Inductors for Power Circuits

Wound/STD • magnetic shielded

VLS series

Type:
VLS201610E
VLS201612E
VLS2010E
VLS2012E
VLS252010E
VLS252012E
VLS252015E
VLS3010E
VLS3012E
VLS3015E
VLS4012E

Issue date: September 2011

- 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

VLS Series VLS201610E

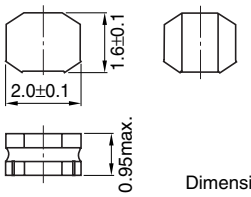
FEATURES

- Miniature size
  Mount area: 2×1.6mm
  Height: 0.95mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

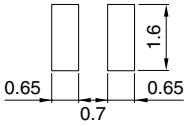
Cellular phones, DVCs, DSCs, PDAs, LCD displays,HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS201610ET-R47N	0.47	±30	1.0	0.065	0.054	1.85	2.10	1.95
VLS201610ET-R68N	0.68	±30	1.0	0.086	0.072	1.65	1.85	1.65
VLS201610ET-1R0N	1.0	±30	1.0	0.119	0.099	1.35	1.50	1.40
VLS201610ET-1R5N	1.5	±30	1.0	0.181	0.151	1.10	1.20	1.15
VLS201610ET-2R2M	2.2	±20	1.0	0.276	0.230	0.94	1.05	0.95
VLS201610ET-3R3M	3.3	±20	1.0	0.458	0.382	0.75	0.84	0.73
VLS201610ET-4R7M	4.7	±20	1.0	0.554	0.462	0.64	0.72	0.67
VLS201610ET-6R8M	6.8	±20	1.0	0.840	0.700	0.53	0.59	0.54
VLS201610ET-100M	10	±20	1.0	1.380	1.150	0.40	0.45	0.42

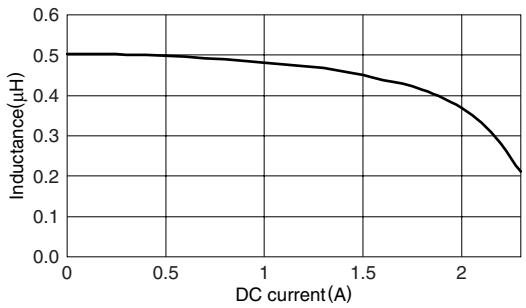
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

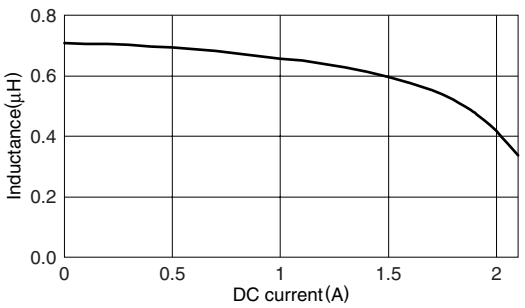
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS201610ET-R47N



VLS201610ET-R68N



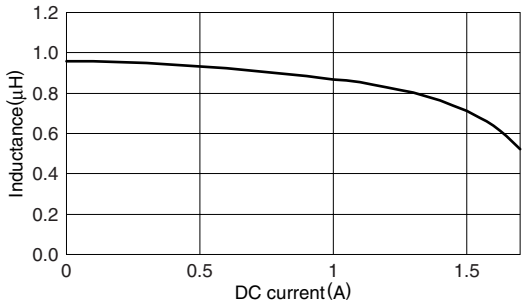
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

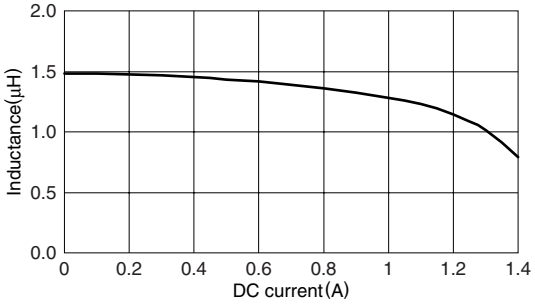
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

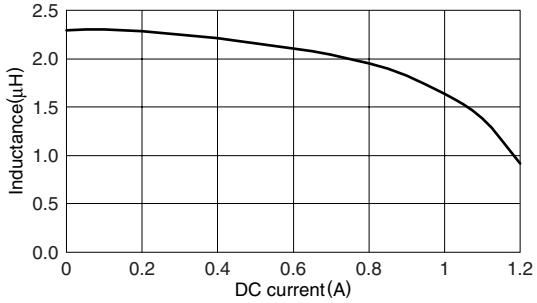
VLS201610ET-1R0N



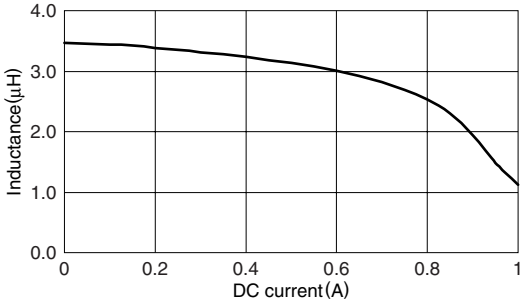
VLS201610ET-1R5N



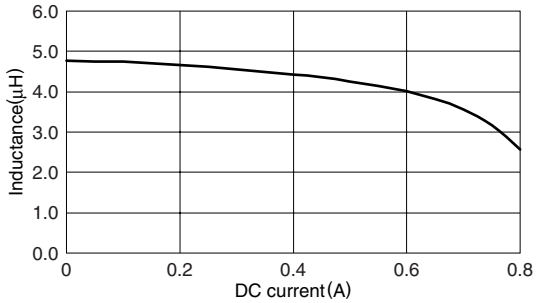
VLS201610ET-2R2M



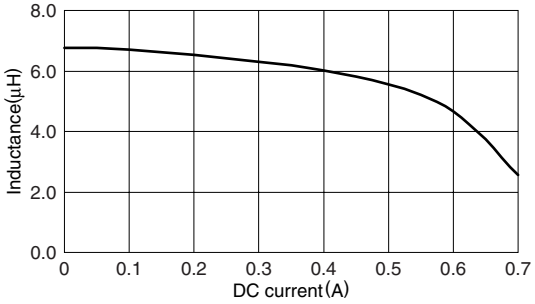
VLS201610ET-3R3M



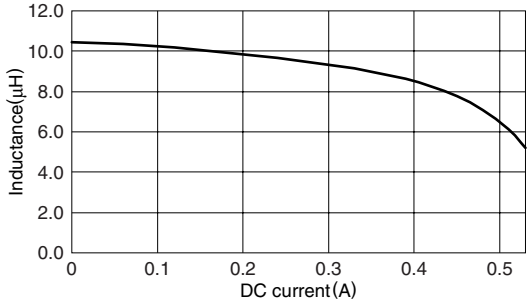
VLS201610ET-4R7M



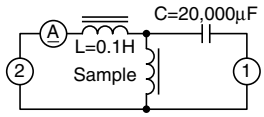
VLS201610ET-6R8M



VLS201610ET-100M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS201612E

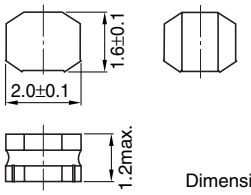
FEATURES

- Miniature size
  Mount area: 2×1.6mm
  Height: 1.2mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

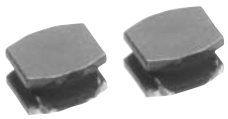
APPLICATIONS

Cellular phones, DVCs, DSCs, PDAs, LCD displays,HDDs, etc.

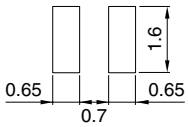
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS201612ET-R47N	0.47	±30	1.0	0.063	0.052	1.90	2.15	2.00
VLS201612ET-R68N	0.68	±30	1.0	0.072	0.060	1.70	1.90	1.85
VLS201612ET-1R0N	1.0	±30	1.0	0.093	0.077	1.50	1.65	1.65
VLS201612ET-1R5N	1.5	±30	1.0	0.159	0.132	1.20	1.30	1.25
VLS201612ET-2R2M	2.2	±20	1.0	0.195	0.162	1.05	1.15	1.15
VLS201612ET-3R3M	3.3	±20	1.0	0.357	0.297	0.79	0.88	0.85
VLS201612ET-4R7M	4.7	±20	1.0	0.438	0.365	0.70	0.78	0.75
VLS201612ET-6R8M	6.8	±20	1.0	0.708	0.590	0.58	0.65	0.60
VLS201612ET-100M	10	±20	1.0	1.026	0.855	0.47	0.53	0.50

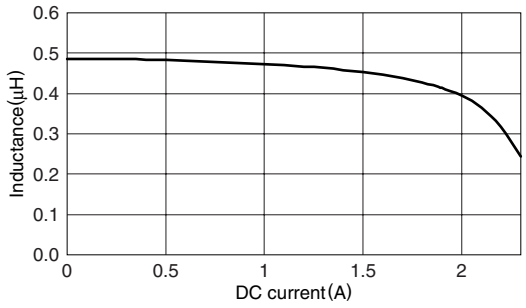
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

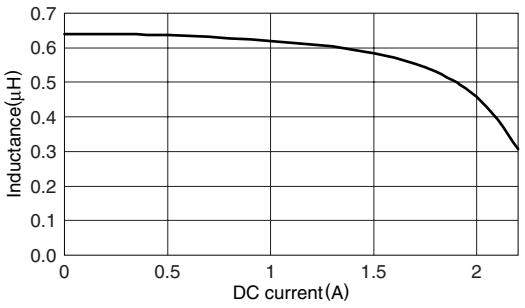
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS201612ET-R47N



VLS201612ET-R68N



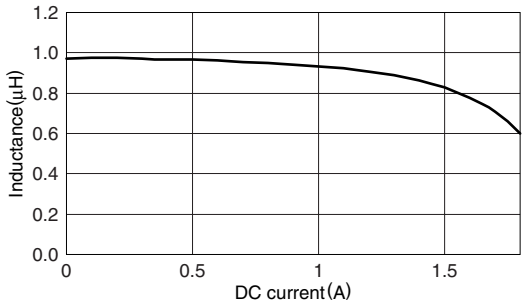
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

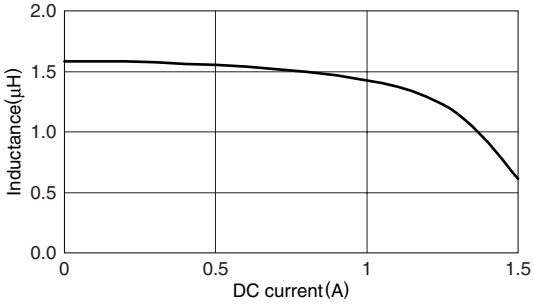
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

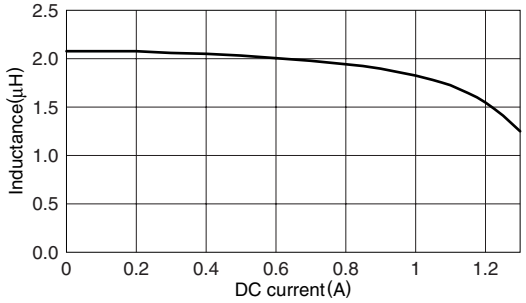
VLS201612ET-1R0N



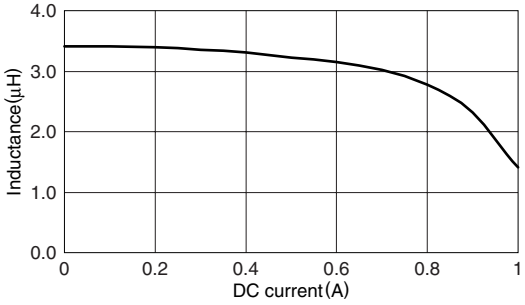
VLS201612ET-1R5N



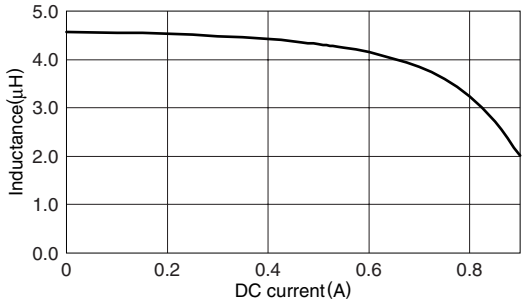
VLS201612ET-2R2M



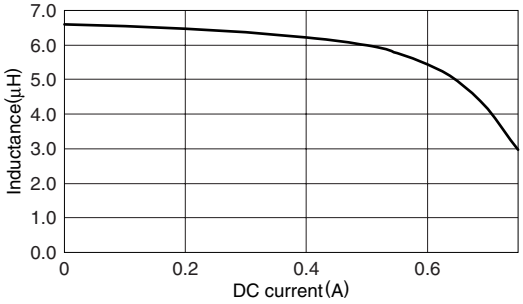
VLS201612ET-3R3M



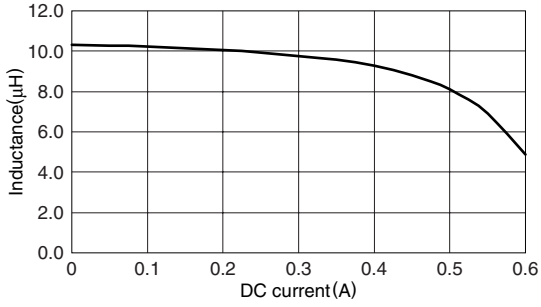
VLS201612ET-4R7M



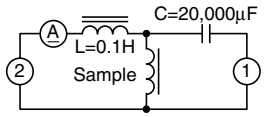
VLS201612ET-6R8M



VLS201612ET-100M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS2010E

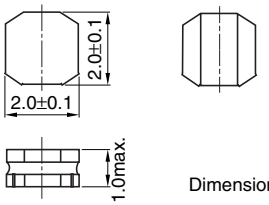
FEATURES

- Miniature size
  Mount area: 2×2mm
  Height: 1.0mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

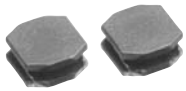
APPLICATIONS

Cellular phones, DVCs, DSCs, PDAs, LCD displays, HDDs, etc.

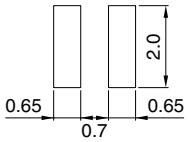
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS2010ET-R56N	0.56	±30	1.0	0.060	0.050	2.00	2.25	2.05
VLS2010ET-1R0N	1.0	±30	1.0	0.108	0.090	1.45	1.65	1.55
VLS2010ET-1R5N	1.5	±30	1.0	0.156	0.130	1.20	1.30	1.25
VLS2010ET-2R2M	2.2	±20	1.0	0.228	0.190	1.00	1.10	1.05
VLS2010ET-3R3M	3.3	±20	1.0	0.348	0.290	0.83	0.93	0.86
VLS2010ET-4R7M	4.7	±20	1.0	0.408	0.340	0.70	0.78	0.79
VLS2010ET-6R8M	6.8	±20	1.0	0.648	0.540	0.57	0.64	0.63
VLS2010ET-100M	10	±20	1.0	0.936	0.780	0.47	0.52	0.52
VLS2010ET-150M	15	±20	1.0	1.476	1.230	0.40	0.44	0.41
VLS2010ET-220M	22	±20	1.0	2.040	1.700	0.33	0.37	0.35

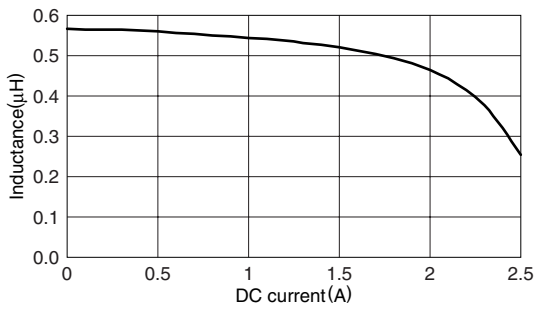
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

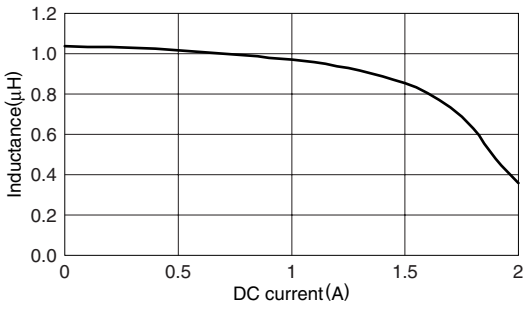
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS2010ET-R56N



VLS2010ET-1R0N



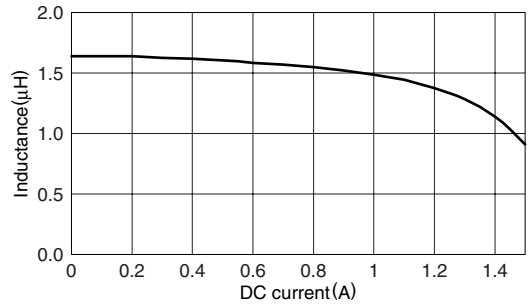
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

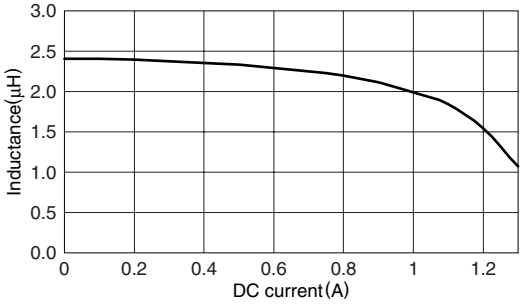
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

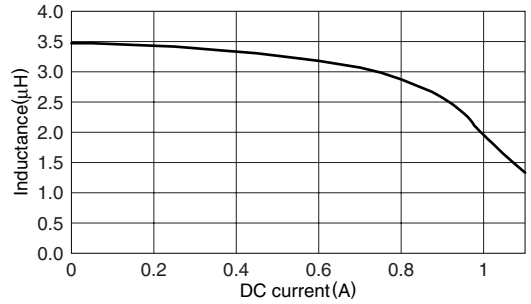
VLS2010ET-1R5N



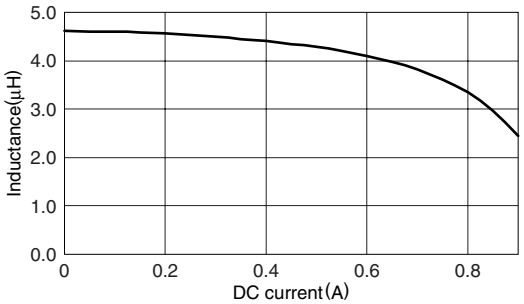
VLS2010ET-2R2M



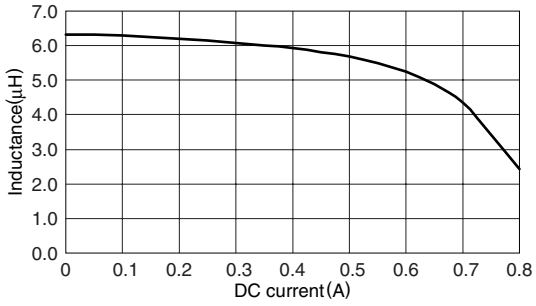
VLS2010ET-3R3M



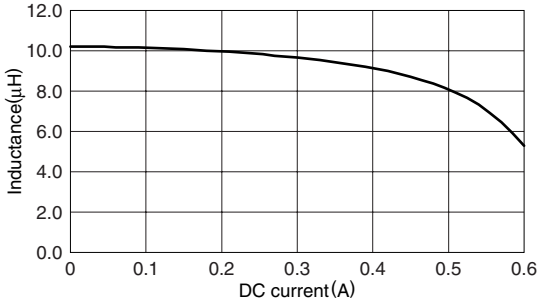
VLS2010ET-4R7M



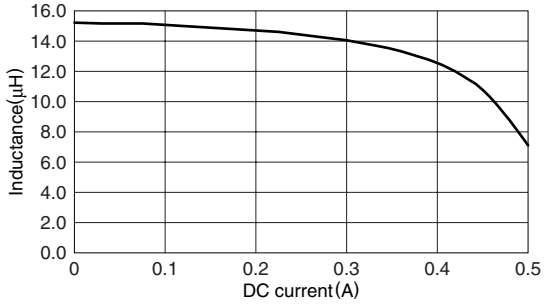
VLS2010ET-6R8M



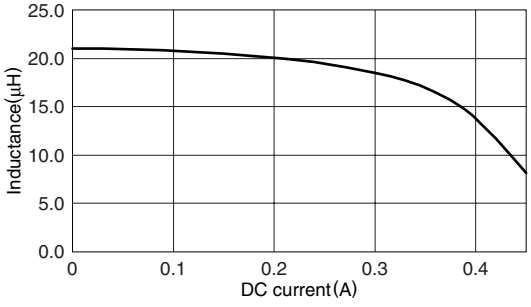
VLS2010ET-100M



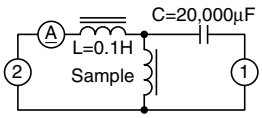
VLS2010ET-150M



VLS2010ET-220M



TEST CIRCUIT



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

TDK

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS2012E

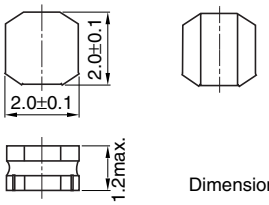
FEATURES

- Miniature size
  Mount area: 2×2mm
  Height: 1.2mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

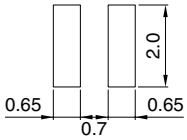
Cellular phones, DVCs, DSCs, PDAs, LCD displays, HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS2012ET-R47N	0.47	±30	1.0	0.059	0.049	2.05	2.25	2.00
VLS2012ET-R68N	0.68	±30	1.0	0.066	0.055	1.70	1.90	1.85
VLS2012ET-1R0N	1.0	±30	1.0	0.086	0.071	1.45	1.65	1.65
VLS2012ET-1R5N	1.5	±30	1.0	0.108	0.090	1.20	1.30	1.45
VLS2012ET-2R2M	2.2	±20	1.0	0.153	0.127	1.00	1.10	1.25
VLS2012ET-3R3M	3.3	±20	1.0	0.228	0.190	0.84	0.93	1.00
VLS2012ET-4R7M	4.7	±20	1.0	0.336	0.280	0.70	0.78	0.84
VLS2012ET-6R8M	6.8	±20	1.0	0.498	0.415	0.57	0.64	0.69
VLS2012ET-100M	10	±20	1.0	0.834	0.695	0.47	0.52	0.53
VLS2012ET-150M	15	±20	1.0	1.062	0.885	0.40	0.44	0.47
VLS2012ET-220M	22	±20	1.0	1.764	1.470	0.33	0.37	0.35

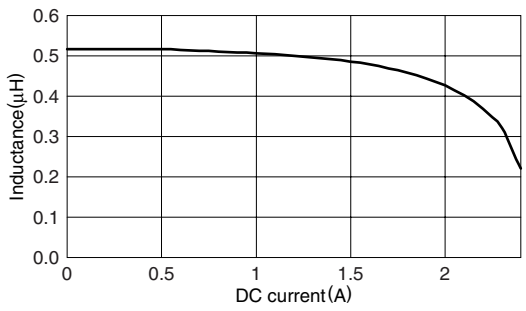
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

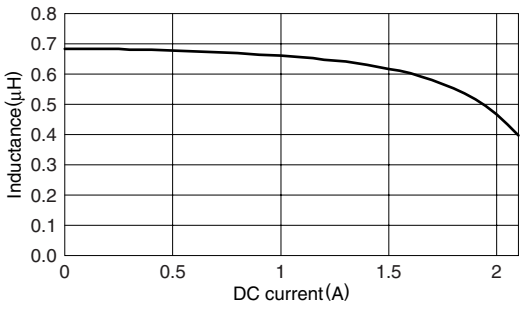
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS2012ET-R47N



VLS2012ET-R68N



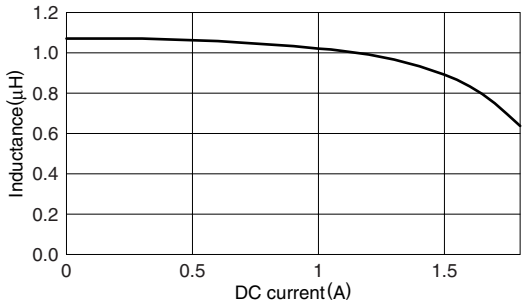
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

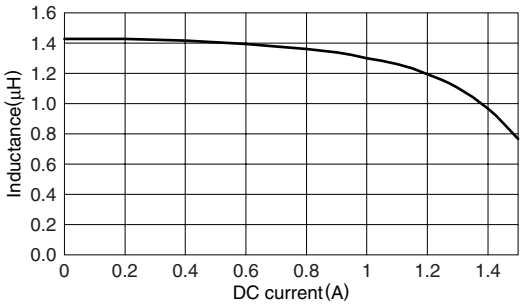
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

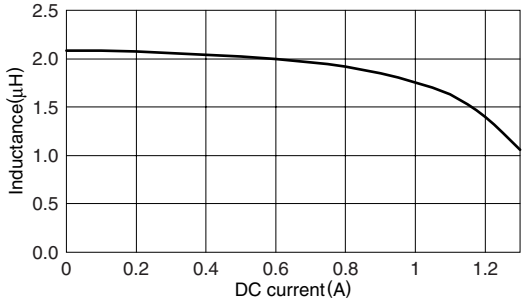
VLS2012ET-1R0N



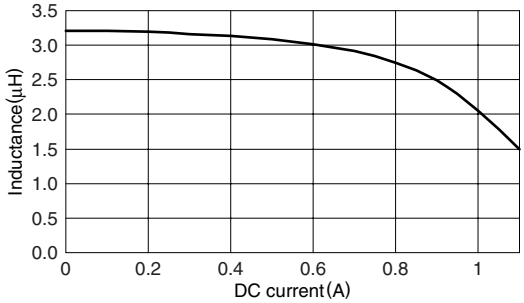
VLS2012ET-1R5N



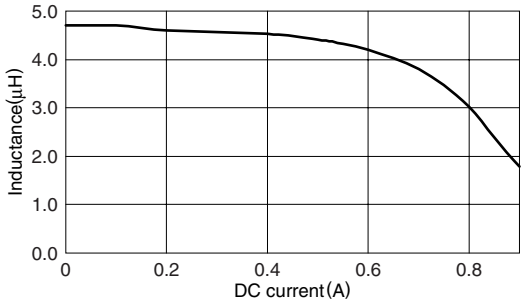
VLS2012ET-2R2M



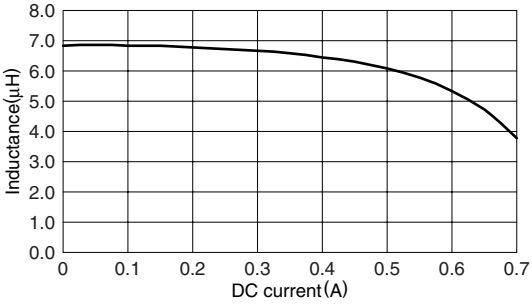
VLS2012ET-3R3M



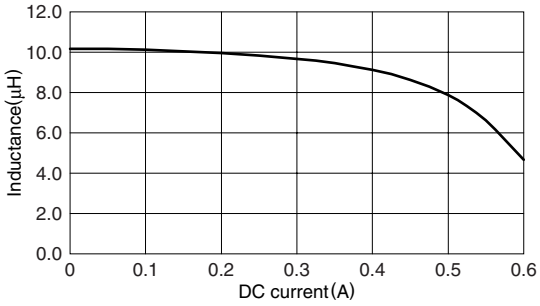
VLS2012ET-4R7M



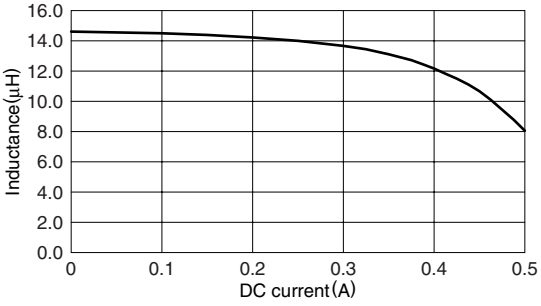
VLS2012ET-6R8M



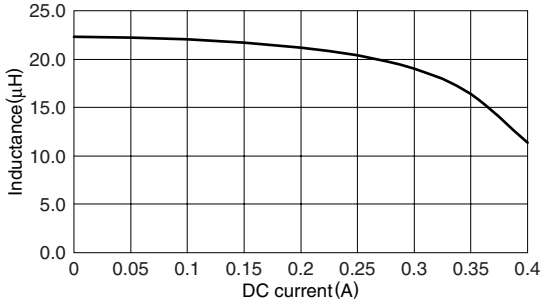
VLS2012ET-100M



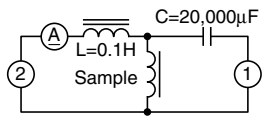
VLS2012ET-150M



VLS2012ET-220M



TEST CIRCUIT



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

TDK

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS252010E

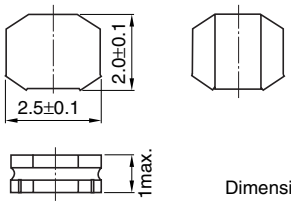
FEATURES

- Miniature size
  Mount area: 2.5×2mm
  Height: 1.0mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

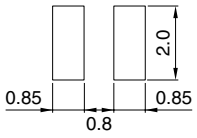
Cellular phones, DVCs, DSCs, PDAs, LCD displays,HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS252010ET-R47N	0.47	±30	1.0	0.046	0.038	2.50	2.80	2.65
VLS252010ET-R68N	0.68	±30	1.0	0.062	0.052	2.05	2.30	2.20
VLS252010ET-1R0N	1.0	±30	1.0	0.084	0.070	1.75	1.90	1.90
VLS252010ET-1R5N	1.5	±30	1.0	0.128	0.107	1.45	1.60	1.50
VLS252010ET-2R2M	2.2	±20	1.0	0.190	0.158	1.20	1.30	1.20
VLS252010ET-3R3M	3.3	±20	1.0	0.275	0.229	0.94	1.05	1.00
VLS252010ET-4R7M	4.7	±20	1.0	0.398	0.332	0.80	0.89	0.82
VLS252010ET-6R8M	6.8	±20	1.0	0.532	0.443	0.68	0.76	0.71
VLS252010ET-100M	10	±20	1.0	0.854	0.712	0.56	0.63	0.55

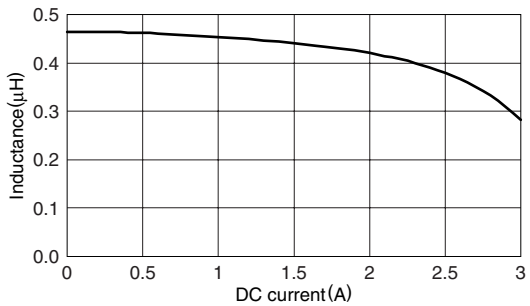
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

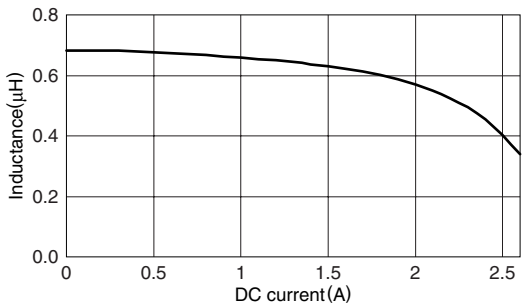
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS252010ET-R47N



VLS252010ET-R68N



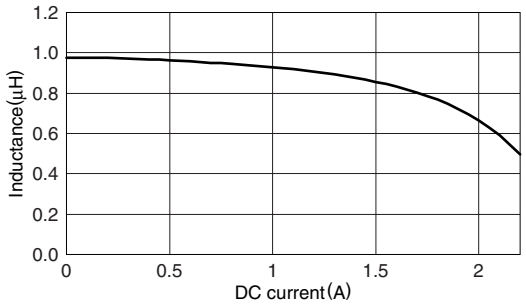
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

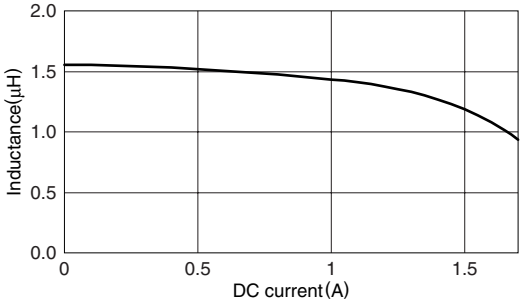
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

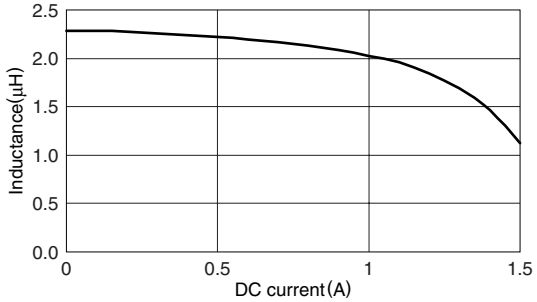
VLS252010ET-1R0N



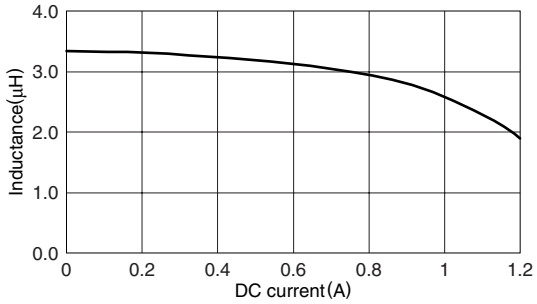
VLS252010ET-1R5N



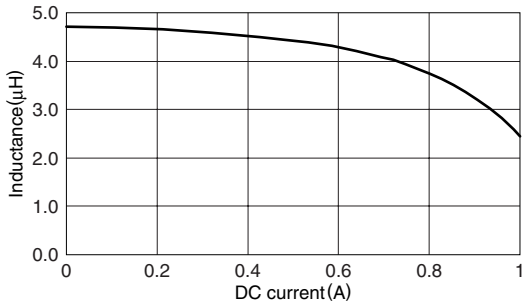
VLS252010ET-2R2M



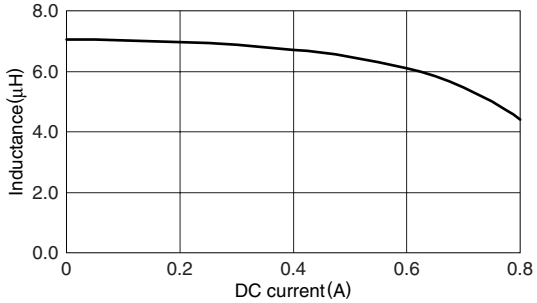
VLS252010ET-3R3M



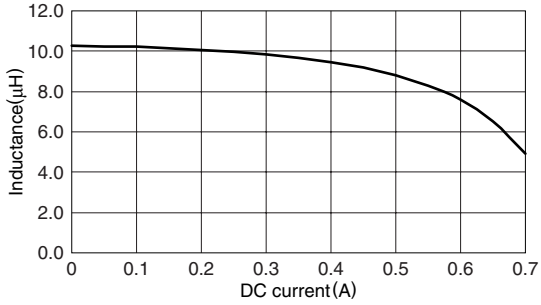
VLS252010ET-4R7M



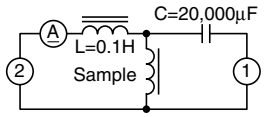
VLS252010ET-6R8M



VLS252010ET-100M



TEST CIRCUIT



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

TDK

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS252012E

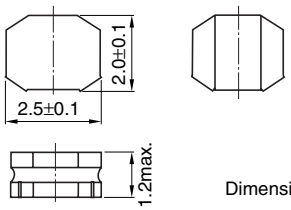
FEATURES

- Miniature size
  Mount area: 2.5×2mm
  Height: 1.2mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

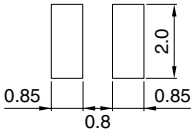
DVCs, DSCs, PDAs, LCD displays, cellular phones, HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS252012ET-R47N	0.47	±30	1.0	0.056	0.047	2.75	3.10	2.15
VLS252012ET-1R0N	1.0	±30	1.0	0.087	0.073	2.20	2.45	1.70
VLS252012ET-1R5N	1.5	±30	1.0	0.126	0.105	1.80	2.00	1.45
VLS252012ET-2R2M	2.2	±20	1.0	0.154	0.129	1.55	1.75	1.30
VLS252012ET-3R3M	3.3	±20	1.0	0.272	0.227	1.25	1.40	0.98
VLS252012ET-4R7M	4.7	±20	1.0	0.405	0.338	1.05	1.20	0.81
VLS252012ET-6R8M	6.8	±20	1.0	0.612	0.510	0.85	0.95	0.65
VLS252012ET-100M	10	±20	1.0	0.756	0.630	0.73	0.82	0.59

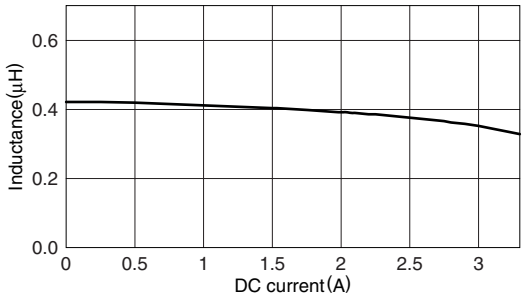
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

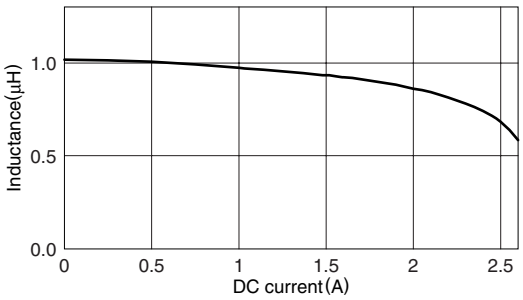
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS252012ET-R47N



VLS252012ET-1R0N



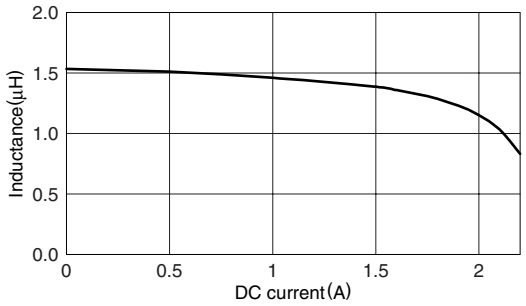
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

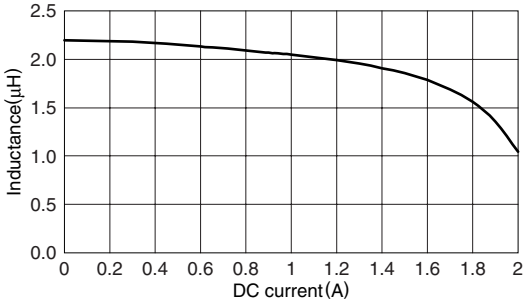
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

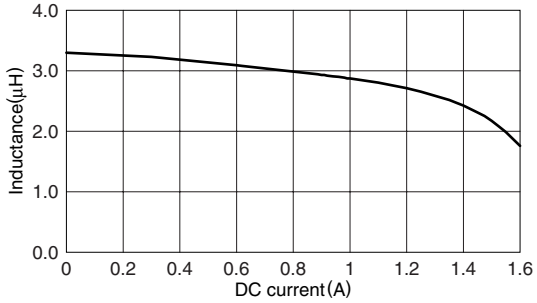
VLS252012ET-1R5N



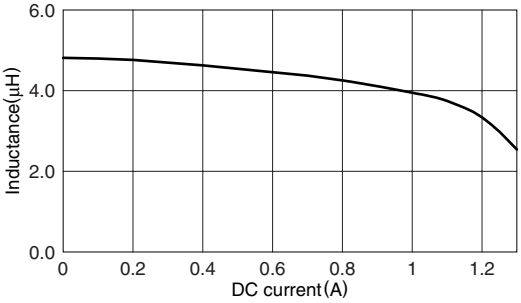
VLS252012ET-2R2M



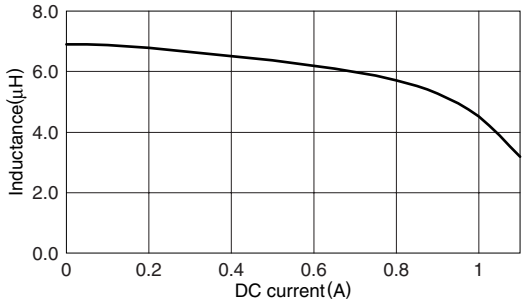
VLS252012ET-3R3M



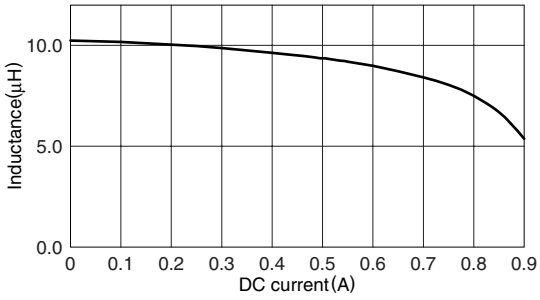
VLS252012ET-4R7M



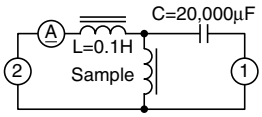
VLS252012ET-6R8M



VLS252012ET-100M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS252015E

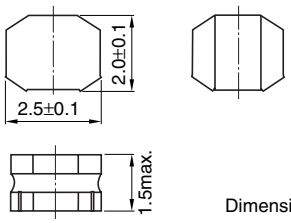
FEATURES

- Miniature size
  Mount area: 2.5×2mm
  Height: 1.5mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

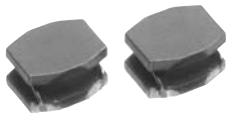
APPLICATIONS

DVCs, DSCs, PDAs, LCD displays, cellular phones, HDDs, etc.

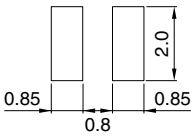
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS252015ET-1R0N	1.0	±30	1.0	0.082	0.068	1.95	2.20	1.75
VLS252015ET-1R5N	1.5	±30	1.0	0.120	0.100	1.75	1.95	1.45
VLS252015ET-2R2M	2.2	±20	1.0	0.160	0.133	1.50	1.70	1.25
VLS252015ET-3R3M	3.3	±20	1.0	0.219	0.182	1.20	1.35	1.05
VLS252015ET-4R7M	4.7	±20	1.0	0.318	0.265	1.00	1.15	0.89
VLS252015ET-6R8M	6.8	±20	1.0	0.480	0.400	0.85	0.95	0.73
VLS252015ET-100M	10	±20	1.0	0.588	0.490	0.72	0.80	0.66

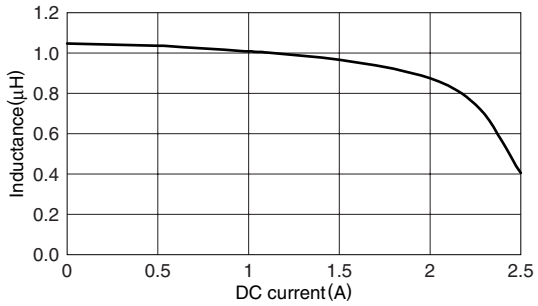
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

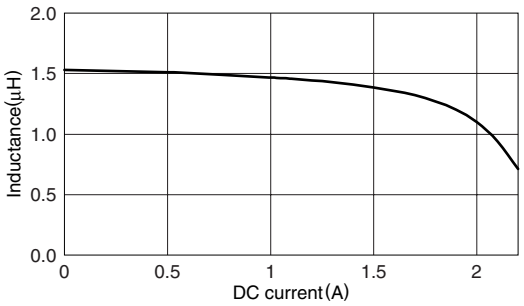
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS252015ET-1R0N



VLS252015ET-1R5N



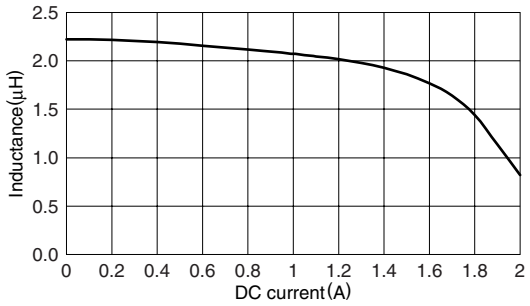
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

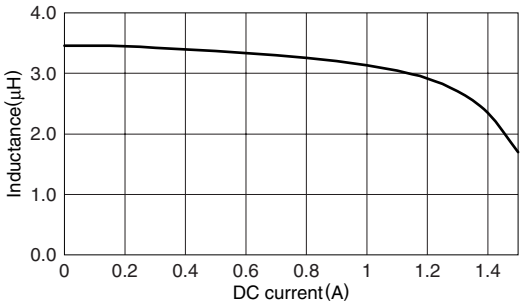
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

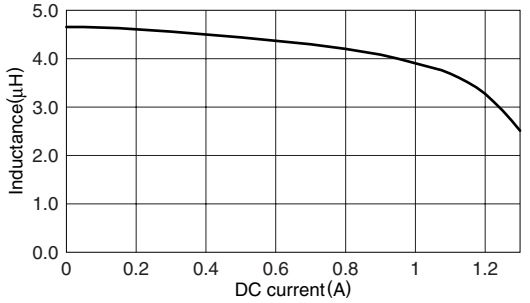
VLS252015ET-2R2M



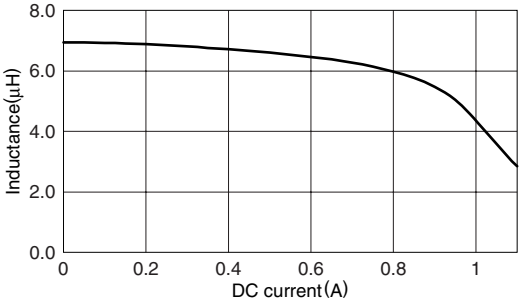
VLS252015ET-3R3M



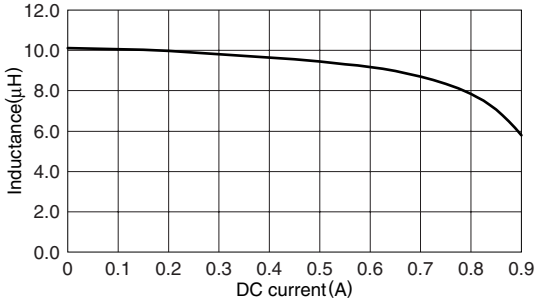
VLS252015ET-4R7M



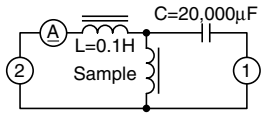
VLS252015ET-6R8M



VLS252015ET-100M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS3010E

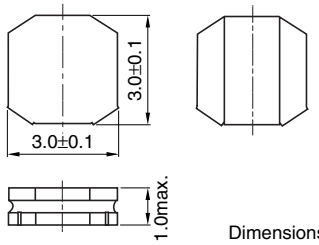
FEATURES

- Miniature size
  Mount area: 3×3mm
  Height: 1.0mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

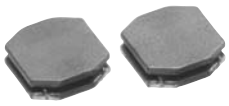
APPLICATIONS

Cellular phones, DVCs, DSCs, PDAs, LCD displays, HDDs, etc.

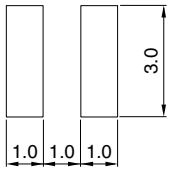
SHAPES AND DIMENSIONS



Dimensions in mm



RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS3010ET-1R0N	1.0	±30	1.0	0.072	0.060	1.60	1.80	2.10
VLS3010ET-1R5N	1.5	±30	1.0	0.085	0.071	1.35	1.50	1.90
VLS3010ET-2R2M	2.2	±20	1.0	0.116	0.097	1.20	1.30	1.70
VLS3010ET-3R3M	3.3	±20	1.0	0.156	0.130	1.00	1.10	1.50
VLS3010ET-4R7M	4.7	±20	1.0	0.204	0.170	0.81	0.90	1.30
VLS3010ET-6R8M	6.8	±20	1.0	0.312	0.260	0.69	0.77	1.00
VLS3010ET-100M	10	±20	1.0	0.468	0.390	0.56	0.63	0.80
VLS3010ET-150M	15	±20	1.0	0.612	0.510	0.48	0.54	0.70
VLS3010ET-220M	22	±20	1.0	0.900	0.750	0.38	0.43	0.60

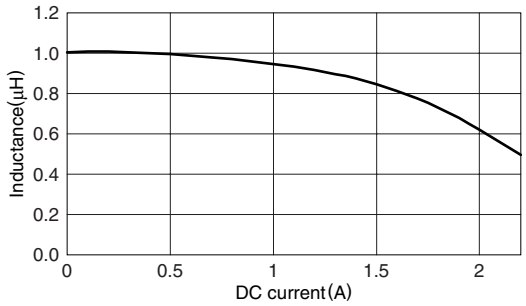
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

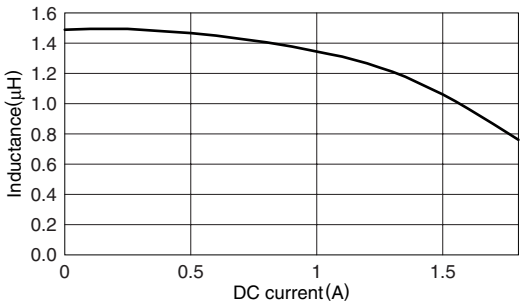
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS3010ET-1R0N



VLS3010ET-1R5N



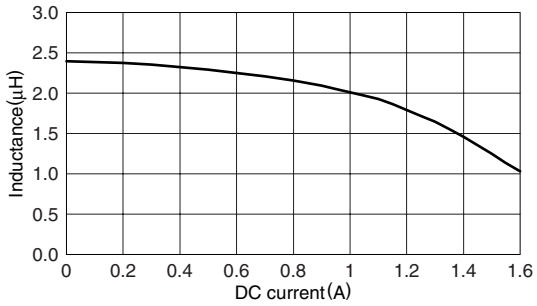
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

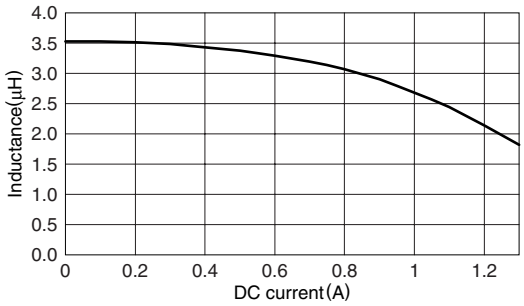
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

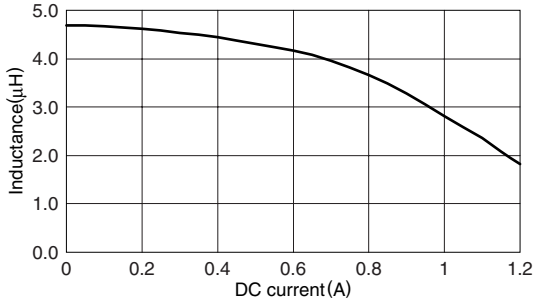
VLS3010ET-2R2M



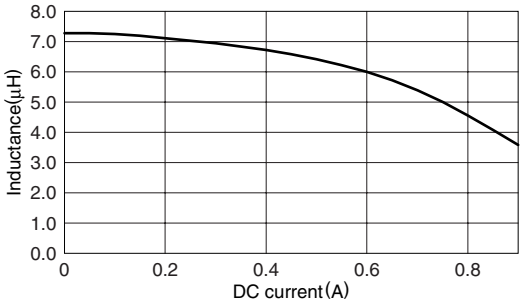
VLS3010ET-3R3M



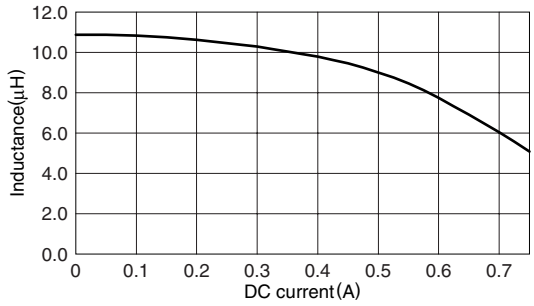
VLS3010ET-4R7M



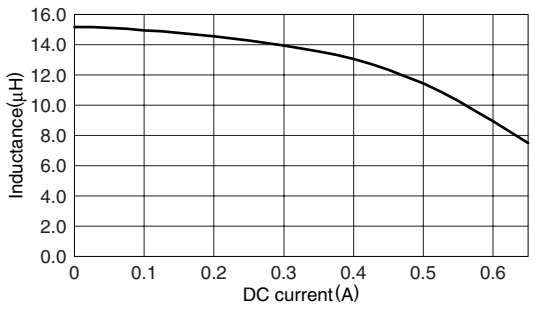
VLS3010ET-6R8M



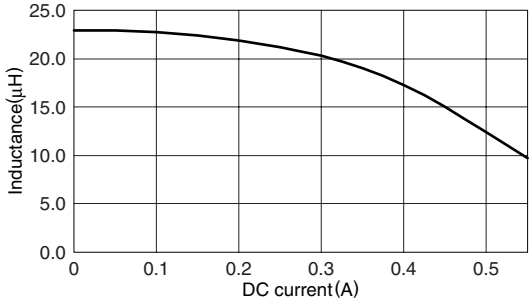
VLS3010ET-100M



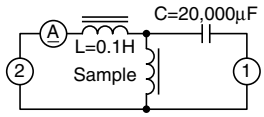
VLS3010ET-150M



VLS3010ET-220M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS3012E

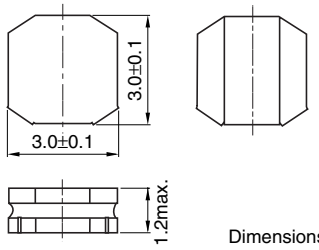
FEATURES

- Miniature size
  Mount area: 3×3mm
  Height: 1.2mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

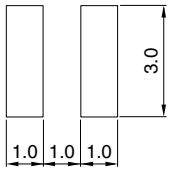
DSCs, DVCs, PDAs, portable game devices, cellular phones, LCD displays, HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS3012ET-1R0N	1.0	±30	1.0	0.068	0.056	1.90	2.15	2.00
VLS3012ET-1R5N	1.5	±30	1.0	0.076	0.063	1.50	1.70	1.85
VLS3012ET-2R2M	2.2	±20	1.0	0.096	0.080	1.35	1.50	1.70
VLS3012ET-3R3M	3.3	±20	1.0	0.120	0.100	1.05	1.20	1.55
VLS3012ET-4R7M	4.7	±20	1.0	0.156	0.130	0.95	1.05	1.30
VLS3012ET-6R8M	6.8	±20	1.0	0.228	0.190	0.81	0.90	1.05
VLS3012ET-100M	10	±20	1.0	0.336	0.280	0.64	0.76	0.89
VLS3012ET-150M	15	±20	1.0	0.516	0.430	0.55	0.62	0.74
VLS3012ET-220M	22	±20	1.0	0.756	0.630	0.44	0.49	0.61
VLS3012ET-330M	33	±20	1.0	1.248	1.040	0.37	0.41	0.48
VLS3012ET-470M	47	±20	1.0	1.500	1.250	0.31	0.35	0.44

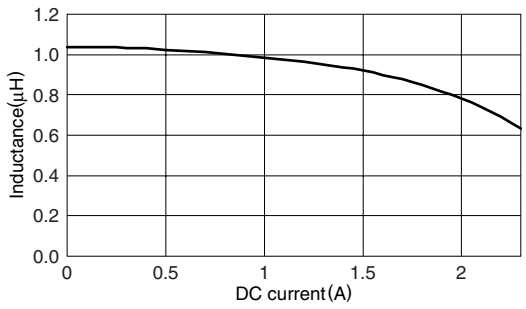
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

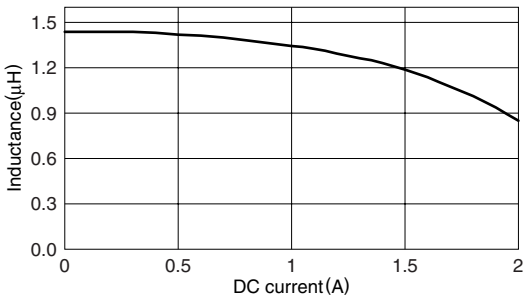
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS3012ET-1R0N



VLS3012ET-1R5N



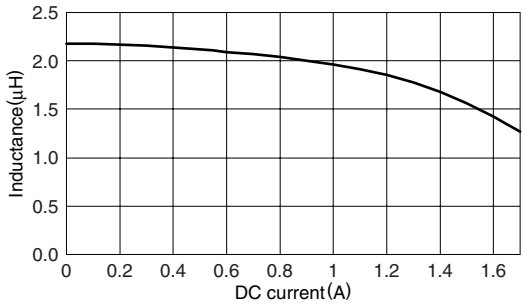
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

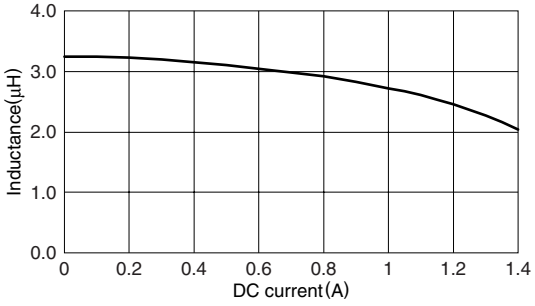
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

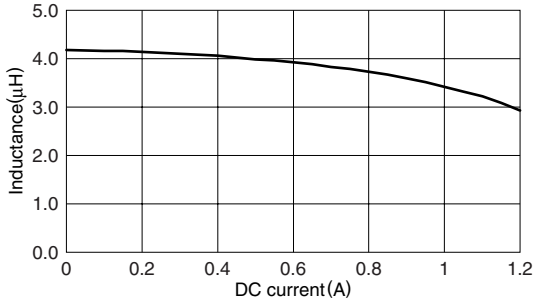
VLS3012ET-2R2M



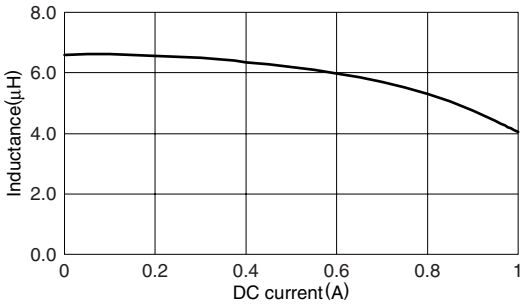
VLS3012ET-3R3M



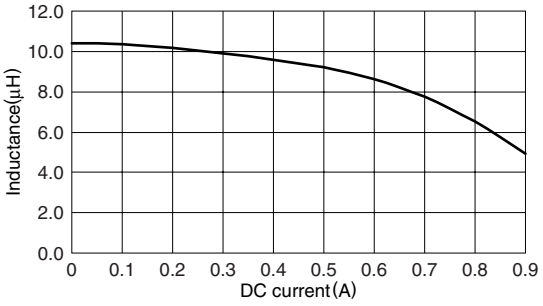
VLS3012ET-4R7M



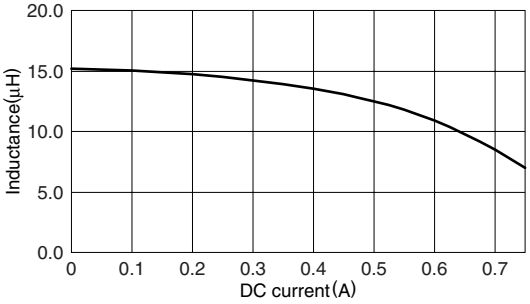
VLS3012ET-6R8M



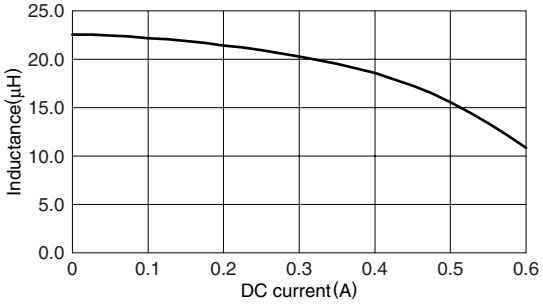
VLS3012ET-100M



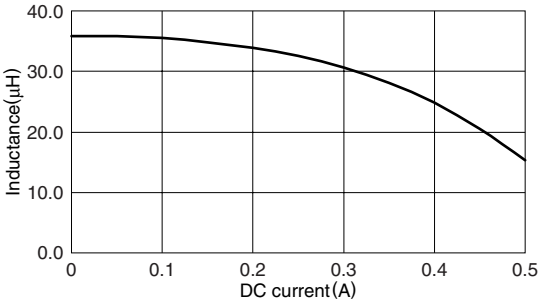
VLS3012ET-150M



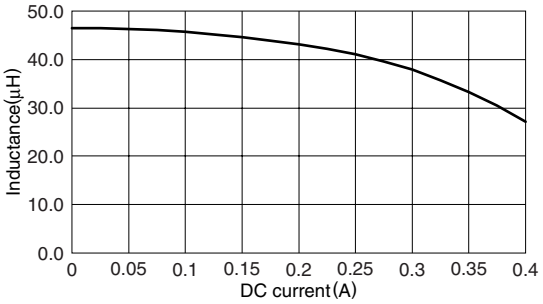
VLS3012ET-220M



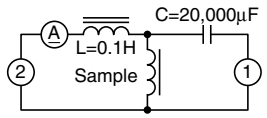
VLS3012ET-330M



VLS3012ET-470M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

VLS Series VLS3015E

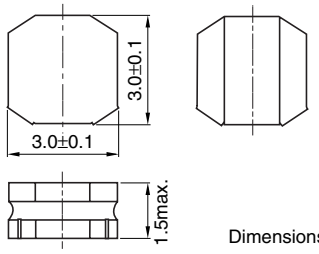
FEATURES

- Miniature size
  Mount area: 3×3mm
  Height: 1.5mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

APPLICATIONS

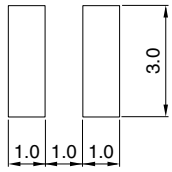
DSCs, DVCs, PDAs, portable game devices, cellular phones, LCD displays, HDDs, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS3015ET-1R0N	1.0	±30	1.0	0.058	0.048	2.00	2.20	2.10
VLS3015ET-1R5N	1.5	±30	1.0	0.075	0.062	1.50	1.70	1.85
VLS3015ET-2R2M	2.2	±20	1.0	0.084	0.070	1.35	1.50	1.75
VLS3015ET-3R3M	3.3	±20	1.0	0.112	0.093	1.15	1.30	1.50
VLS3015ET-4R7M	4.7	±20	1.0	0.136	0.113	1.00	1.10	1.35
VLS3015ET-6R8M	6.8	±20	1.0	0.216	0.180	0.92	1.00	1.05
VLS3015ET-100M	10	±20	1.0	0.288	0.240	0.70	0.78	0.94
VLS3015ET-150M	15	±20	1.0	0.456	0.380	0.58	0.65	0.75
VLS3015ET-220M	22	±20	1.0	0.660	0.550	0.48	0.54	0.62
VLS3015ET-330M	33	±20	1.0	0.984	0.820	0.39	0.43	0.51
VLS3015ET-470M	47	±20	1.0	1.500	1.250	0.32	0.35	0.41

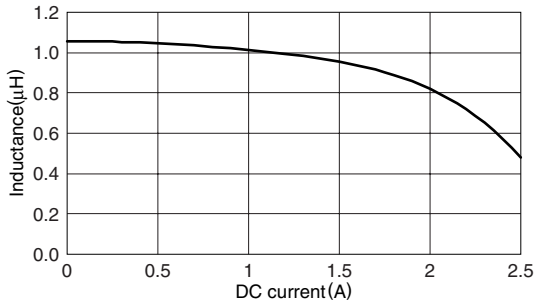
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

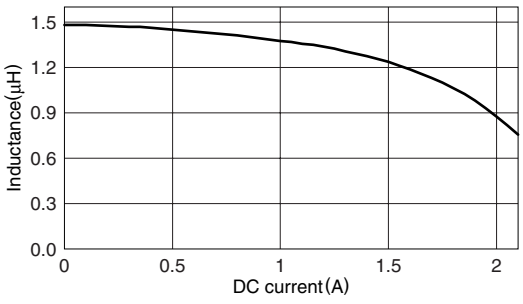
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS3015ET-1R0N



VLS3015ET-1R5N



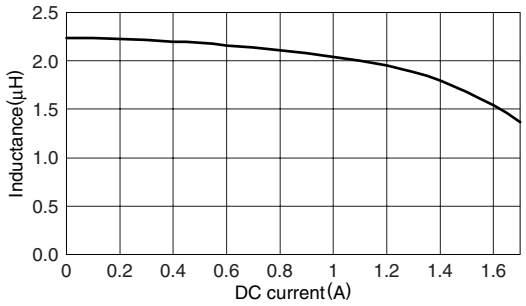
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

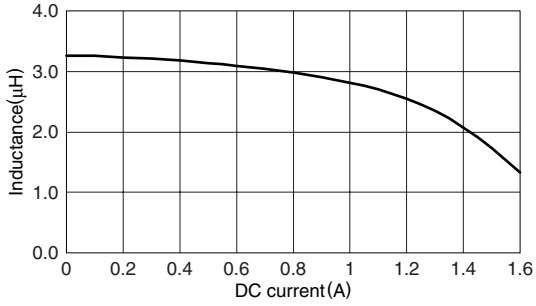
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

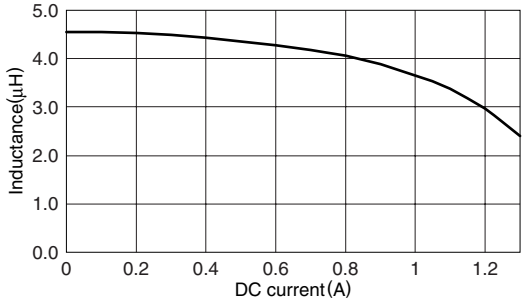
VLS3015ET-2R2M



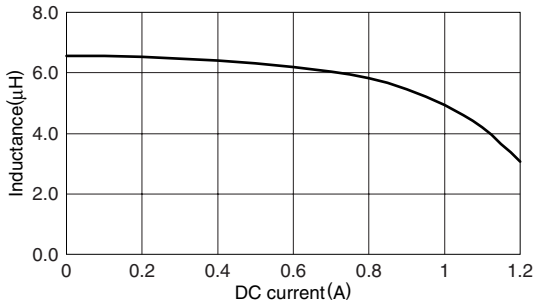
VLS3015ET-3R3M



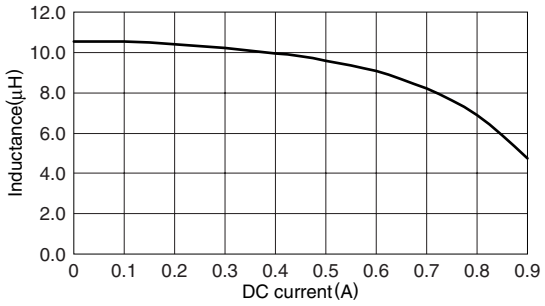
VLS3015ET-4R7M



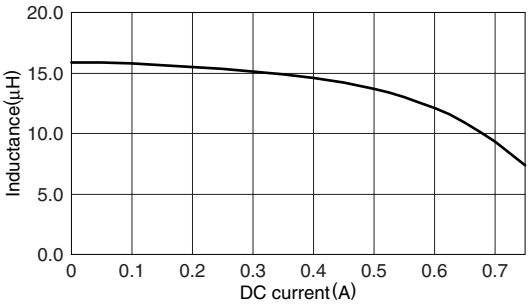
VLS3015ET-6R8M



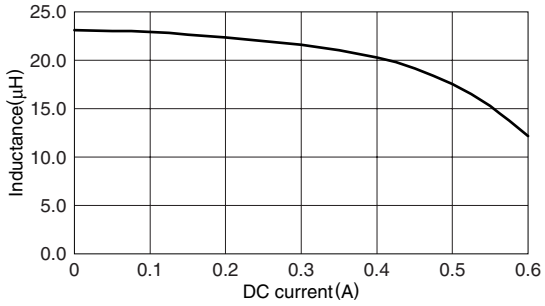
VLS3015ET-100M



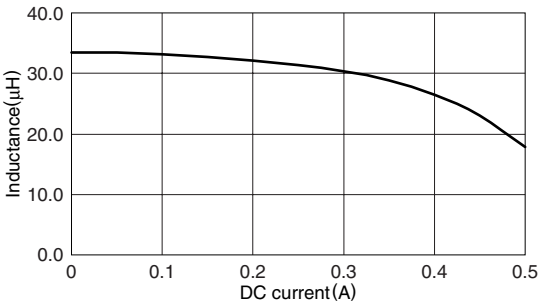
VLS3015ET-150M



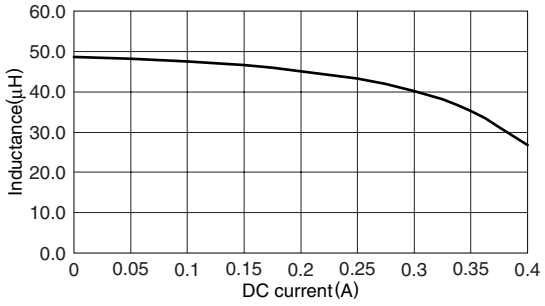
VLS3015ET-220M



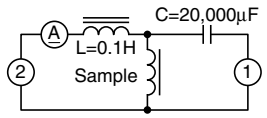
VLS3015ET-330M



VLS3015ET-470M



TEST CIRCUIT



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

Inductors for Power Circuits
Wound/STD • Magnetic Shielded

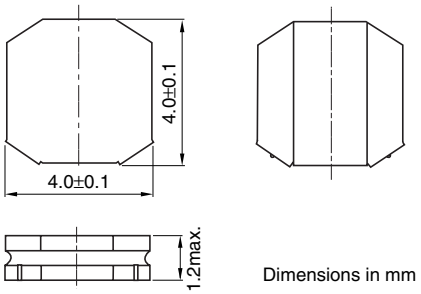
Conformity to RoHS Directive

VLS Series VLS4012E

FEATURES

- Miniature size
  Mount area: 4×4mm
  Height: 1.2mm max.
- Generic use for portable DC to DC converter line.
- High magnetic shield construction should actualize high resolution for EMC protection.
- Available for automatic mounting in tape and real package.
- The products do not contain lead and support lead-free soldering.

SHAPES AND DIMENSIONS

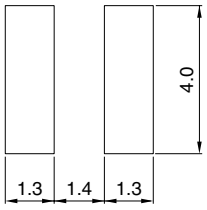


Dimensions in mm

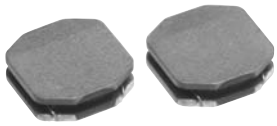
APPLICATIONS

Cellular phones, DVCs, DSCs, PDAs, LCD displays, HDDs, etc.

RECOMMENDED PC BOARD PATTERN



Dimensions in mm



ELECTRICAL CHARACTERISTICS

Part No.	Inductance (µH)	Inductance tolerance (%)	Test frequency (MHz)	DC resistance (Ω)		Rated current(A)*		
						Based on inductance change		Based on temperature rise
				max.	typ.	max.	typ.	typ.
VLS4012ET-1R0N	1.0	±30	1.0	0.060	0.050	2.50	2.80	2.65
VLS4012ET-1R5N	1.5	±30	1.0	0.072	0.060	2.10	2.30	2.45
VLS4012ET-2R2M	2.2	±20	1.0	0.081	0.067	1.70	1.90	2.20
VLS4012ET-3R3M	3.3	±20	1.0	0.102	0.085	1.40	1.60	2.00
VLS4012ET-4R7M	4.7	±20	1.0	0.118	0.098	1.20	1.40	1.90
VLS4012ET-6R8M	6.8	±20	1.0	0.156	0.130	1.00	1.20	1.60
VLS4012ET-100M	10	±20	1.0	0.228	0.190	0.89	0.99	1.33
VLS4012ET-150M	15	±20	1.0	0.372	0.310	0.70	0.78	1.05
VLS4012ET-220M	22	±20	1.0	0.468	0.390	0.63	0.70	0.95
VLS4012ET-330M	33	±20	1.0	0.804	0.670	0.47	0.53	0.70
VLS4012ET-470M	47	±20	1.0	1.020	0.850	0.41	0.46	0.61

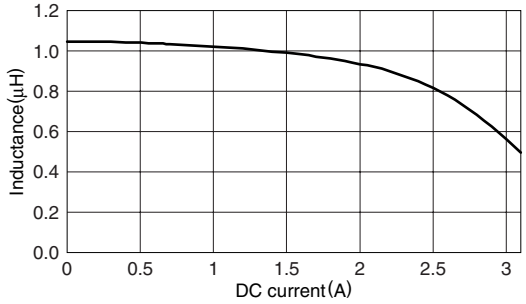
* Rated current: Value obtained when current flows and the temperature has risen to 40°C or when DC current flows and the nominal value of inductance has fallen by 30%, whichever is smaller.

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

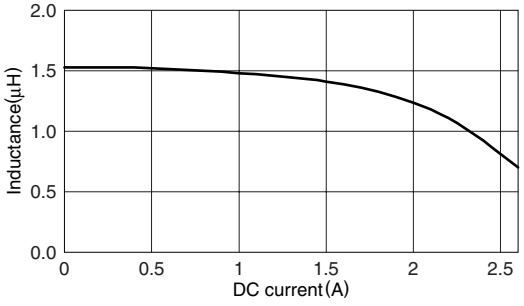
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

VLS4012ET-1R0N



VLS4012ET-1R5N



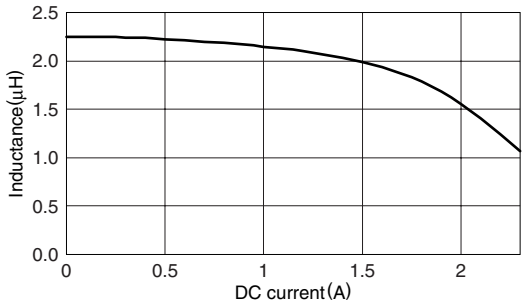
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

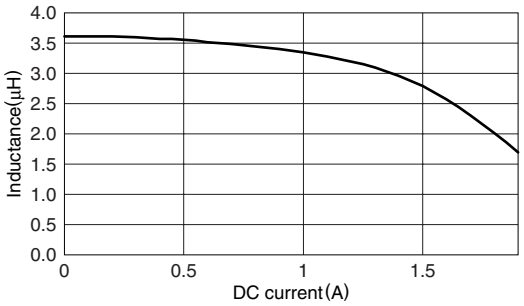
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS

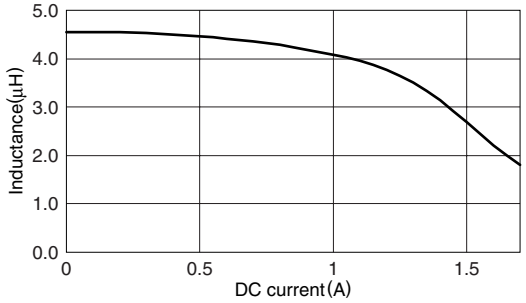
VLS4012ET-2R2M



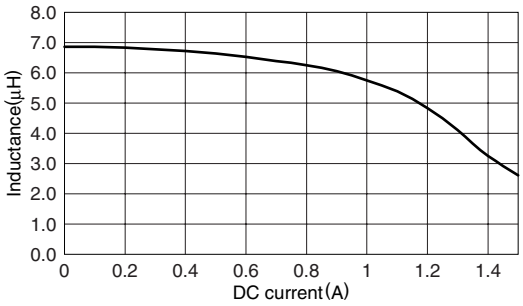
VLS4012ET-3R3M



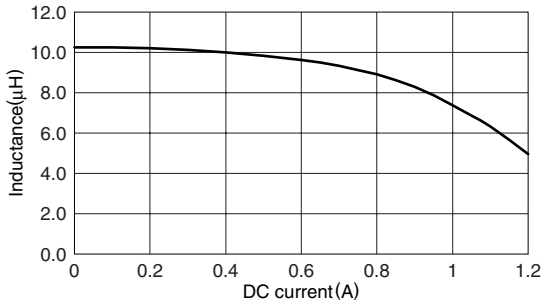
VLS4012ET-4R7M



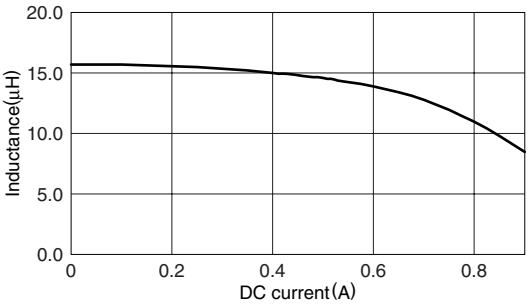
VLS4012ET-6R8M



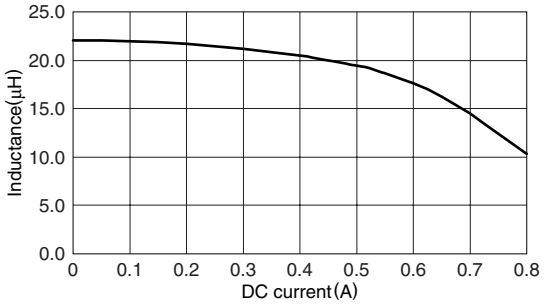
VLS4012ET-100M



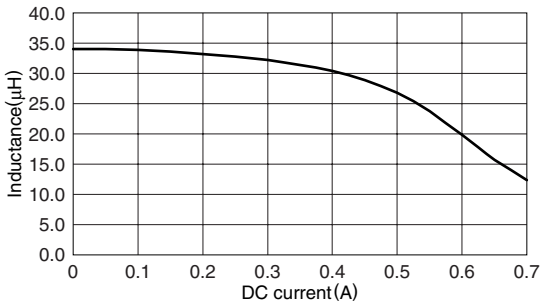
VLS4012ET-150M



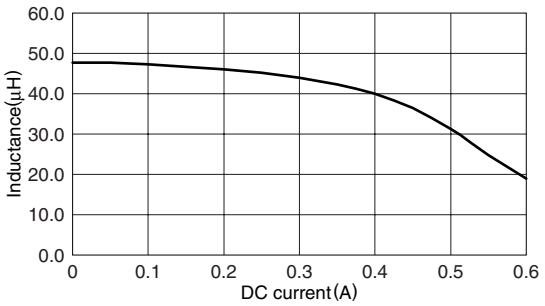
VLS4012ET-220M



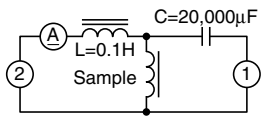
VLS4012ET-330M



VLS4012ET-470M



TEST CIRCUIT



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