

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

Conformity to RoHS Directive

VLF-MT Series VLF302510MT

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

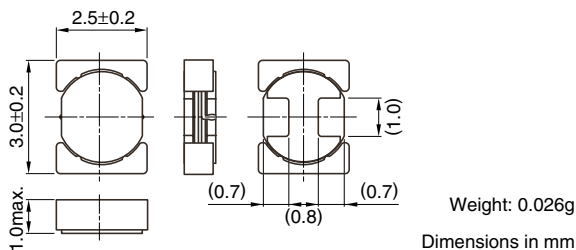
FEATURES

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

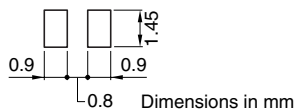
APPLICATIONS

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

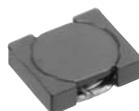
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERN



CIRCUIT DIAGRAM



PRODUCT IDENTIFICATION

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

- (1) Series name
- (2) Dimensions L×W×H mm max.
- (3) Packaging style

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

1R0	1.0μH
100	10μH

- (5) Inductance tolerance

M	±20%
N	±30%

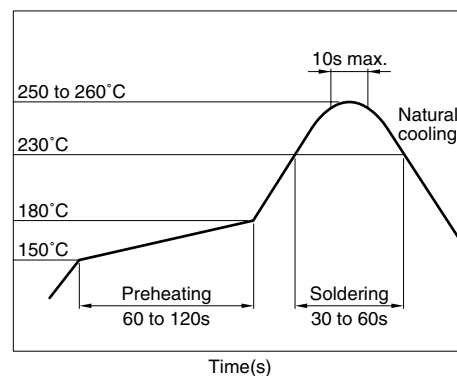
PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	2000 pieces/reel

HANDLING AND PRECAUTIONS

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

RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



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

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

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (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

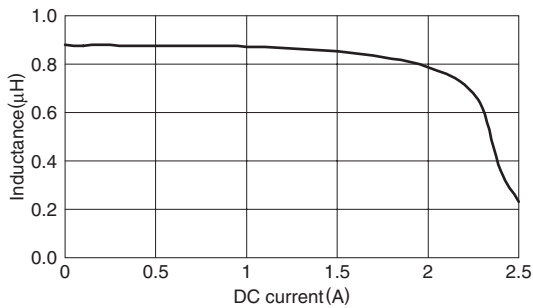
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

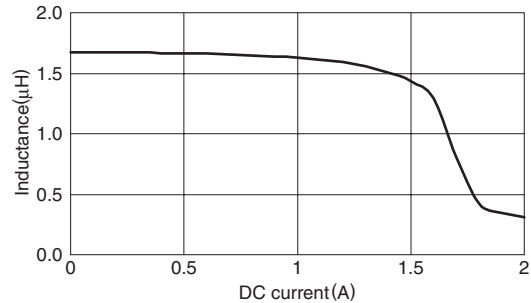
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

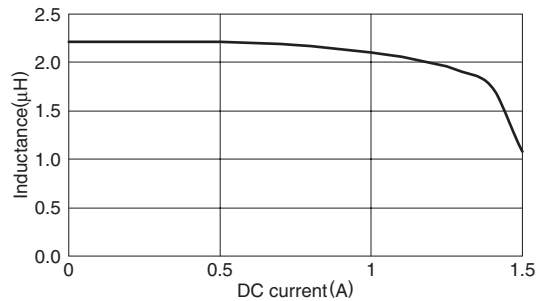
VLF302510MT-1R0N



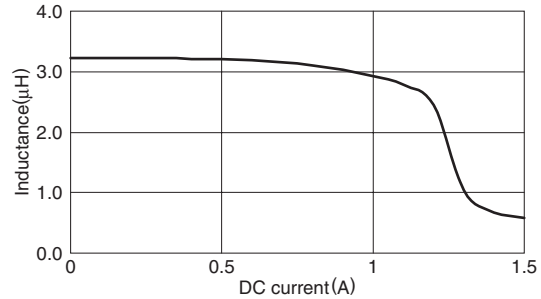
VLF302510MT-1R5N



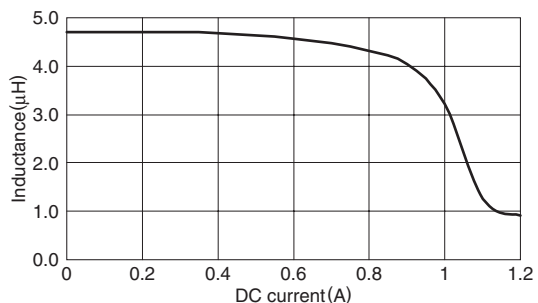
VLF302510MT-2R2M



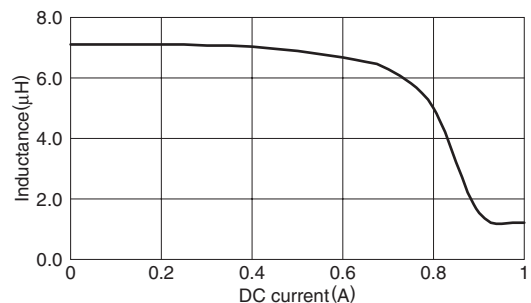
VLF302510MT-3R3M



VLF302510MT-4R7M



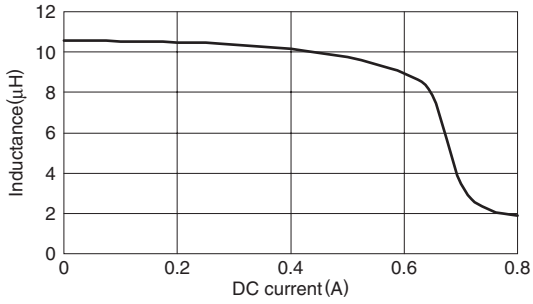
VLF302510MT-6R8M



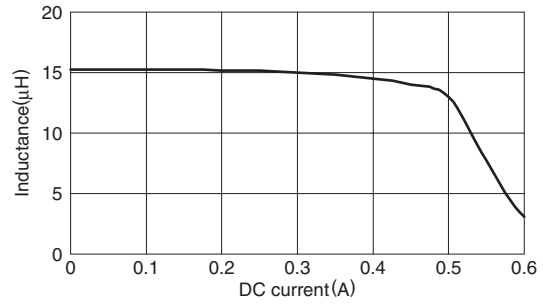
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

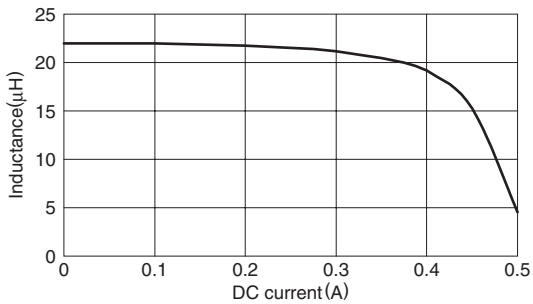
VLF302510MT-100M



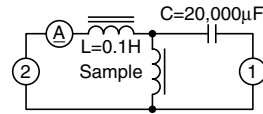
VLF302510MT-150M



VLF302510MT-220M



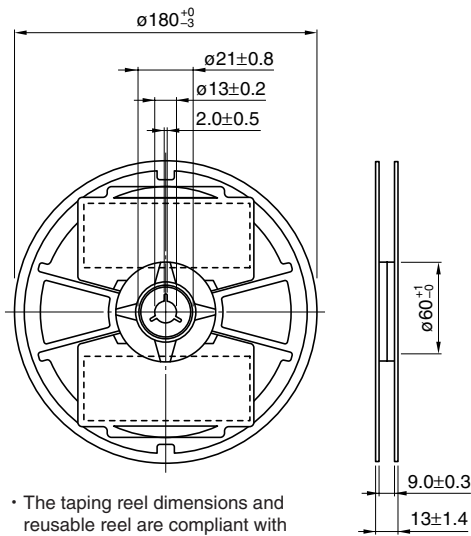
TEST CIRCUIT



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

PACKAGING STYLES

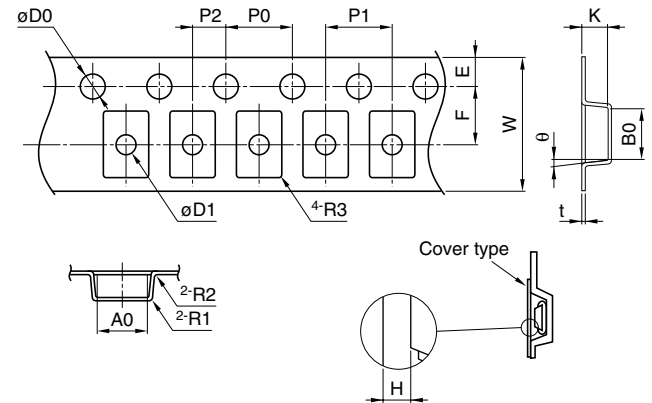
REEL DIMENSIONS



- 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	φD0
4.00±0.1	2.00±0.05	0.05 to 0.35	4.0±0.1	1.5+0.1/-0
K	φD1	t	R1 to R3	θ
1.15±0.1	1.2±0.2	0.25±0.05	0.3max.	5° typ.