

# Inductors for Power Circuits

Wound/STD • magnetic shielded

VLP series

Type:           VLP6045L  
                  VLP8040

Issue date:     March 2012

- All specifications are subject to change without notice.
  - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
-

# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

### VLP Series VLP6045L

#### FEATURES

- Miniature size  
Mount area: 6×6mm  
Height: 4.5mm max.
- Optimal for choke coils for DC-DC converters in mobile devices.
- Available for automatic mounting in tape and reel package.
- The products do not contain lead and support lead-free soldering.

#### APPLICATIONS

DC to DC converters for LCD TVs, printers, note PCs, etc.

#### PRODUCT IDENTIFICATION

VLP	6045	L	T	-	○○○	□
(1)	(2)	(3)	(4)		(5)	(6)

(1) Series name

(2) Dimensions L×H

6045 6.8×4.5mm max.

(3) Welding

L Leser welding

(4) Packaging style

T Embossed carrier tape

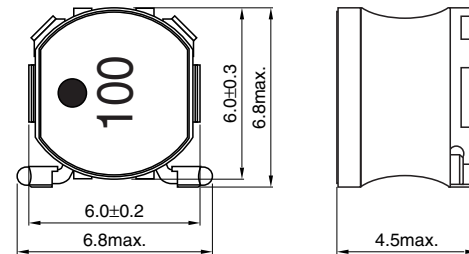
(5) Inductance value

1R0 1.0μH

(6) Inductance tolerance

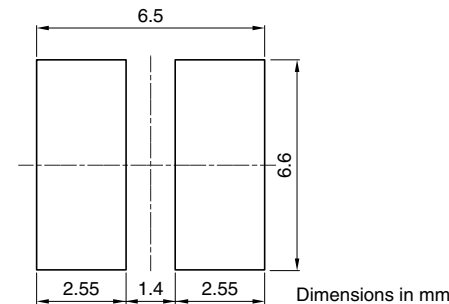
N	±30%
M	±20%

#### SHAPES AND DIMENSIONS



Dimensions in mm

#### RECOMMENDED PC BOARD PATTERN



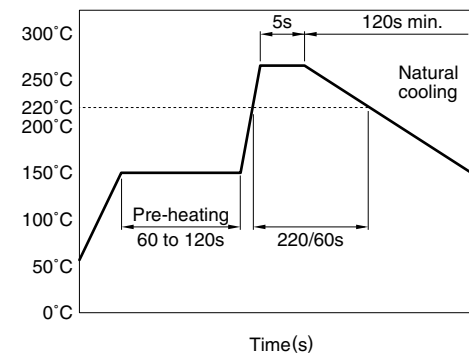
Dimensions in mm

#### CIRCUIT DIAGRAM



#### 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.

• All specifications are subject to change without notice.

## ELECTRICAL CHARACTERISTICS

Part No.	Inductance ( $\mu\text{H}$ )	Inductance tolerance (%)	Test frequency (kHz)	DC resistance ( $\Omega$ )		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLP6045LT-1R0N	1.0	$\pm 30$	100	0.017	0.013	8.6	6.5
VLP6045LT-1R5N	1.5	$\pm 30$	100	0.024	0.018	7.2	5.4
VLP6045LT-2R2N	2.2	$\pm 30$	100	0.026	0.020	6.4	5.1
VLP6045LT-3R3N	3.3	$\pm 30$	100	0.033	0.025	5.2	4.6
VLP6045LT-4R7M	4.7	$\pm 20$	100	0.038	0.029	4.4	4.1
VLP6045LT-6R8M	6.8	$\pm 20$	100	0.057	0.044	3.8	3.3
VLP6045LT-100M	10	$\pm 20$	100	0.072	0.055	3.2	3.0
VLP6045LT-150M	15	$\pm 20$	100	0.112	0.086	2.5	2.3
VLP6045LT-220M	22	$\pm 20$	100	0.140	0.108	2.1	2.0
VLP6045LT-330M	33	$\pm 20$	100	0.202	0.155	1.6	1.5
VLP6045LT-470M	47	$\pm 20$	100	0.299	0.230	1.4	1.4
VLP6045LT-680M	68	$\pm 20$	100	0.455	0.350	1.1	1.0
VLP6045LT-101M	100	$\pm 20$	100	0.663	0.510	0.9	0.8

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

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

• Test equipment Inductance: 4285A PRECISION LCR METER, HP or equivalent

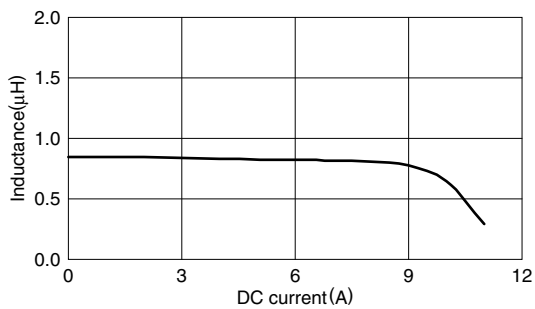
Rdc: MILLIOHM METER VP-2941A, MATSUSHITA or equivalent

L(ldc1): 4285A PRECISION LCR METER, HP with 42841A BIAS CURRENT SOURCE, HP/42842C TEST FIXTURE, HP or equivalent

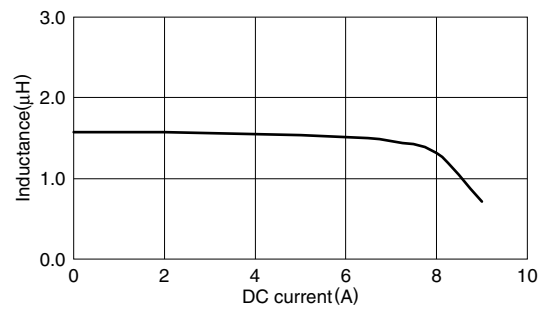
## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

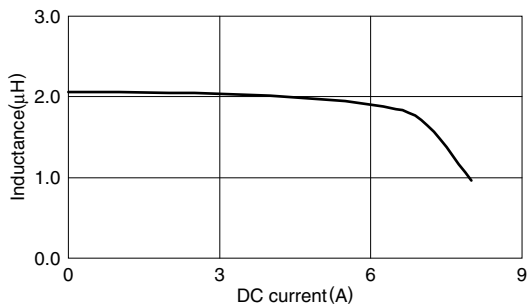
#### VLP6045LT-1R0N



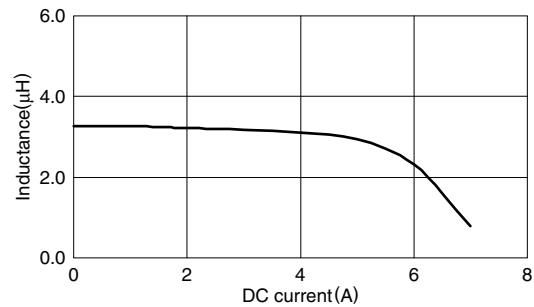
#### VLP6045LT-1R5N



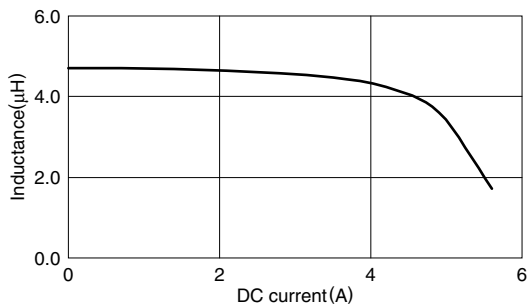
#### VLP6045LT-2R2N



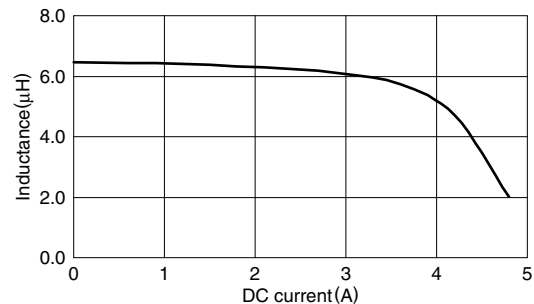
#### VLP6045LT-3R3N



#### VLP6045LT-4R7M

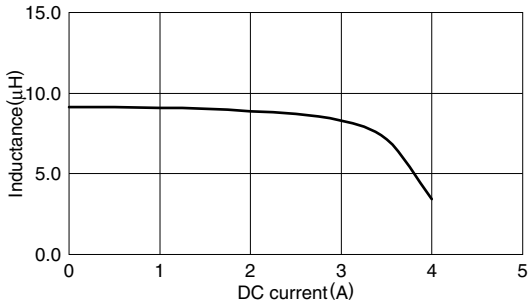


#### VLP6045LT-6R8M

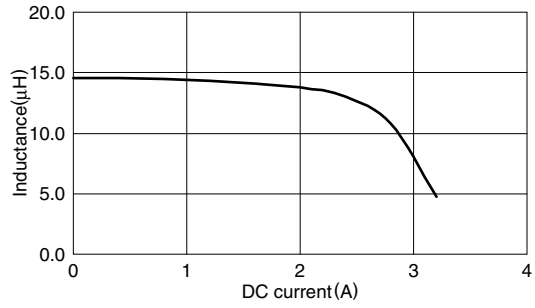


• All specifications are subject to change without notice.

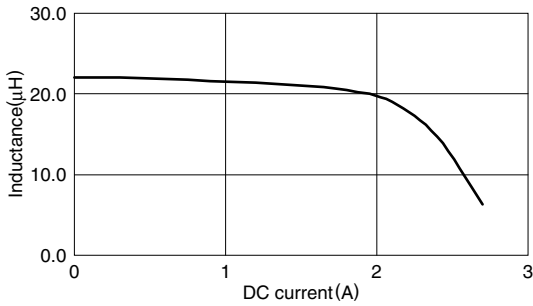
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLP6045LT-100M**



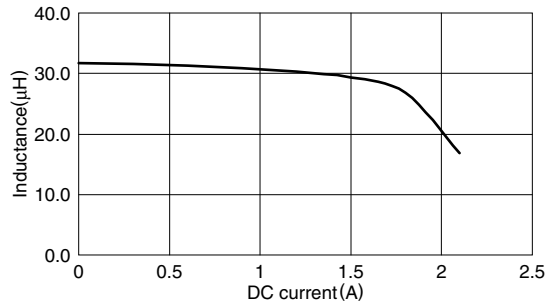
**VLP6045LT-150M**



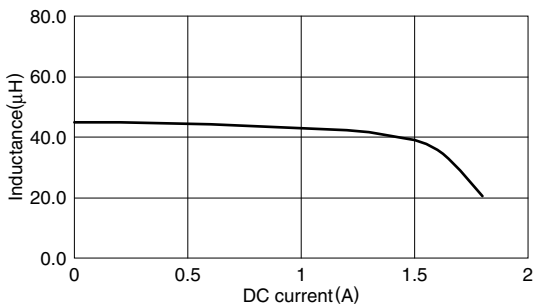
**VLP6045LT-220M**



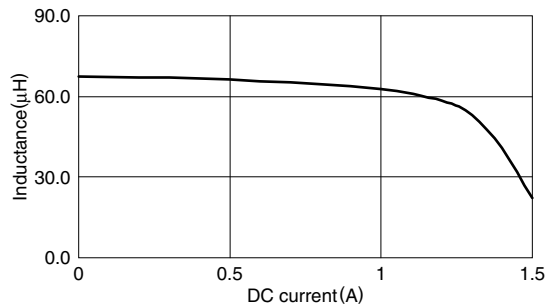
**VLP6045LT-330M**



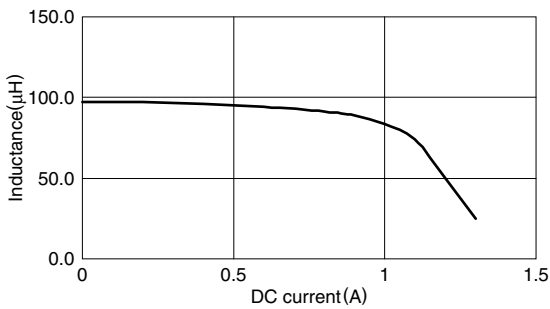
**VLP6045LT-470M**



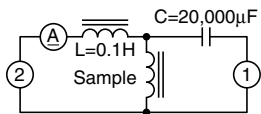
**VLP6045LT-680M**



**VLP6045LT-101M**



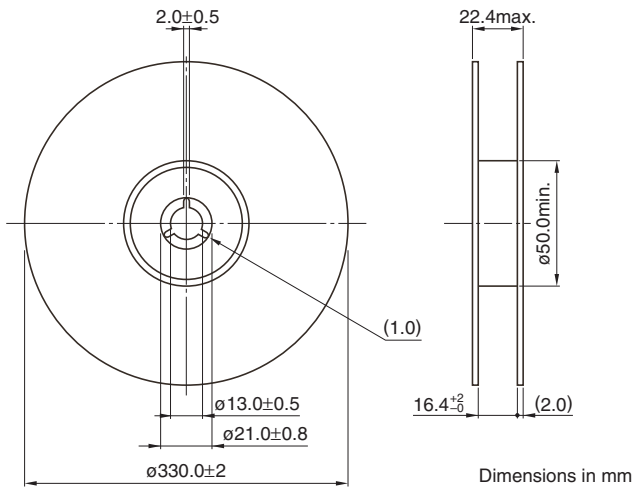
**TEST CIRCUIT**



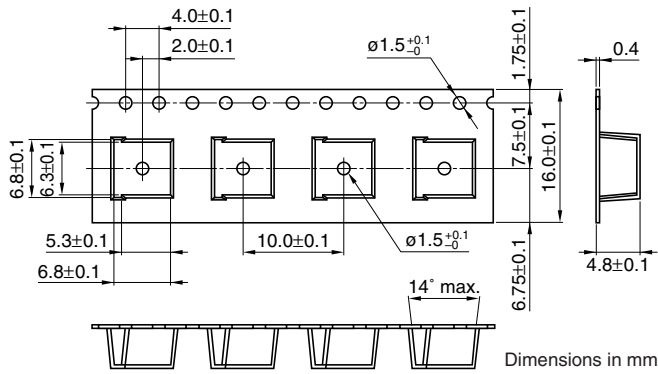
1: LCR meter 4285A f=100kHz  
 2: DC constant current source

### PACKAGING STYLES

#### REEL DIMENSIONS



#### TAPE DIMENSIONS



# Inductors for Power Circuits

## Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

### VLP Series VLP8040

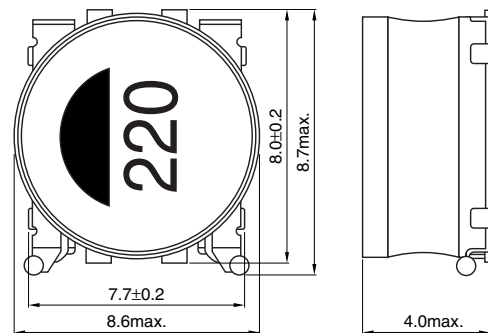
#### FEATURES

- Miniature size  
Mount area: 8×7.7mm  
Height: 4.0mm max.
- Generic use for portable DC to DC converter line.
- Available for automatic mounting in tape and reel package.
- The products do not contain lead and support lead-free soldering.

#### APPLICATIONS

DC to DC converters for LCD TVs, printers, note PCs, etc.

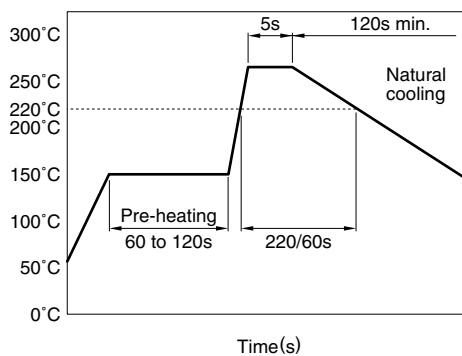
#### SHAPES AND DIMENSIONS



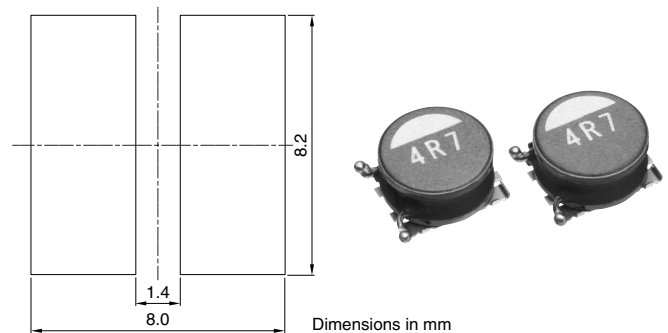
Dimensions in mm

#### RECOMMENDED SOLDERING CONDITION

##### REFLOW SOLDERING



#### RECOMMENDED PC BOARD PATTERN



Dimensions in mm

#### ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance (%)	Test frequency (kHz)	DC resistance (Ω)		Rated current(A)*	
				max.	typ.	Based on inductance change max.	Based on temperature rise typ.
VLP8040T-1R0N	1.0	±30	100	0.011	0.008	9.4	7.0
VLP8040T-1R5N	1.5	±30	100	0.013	0.010	7.8	6.7
VLP8040T-2R2N	2.2	±30	100	0.015	0.012	6.7	6.2
VLP8040T-3R3N	3.3	±30	100	0.020	0.015	5.2	5.2
VLP8040T-4R7M	4.7	±20	100	0.025	0.019	4.4	4.5
VLP8040T-6R8M	6.8	±20	100	0.032	0.024	3.6	4.0
VLP8040T-100M	10	±20	100	0.038	0.032	3.2	3.5
VLP8040T-150M	15	±20	100	0.058	0.048	2.6	2.9
VLP8040T-220M	22	±20	100	0.075	0.062	2.2	2.5
VLP8040T-330M	33	±20	100	0.11	0.090	1.8	2.1
VLP8040T-470M	47	±20	100	0.16	0.13	1.5	1.7
VLP8040T-680M	68	±20	100	0.23	0.19	1.2	1.4
VLP8040T-101M	100	±20	100	0.33	0.28	1.0	1.2
VLP8040T-151M	150	±20	100	0.49	0.41	0.8	1.0
VLP8040T-221M	220	±20	100	0.73	0.61	0.6	0.8
VLP8040T-331M	330	±20	100	1.1	0.89	0.5	0.7
VLP8040T-681M	680	±20	100	2.2	1.8	0.3	0.5

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

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

• Test equipment Inductance: 4285A PRECISION LCR METER, HP or equivalent

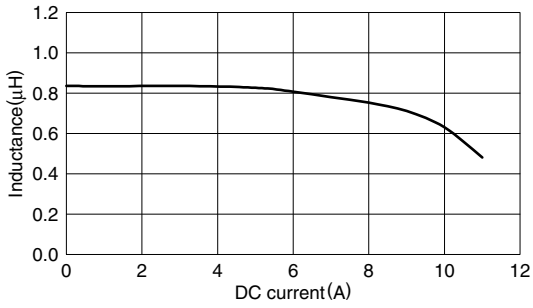
Rdc: MILLIOHM METER VP-2941A, MATSUSHITA or equivalent

L(ldc1): 4285A PRECISION LCR METER, HP with 42841A BIAS CURRENT SOURCE, HP/42842C TEST FIXTURE, HP or equivalent

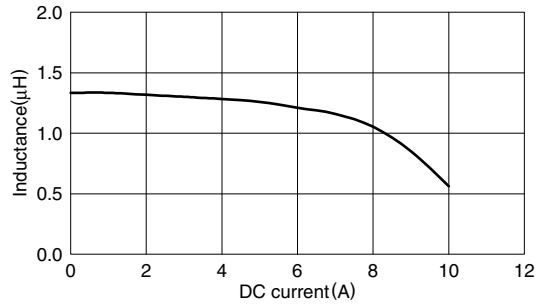
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

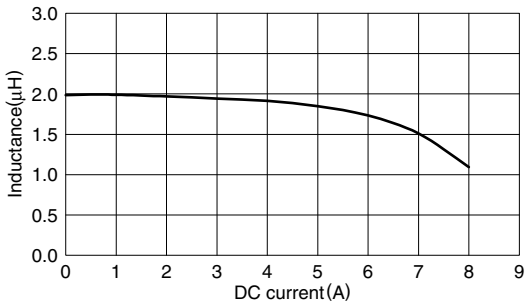
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLP8040T-1R0N**



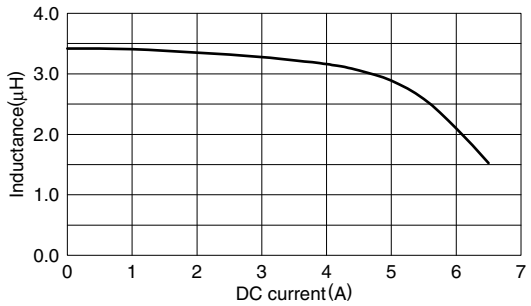
**VLP8040T-1R5N**



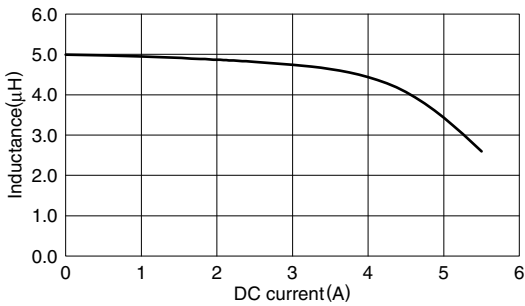
**VLP8040T-2R2N**



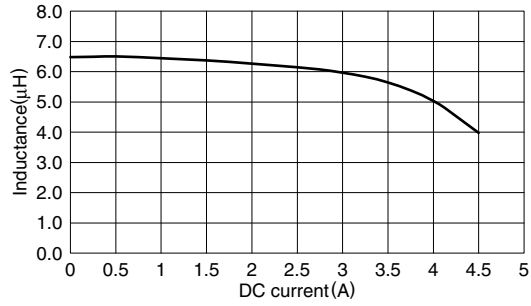
**VLP8040T-3R3N**



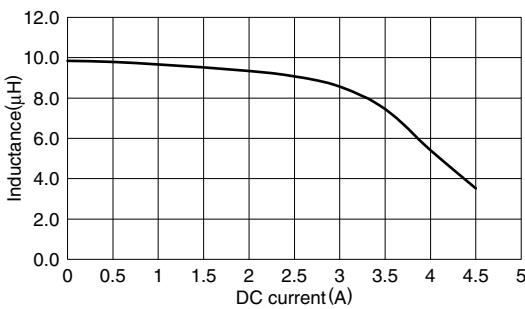
**VLP8040T-4R7M**



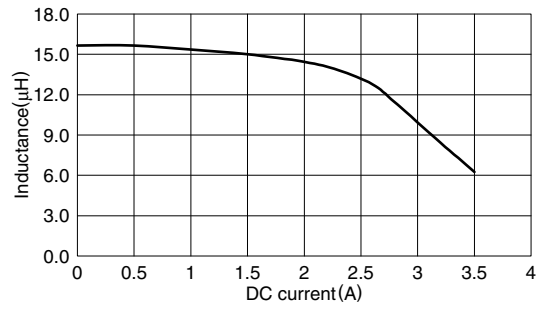
**VLP8040T-6R8M**



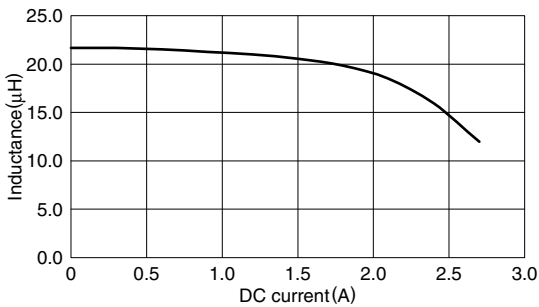
**VLP8040T-100M**



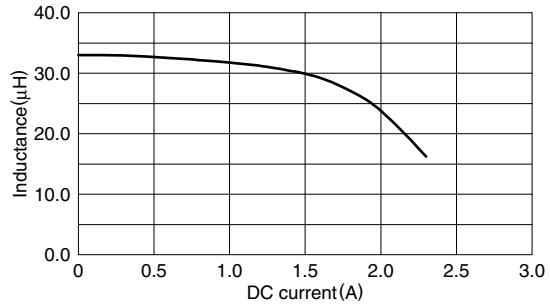
**VLP8040T-150M**



**VLP8040T-220M**

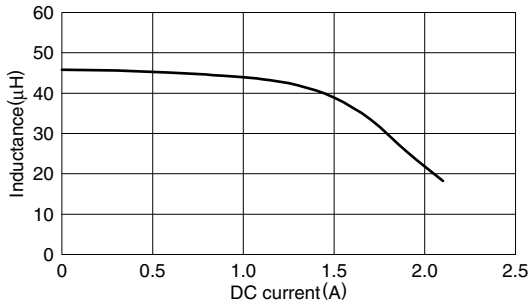


**VLP8040T-330M**

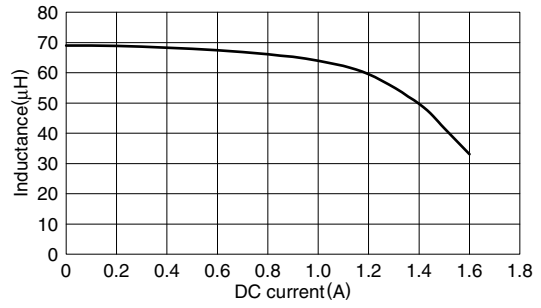


• All specifications are subject to change without notice.

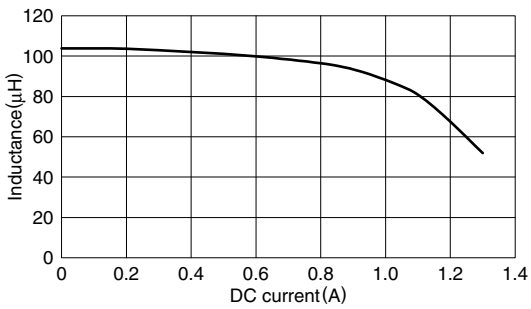
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS**  
**VLP8040T-470M**



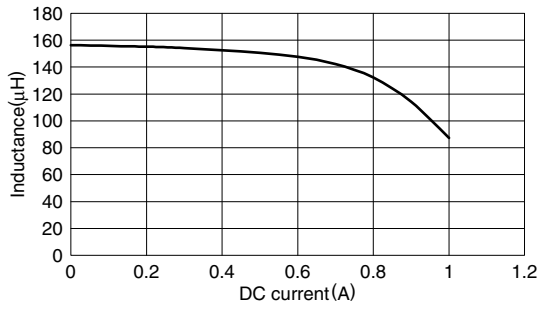
**VLP8040T-680M**



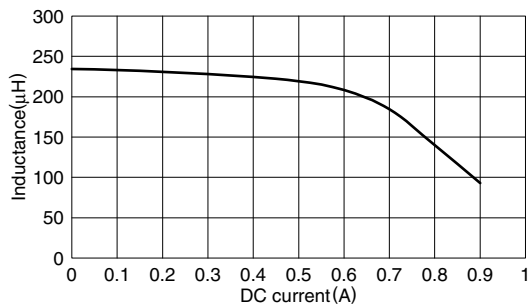
**VLP8040T-101M**



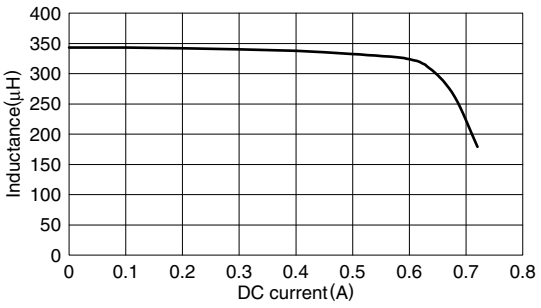
**VLP8040T-151M**



**VLP8040T-221M**



**VLP8040T-331M**



**VLP8040T-681M**

