

Inductors for Power Circuits

Wound/STD • magnetic shielded

CLF series

Type: CLF7045 (6.9x7.2 mm)
 CLF10040 (9.7x10.0 mm)

Issue date: September 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

CLF Series CLF7045

This product offers superb EMC handling enabled by the construction of a high magnetic shield.

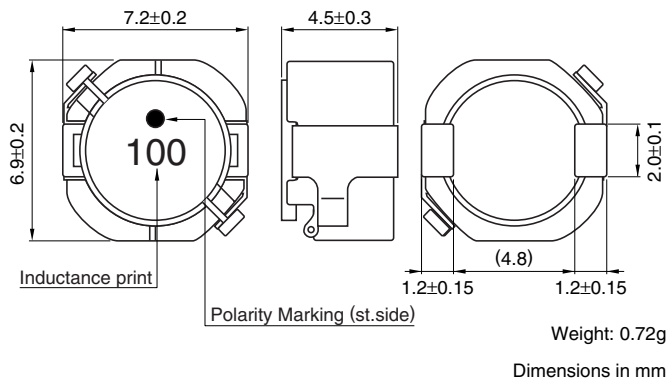
FEATURES

- Miniature size
Mount area: 6.9×7.2mm
Height: 4.5±0.3mm
- 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

LCD-TVs, PDP-TVs, LCD displays, BD recorders, DVD recorders, STB, etc.

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERN



CIRCUIT DIAGRAM



PRODUCT IDENTIFICATION

CLF	7045	T	○○○	□
(1)	(2)	(3)	(4)	(5)

(1) Series name

(2) Dimensions □ × H mm

(3) Packaging style

T	Taping (Embossed carrier tape)
---	-----------------------------------

(4) Inductance value

1R0	1.0μH
100	10μH
101	100μH

(5) Inductance tolerance

M	±20%
N	±30%

PACKAGING STYLE AND QUANTITIES

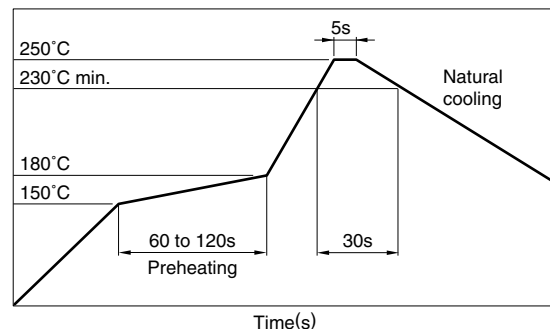
Packaging style	Quantity
Taping	1000 pieces/reel

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±10°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.

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μ H)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance (Ω)	Rated current(A)	
					Idc1*	Idc2**
CLF7045T-1R0N	1.0	± 30	100	$9.6m \pm 30\%$	8.9	5.2
CLF7045T-1R5N	1.5	± 30	100	$11.0m \pm 30\%$	7.3	4.9
CLF7045T-2R2N	2.2	± 30	100	$14.6m \pm 30\%$	5.5	4.3
CLF7045T-3R3N	3.3	± 30	100	$16.4m \pm 30\%$	5.0	4.1
CLF7045T-4R7N	4.7	± 30	100	$20m \pm 30\%$	4.1	3.6
CLF7045T-6R8N	6.8	± 30	100	$27m \pm 30\%$	3.3	3.0
CLF7045T-100M	10	± 20	100	$38m \pm 20\%$	2.7	2.5
CLF7045T-150M	15	± 20	100	$51m \pm 20\%$	2.3	2.1
CLF7045T-220M	22	± 20	100	$69m \pm 20\%$	1.9	1.8
CLF7045T-330M	33	± 20	100	$0.11 \pm 20\%$	1.55	1.40
CLF7045T-470M	47	± 20	100	$0.15 \pm 20\%$	1.30	1.20
CLF7045T-680M	68	± 20	100	$0.21 \pm 20\%$	1.10	0.95
CLF7045T-101M	100	± 20	100	$0.33 \pm 20\%$	0.90	0.75
CLF7045T-151M	150	± 20	100	$0.48 \pm 20\%$	0.67	0.61
CLF7045T-221M	220	± 20	100	$0.66 \pm 20\%$	0.62	0.52
CLF7045T-331M	330	± 20	100	$1.03 \pm 20\%$	0.49	0.42
CLF7045T-471M	470	± 20	100	$1.42 \pm 20\%$	0.43	0.37

* Idc1: Current based on inductance variation(Current when inductance decreases by 10% of the initial value)

** Idc2: Current based on increasing product temperature(Current when temperature of the product reaches +30°C)

*** Between Idc1 and Idc2, the smaller of the two will be made the rated current.

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

• Test equipment

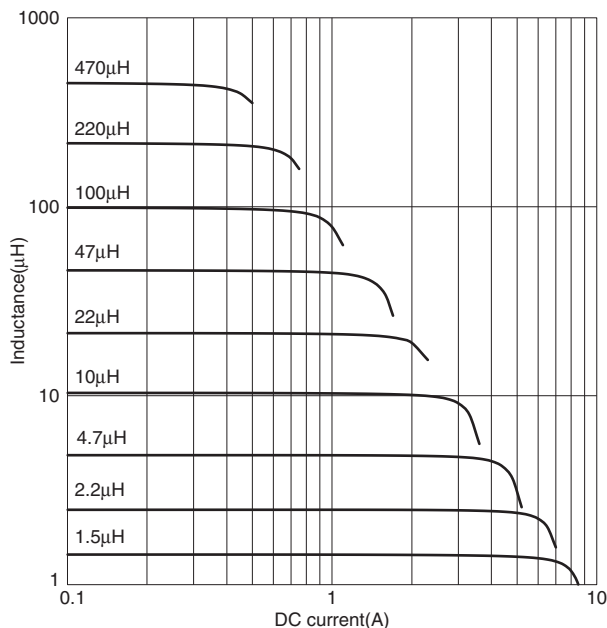
Inductance: 4285A PRECISION LCR METER, HP or equivalent

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

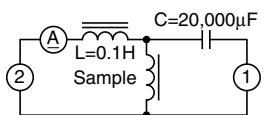
Rated current: 4285A PRECISION LCR METER, HP with 42841A BIAS CURRENT SOURCE, HP/42842C TEST FIXTURE, HP or equivalent

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS



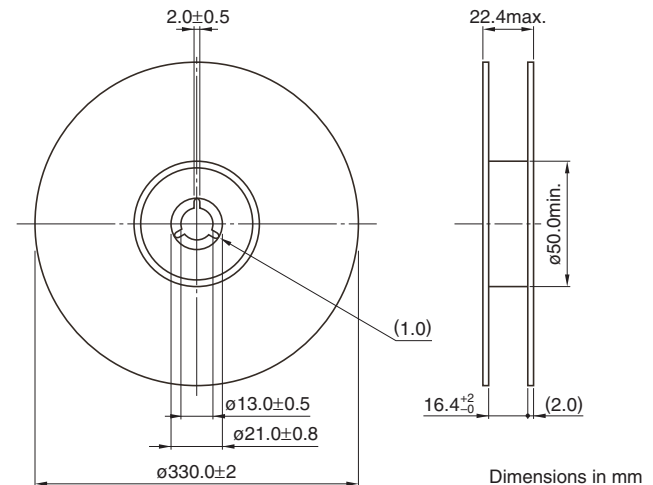
TEST CIRCUIT



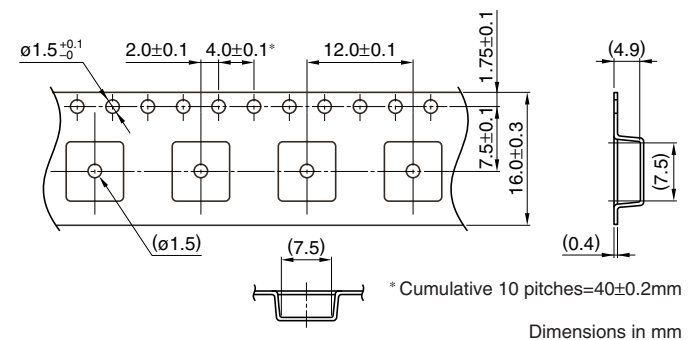
1: LCR meter 4285A $f=100\text{kHz}$
2: DC constant current source

PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS



Inductors for Power Circuits

Wound/STD • Magnetic Shielded

Conformity to RoHS Directive

CLF Series CLF10040

This product offers superb EMC handling enabled by the construction of a high magnetic shield.

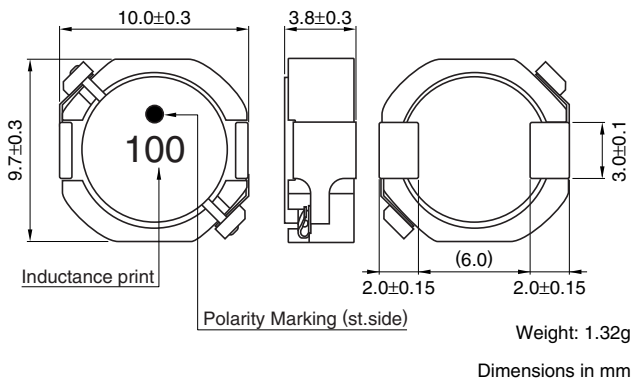
FEATURES

- Miniature size
Mount area: $9.7 \times 10 \text{ mm}$
Height: $3.8 \pm 0.3 \text{ mm}$
- 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.

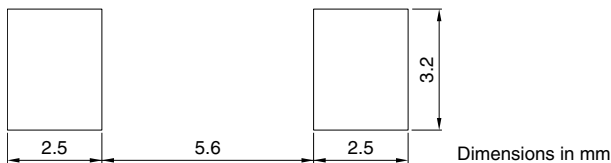
APPLICATIONS

LCD-TVs, PDP-TVs, LCD displays, DVD recorders, etc.

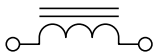
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERN



CIRCUIT DIAGRAM



PRODUCT IDENTIFICATION

CLF	10040	T	○○○	□
(1)	(2)	(3)	(4)	(5)

(1) Series name

(2) Dimensions □ × H mm

(3) Packaging style

T	Taping (Embossed carrier tape)
---	-----------------------------------

(4) Inductance value

1R0	1.0μH
100	10μH
101	100μH

(5) Inductance tolerance

M	±20%
N	±30%

PACKAGING STYLE AND QUANTITIES

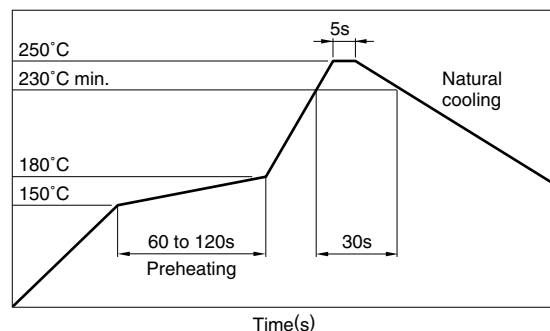
Packaging style	Quantity
Taping	800 pieces/reel

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 $350 \pm 10^{\circ}\text{C}$. 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.

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μ H)	Inductance tolerance(%)	Test frequency (kHz)	DC resistance (Ω)	Rated current(A)	
					I _{dc1} *	I _{dc2} **
CLF10040T-1R0N	1.0	±30	100	5.7m±30%	12.0	6.3
CLF10040T-1R5N	1.5	±30	100	7.1m±30%	10.6	5.8
CLF10040T-2R2N	2.2	±30	100	9.7m±30%	7.5	5.0
CLF10040T-3R3N	3.3	±30	100	11.0m±30%	6.6	4.8
CLF10040T-4R7N	4.7	±30	100	14.5m±30%	5.4	4.2
CLF10040T-6R8N	6.8	±30	100	18.5m±30%	4.8	3.7
CLF10040T-100M	10	±20	100	26m±20%	4.0	3.3
CLF10040T-150M	15	±20	100	40m±20%	3.2	2.5
CLF10040T-220M	22	±20	100	55m±20%	2.7	2.2
CLF10040T-330M	33	±20	100	80m±20%	2.2	1.7
CLF10040T-470M	47	±20	100	125m±20%	1.9	1.3
CLF10040T-680M	68	±20	100	0.18±20%	1.6	1.1
CLF10040T-101M	100	±20	100	0.24±20%	1.3	1.0
CLF10040T-151M	150	±20	100	0.38±20%	1.0	0.8
CLF10040T-221M	220	±20	100	0.52±20%	0.88	0.70
CLF10040T-331M	330	±20	100	0.86±20%	0.70	0.53
CLF10040T-471M	470	±20	100	1.21±20%	0.56	0.44

* I_{dc1}: Current based on inductance variation(Current when inductance decreases by 10% of the initial value)

** I_{dc2}: Current based on increasing product temperature(Current when temperature of the product reaches +30°C)

*** Between I_{dc1} and I_{dc2}, the smaller of the two will be made the rated current.

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

• Test equipment

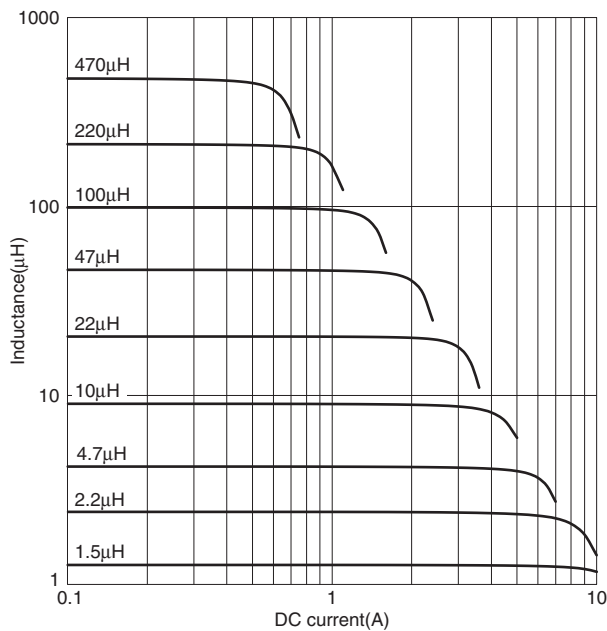
Inductance: 4285A PRECISION LCR METER, HP or equivalent

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

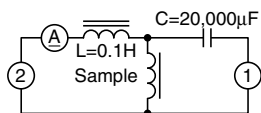
Rated current: 4285A PRECISION LCR METER, HP with 42841A BIAS CURRENT SOURCE, HP/42842C TEST FIXTURE, HP or equivalent

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS



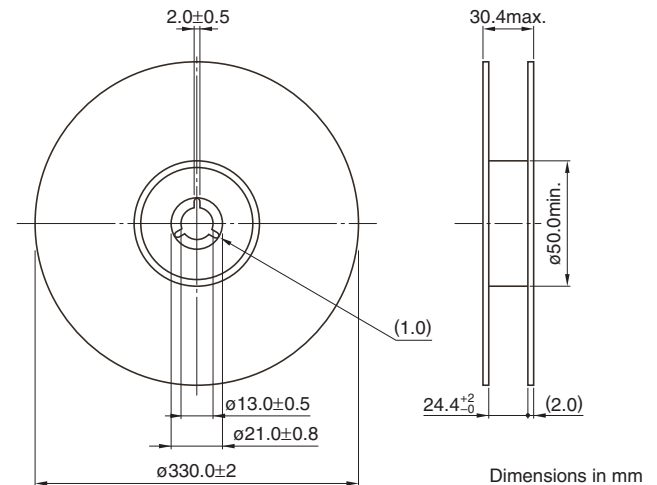
TEST CIRCUIT



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

PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS

