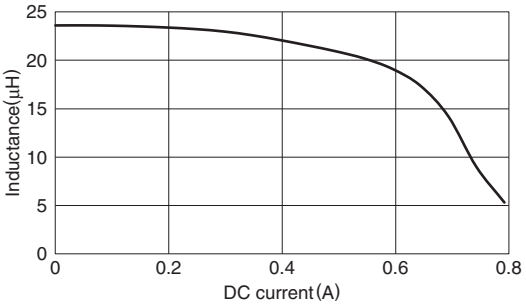
VLF403212MT-100M



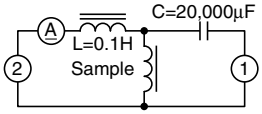
VLF403212MT-150M



VLF403212MT-220M



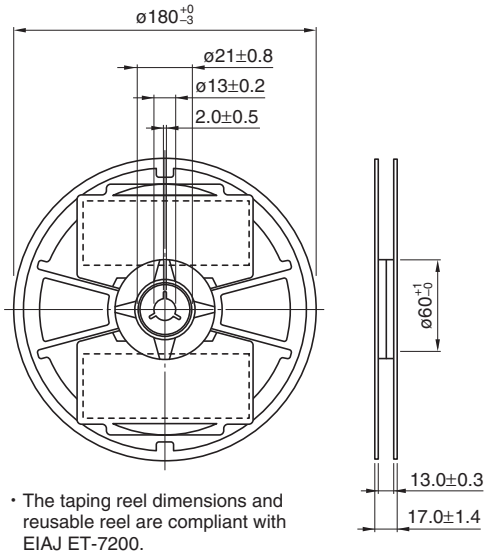
TEST CIRCUIT



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

PACKAGING STYLES

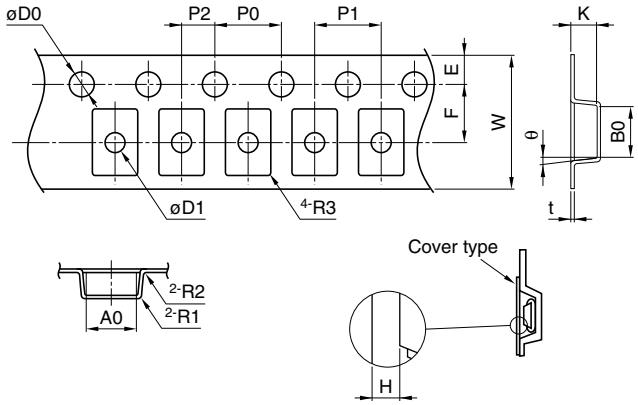
REEL DIMENSIONS



・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
3.65typ.	4.45typ.	12.00±0.2	5.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	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

Conformity to RoHS Directive

VLF Series VLF403215MT

With the VLF403215MT 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.

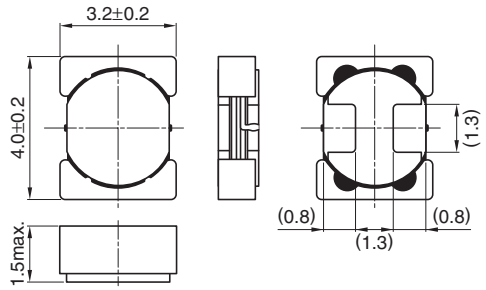
FEATURES

- Miniature size
  Mount area: 4.0×3.2mm
  Low profile: 1.5mm 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.

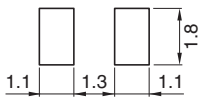
SHAPES AND DIMENSIONS



Weight: 0.072g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	403215M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

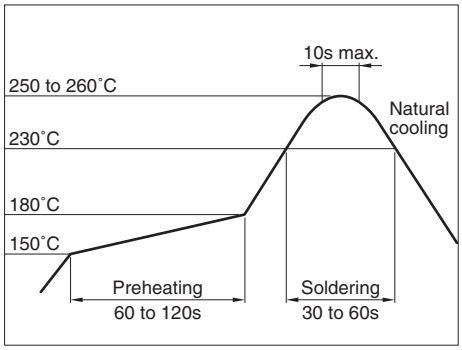
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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



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ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF403215MT-1R0N	1.0	±30	1.0	0.031	0.026	3.01	3.34	3.56
VLF403215MT-1R5N	1.5	±30	1.0	0.036	0.030	2.46	2.73	3.38
VLF403215MT-2R2M	2.2	±20	1.0	0.043	0.036	2.03	2.25	3.14
VLF403215MT-3R3M	3.3	±20	1.0	0.062	0.051	1.65	1.83	2.65
VLF403215MT-4R7M	4.7	±20	1.0	0.087	0.073	1.39	1.54	2.13
VLF403215MT-6R8M	6.8	±20	1.0	0.13	0.11	1.14	1.27	1.68
VLF403215MT-100M	10.0	±20	1.0	0.18	0.15	1.00	1.09	1.44
VLF403215MT-150M	15.0	±20	1.0	0.26	0.22	0.78	0.87	1.19
VLF403215MT-220M	22.0	±20	1.0	0.38	0.32	0.65	0.72	0.95

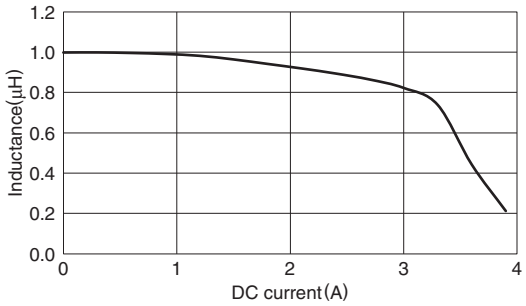
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

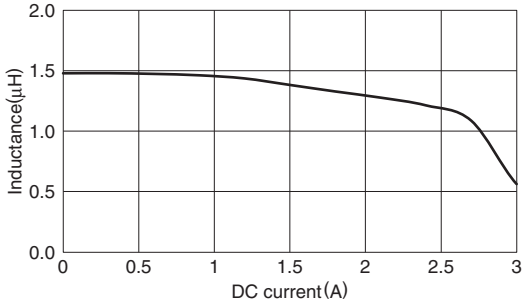
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

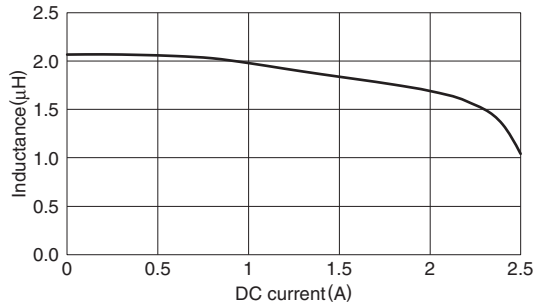
VLF403215MT-1R0N



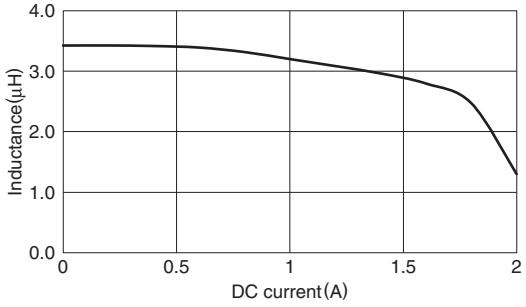
VLF403215MT-1R5N



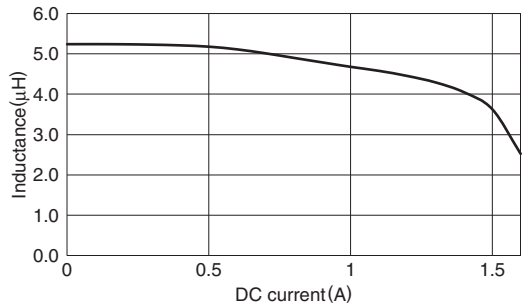
VLF403215MT-2R2M



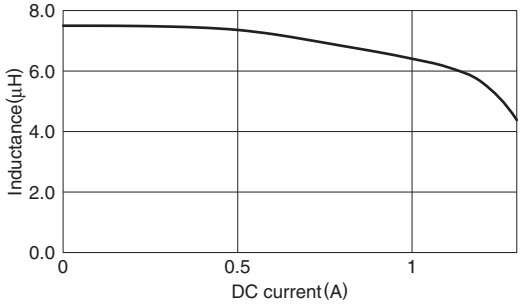
VLF403215MT-3R3M



VLF403215MT-4R7M



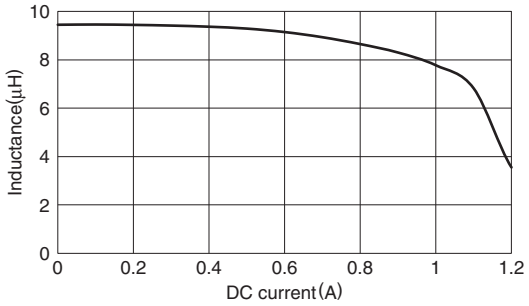
VLF403215MT-6R8M



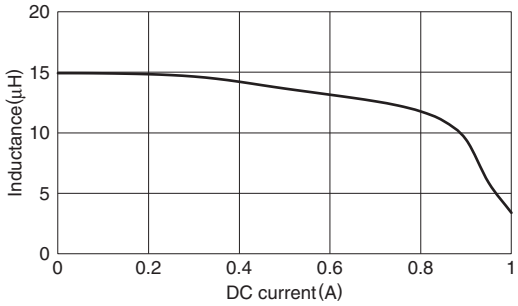
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

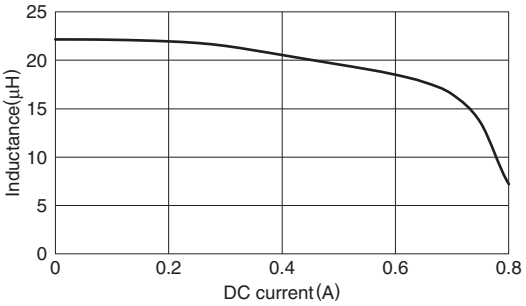
VLF403215MT-100M



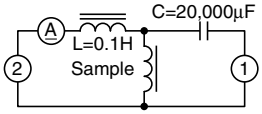
VLF403215MT-150M



VLF403215MT-220M



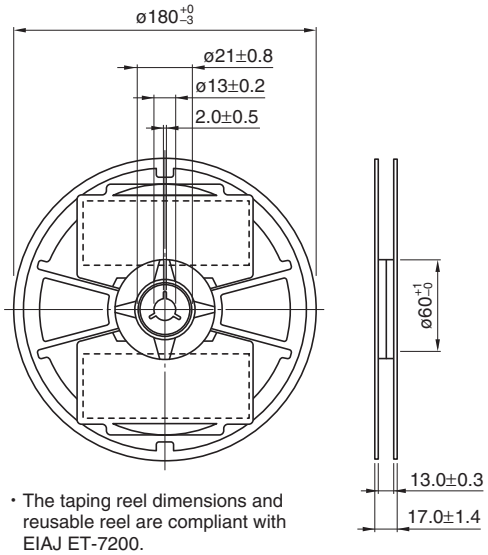
TEST CIRCUIT



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

PACKAGING STYLES

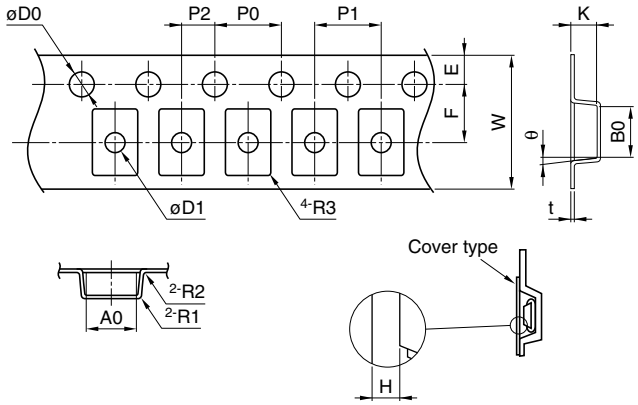
REEL DIMENSIONS



・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
3.65typ.	4.45typ.	12.00±0.2	5.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.65±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF504010MT

With the VLF504010MT 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.

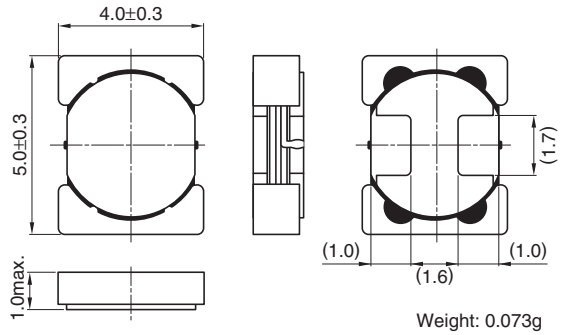
FEATURES

- Miniature size
  Mount area: 5.0×4.0mm
  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.
- 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.

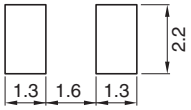
SHAPES AND DIMENSIONS



Weight: 0.073g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	504010M	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)

(4) Inductance value

1R0	1.0µH
100	10µH

(5) Inductance tolerance

M	±20%
N	±30%

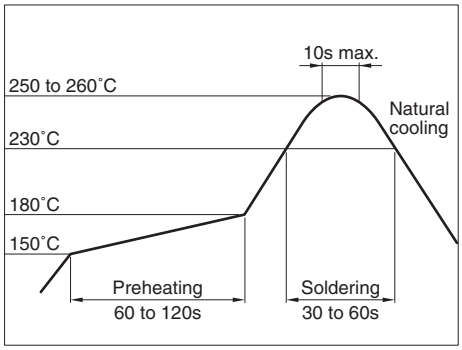
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF504010MT-R68N	0.68	±30	1.0	0.030	0.025	3.40	3.78	3.71
VLF504010MT-1R0N	1.0	±30	1.0	0.037	0.031	2.66	2.95	3.08
VLF504010MT-1R5N	1.5	±30	1.0	0.044	0.037	2.30	2.56	2.86
VLF504010MT-2R2M	2.2	±20	1.0	0.054	0.045	1.92	2.14	2.65
VLF504010MT-3R3M	3.3	±20	1.0	0.091	0.076	1.58	1.75	2.10
VLF504010MT-4R7M	4.7	±20	1.0	0.12	0.10	1.32	1.47	1.77
VLF504010MT-6R8M	6.8	±20	1.0	0.19	0.16	1.09	1.21	1.40
VLF504010MT-100M	10.0	±20	1.0	0.25	0.21	0.90	1.00	1.21
VLF504010MT-150M	15.0	±20	1.0	0.40	0.33	0.74	0.83	0.98
VLF504010MT-220M	22.0	±20	1.0	0.60	0.50	0.61	0.68	0.78

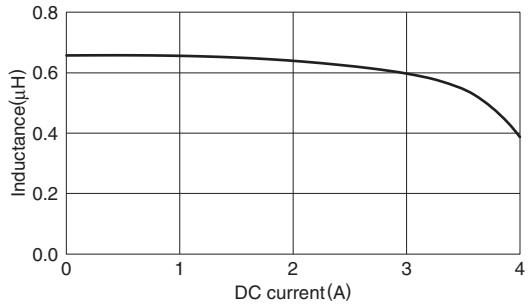
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

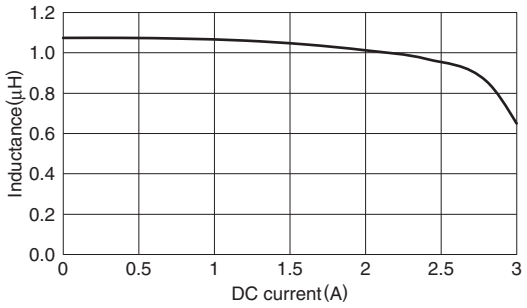
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

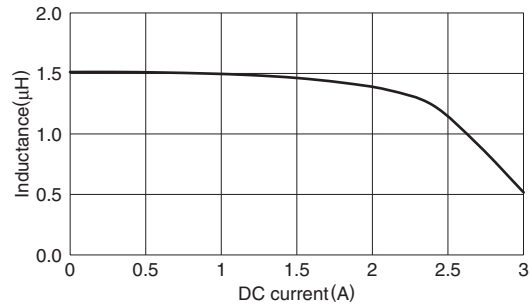
VLF504010MT-R68N



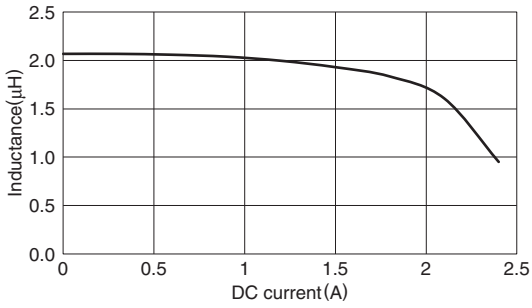
VLF504010MT-1R0N



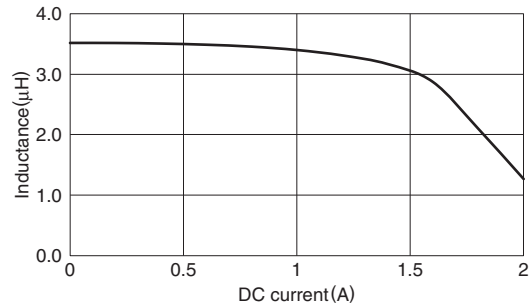
VLF504010MT-1R5N



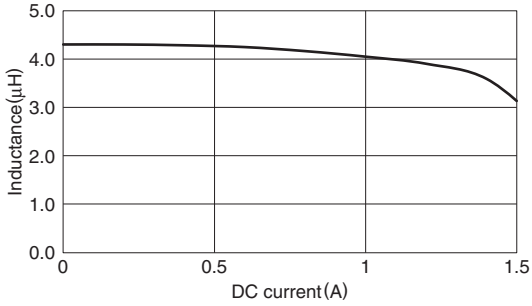
VLF504010MT-2R2M



VLF504010MT-3R3M



VLF504010MT-4R7M

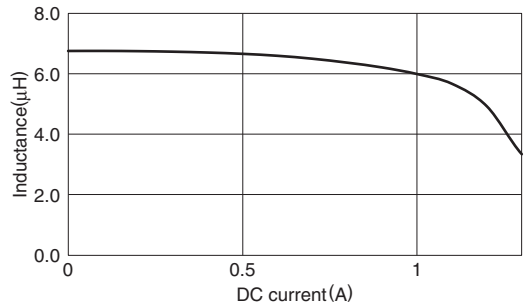


- All specifications are subject to change without notice.

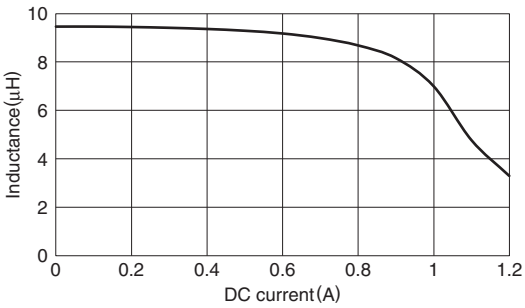
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

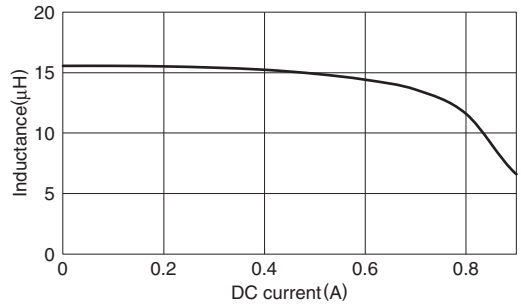
VLF504010MT-6R8M



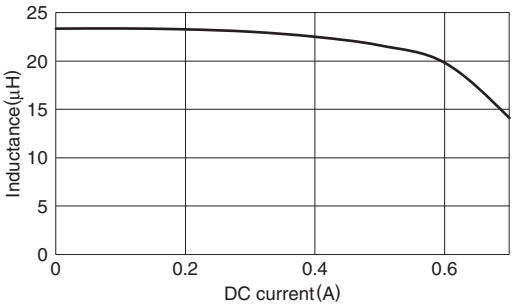
VLF504010MT-100M



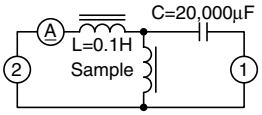
VLF504010MT-150M



VLF504010MT-220M



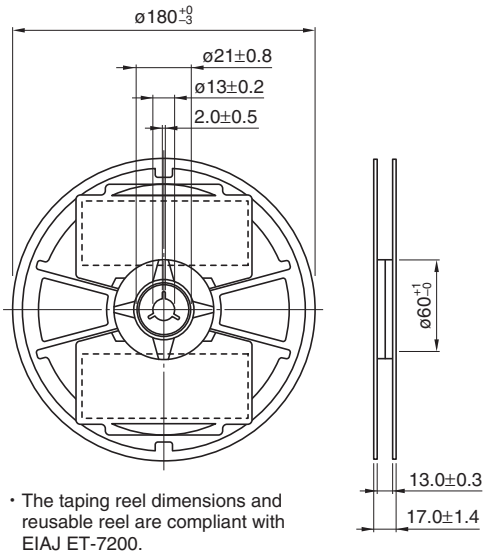
TEST CIRCUIT



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

PACKAGING STYLES

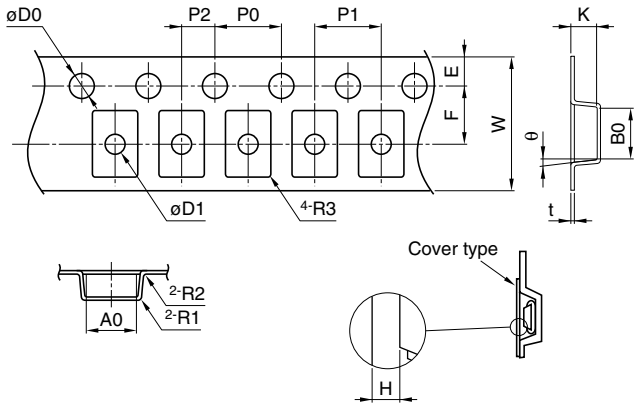
REEL DIMENSIONS



・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
4.45typ.	5.45typ.	12.00±0.2	5.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.15±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLF Series VLF504012MT

With the VLF504012MT 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.

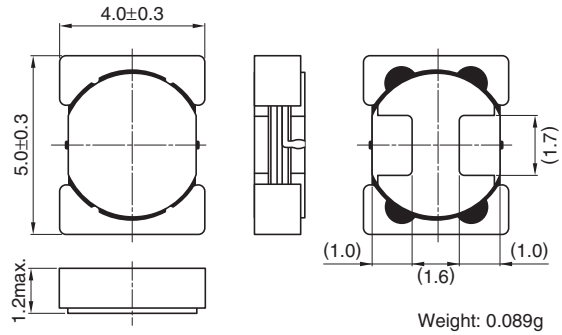
FEATURES

- Miniature size
  Mount area: 5.0×4.0mm
  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.

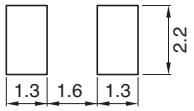
SHAPES AND DIMENSIONS



Weight: 0.089g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	504012M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

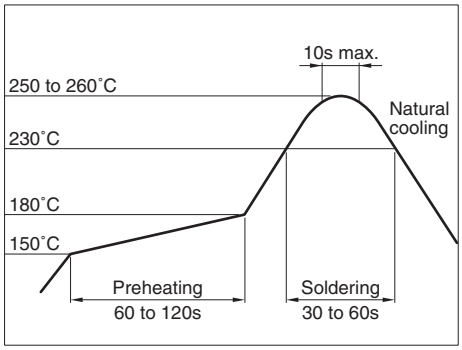
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF504012MT-1R0N	1.0	±30	1.0	0.038	0.032	3.67	4.08	3.19
VLF504012MT-1R5N	1.5	±30	1.0	0.048	0.040	3.02	3.36	2.91
VLF504012MT-2R2M	2.2	±20	1.0	0.055	0.046	2.54	2.82	2.71
VLF504012MT-3R3M	3.3	±20	1.0	0.074	0.062	2.13	2.37	2.47
VLF504012MT-4R7M	4.7	±20	1.0	0.12	0.10	1.75	1.94	1.83
VLF504012MT-6R8M	6.8	±20	1.0	0.17	0.14	1.48	1.64	1.77
VLF504012MT-100M	10.0	±20	1.0	0.23	0.19	1.18	1.32	1.30
VLF504012MT-150M	15.0	±20	1.0	0.32	0.27	1.01	1.12	1.08
VLF504012MT-220M	22.0	±20	1.0	0.58	0.48	0.80	0.89	0.84

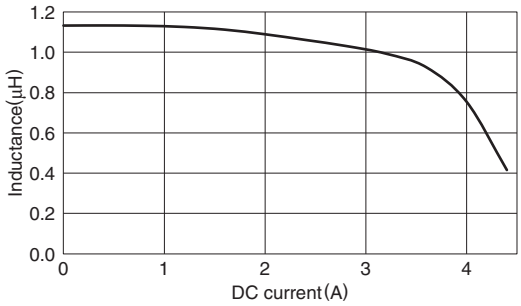
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

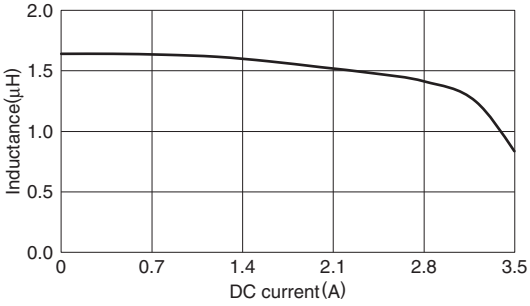
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

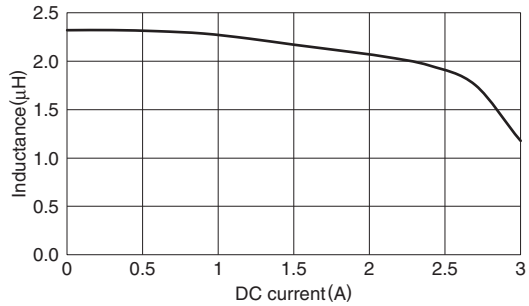
VLF504012MT-1R0N



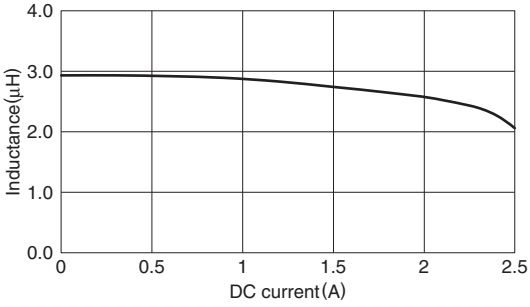
VLF504012MT-1R5N



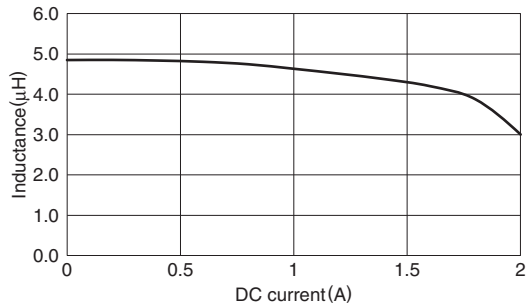
VLF504012MT-2R2M



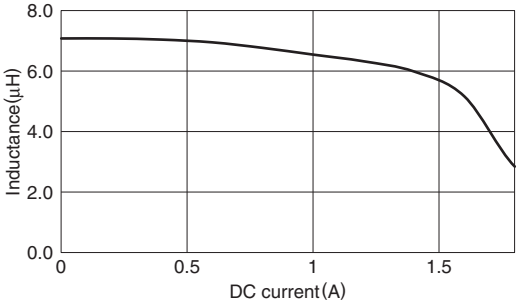
VLF504012MT-3R3M



VLF504012MT-4R7M



VLF504012MT-6R8M

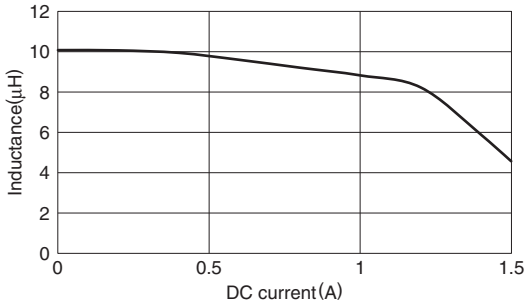


- All specifications are subject to change without notice.

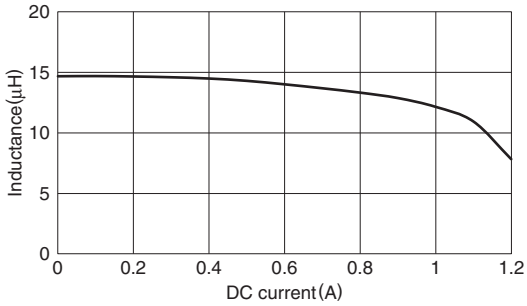
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

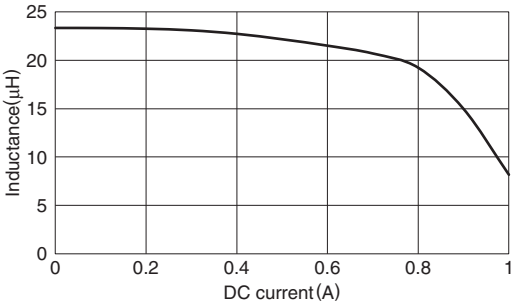
VLF504012MT-100M



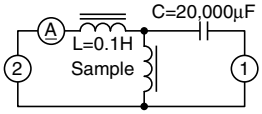
VLF504012MT-150M



VLF504012MT-220M



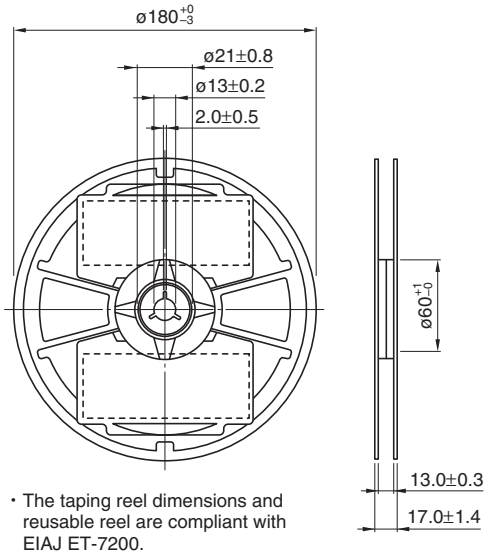
TEST CIRCUIT



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

PACKAGING STYLES

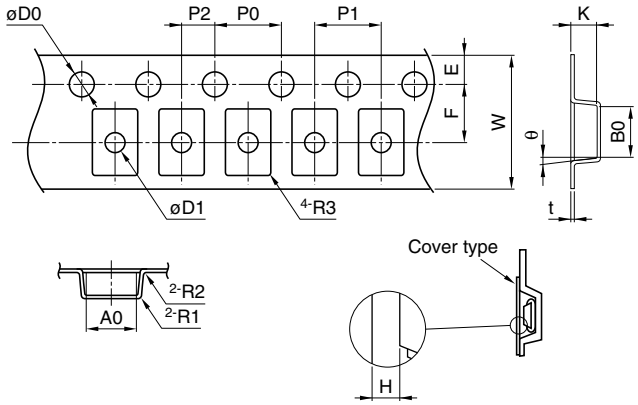
REEL DIMENSIONS



・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
4.45typ.	5.45typ.	12.00±0.2	5.50±0.1	1.75±0.1

P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	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

Conformity to RoHS Directive

VLF Series VLF504015MT

With the VLF504015MT 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.

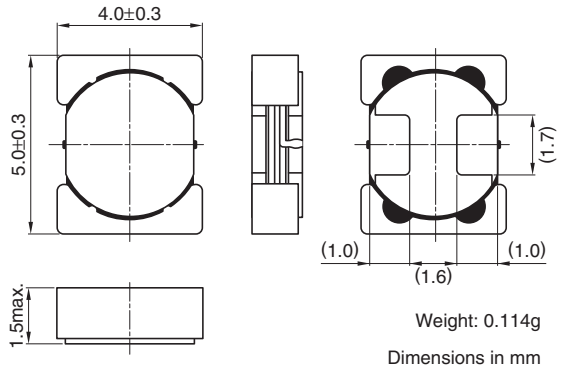
FEATURES

- Miniature size
  Mount area: 5.0×4.0mm
  Low profile: 1.5mm 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.

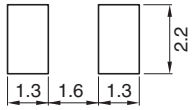
SHAPES AND DIMENSIONS



Weight: 0.114g

Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM

PRODUCT IDENTIFICATION

VLF	504015M	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)

(4) Inductance value

1R0	1.0μH
100	10μH

(5) Inductance tolerance

M	±20%
N	±30%

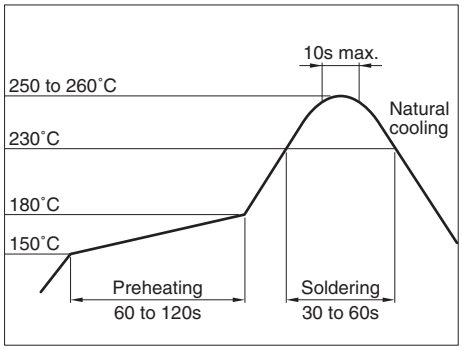
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	1000 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.)

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance(%)	Test frequency (MHz)	DC resistance(Ω)		Rated current*(A)		
				max.	typ.	Based on inductance change Idc1		Based on temperature rise Idc2
						max.	typ.	typ.
VLF504015MT-1R0N	1.0	±30	1.0	0.032	0.026	3.72	4.14	3.61
VLF504015MT-1R5N	1.5	±30	1.0	0.038	0.032	3.42	3.80	3.27
VLF504015MT-2R2M	2.2	±20	1.0	0.053	0.044	2.71	3.01	2.60
VLF504015MT-3R3M	3.3	±20	1.0	0.063	0.053	2.33	2.59	2.51
VLF504015MT-4R7M	4.7	±20	1.0	0.07	0.06	1.98	2.20	2.43
VLF504015MT-6R8M	6.8	±20	1.0	0.10	0.08	1.65	1.83	2.00
VLF504015MT-100M	10.0	±20	1.0	0.14	0.12	1.30	1.44	1.58
VLF504015MT-150M	15.0	±20	1.0	0.22	0.18	1.13	1.25	1.37
VLF504015MT-220M	22.0	±20	1.0	0.31	0.26	0.93	1.03	1.08

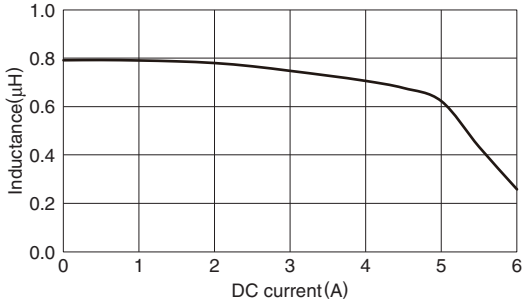
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

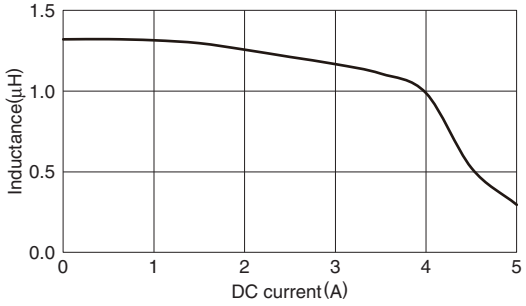
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

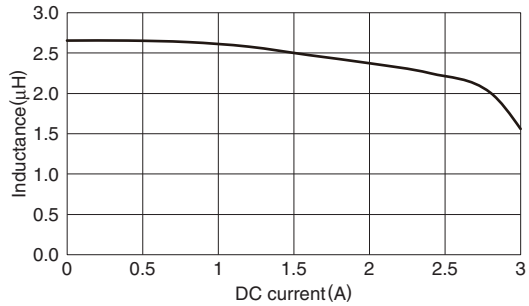
VLF504015MT-1R0N



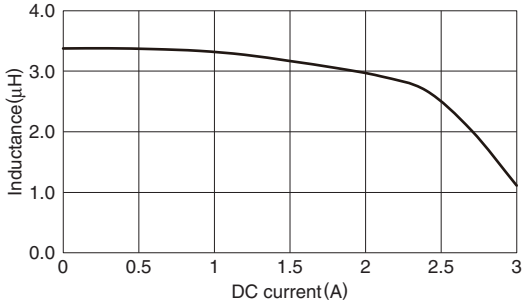
VLF504015MT-1R5N



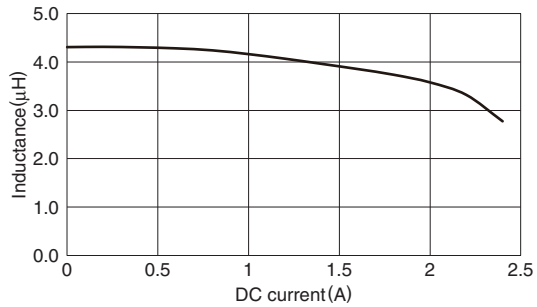
VLF504015MT-2R2M



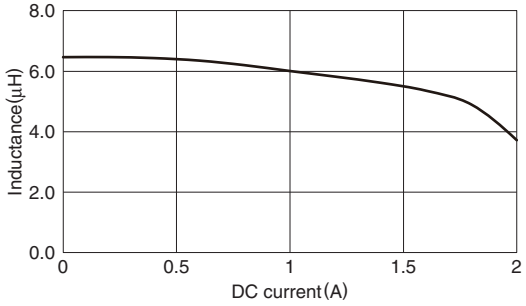
VLF504015MT-3R3M



VLF504015MT-4R7M



VLF504015MT-6R8M



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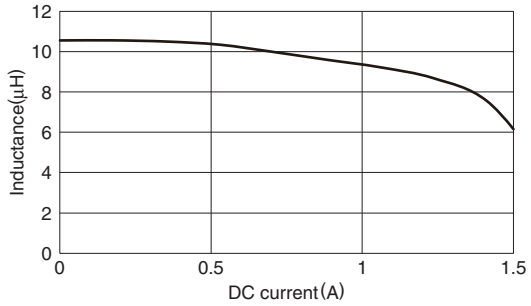
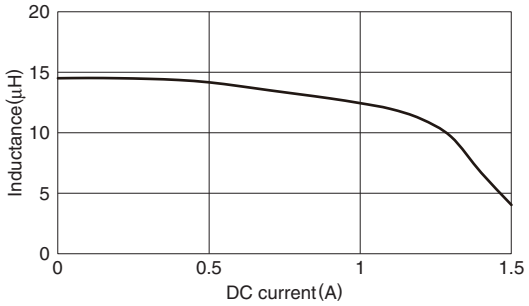
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

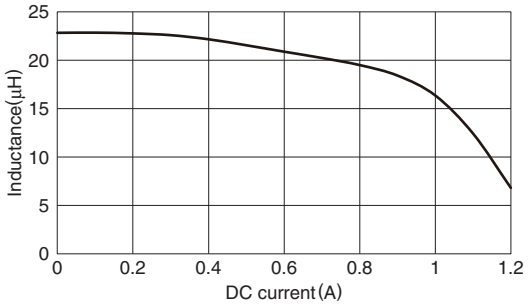
VLF504015MT-100M



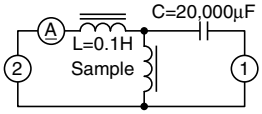
VLF504015MT-150M



VLF504015MT-220M



TEST CIRCUIT



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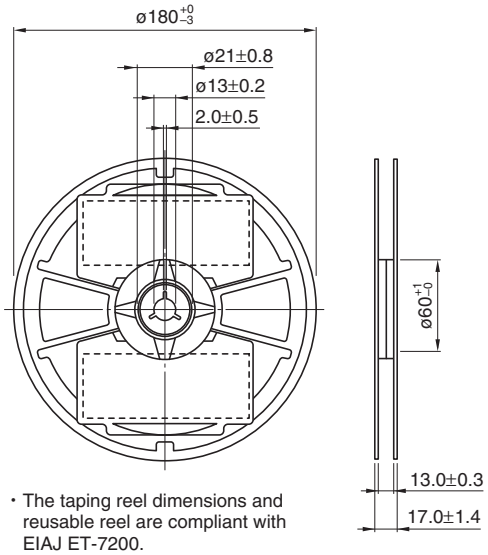
2: DC constant current source

PACKAGING STYLES

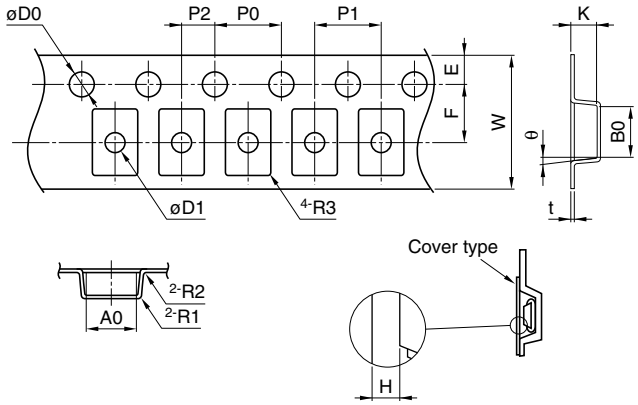
REEL DIMENSIONS



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

Dimensions in mm

TAPE DIMENSIONS



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P1	P2	H	P0	øD0
8.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/–0

K	øD1	t	R1 to R3	θ
1.65±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.

Mouser Electronics

Authorized Distributor

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TDK:

VLF4012AT-150MR63 VLF4012AT-6R8MR96 VLF4012AT-220MR51 VLF4012AT-330MR39 VLF4012AT-100MR79 VLF4012AT-3R3M1R3 VLF4012AT-1R5M1R6 VLF4012AT-2R2M1R5 VLF4012AT-470MR30 VLF4012AT-4R7M1R1 VLF5010AT-100MR78-2 VLF5010AT-150MR62-2 VLF5010AT-220MR50-2 VLF5010AT-330MR41-2 VLF302510MT-100M VLF302510MT-150M VLF302510MT-1R0N VLF302510MT-1R5N VLF302510MT-220M VLF302510MT-2R2M VLF302510MT-3R3M VLF302510MT-4R7M VLF302510MT-6R8M VLF302512MT-100M VLF302512MT-150M VLF302512MT-1R0N VLF302512MT-1R5N VLF302512MT-220M VLF302512MT-2R2M VLF302512MT-3R3M VLF302512MT-4R7M VLF302512MT-6R8M VLF3014AT-100MR59 VLF3014AT-220MR37 VLF3014AT-2R2M1R2 VLF3014AT-3R3M1R0 VLF3014AT-4R7MR90 VLF3014AT-6R8MR72 VLF4014AT-100MR90 VLF4014AT-4R7M1R1 VLF5012AT-100MR80 VLF5012AT-2R2M1R5 VLF5012AT-3R3M1R3 VLF5012AT-4R7M1R2 VLF5012AT-6R8M1R0 VLF302515MT-220M VLF302515MT-2R2M VLF302515MT-150M VLF302515MT-4R7M VLF302515MT-R47N VLF302515MT-6R8M VLF302515MT-1R0N VLF302515MT-3R3M VLF302515MT-1R5N VLF302515MT-100M