

# Inductors for Decoupling Circuits

## Wound/For Current

### NLCV/NLC series

Type:	NLCV25	2520[1008 inch]*
	NLCV32	3225[1210 inch]
	NLCV25T-R	2520[1008 inch]
	NLCV32T-R	3225[1210 inch]
	NLC453232	4532[1812 inch]
	NLC565050	5650[2220 inch]
	* Dimensions Code JIS[EIA]	

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.

# Inductors for Decoupling Circuits

## Wound/For Current

Conformity to RoHS Directive

### NLCV Series NLCV25

#### FEATURES

- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.
- Lead-free material is used for the plating on the terminal
- The electrical characteristics, reliability, shape and pad shape are the same as the previous NL series.
- The product uses metal terminals, which realize excellent connection reliability.
- Highly heat resistant thermoplastic resin is used to form the exterior package.
- From 1 $\mu$ H to 33 $\mu$ H, all of the products are available in the E-6 series.
- This product is in compliance with the RoHS Directive. Other products with specifications that do not include exemption regulations are also available.

#### APPLICATIONS

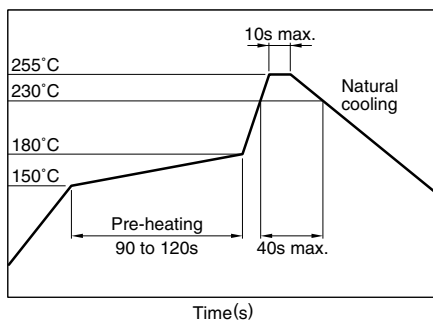
- Audio-visual equipment including TVs, VCRs and digital cameras.
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Electronic equipment used in onboard automobile equipment including car audio and ECU systems.
- Other electronic equipment including HDDs and ODDs.

#### SPECIFICATIONS

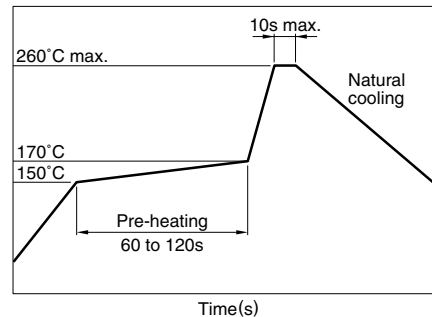
Operating temperature range	-40 to +105°C [Including self-temperature rise]
Storage temperature range	-40 to +105°C

#### RECOMMENDED SOLDERING CONDITIONS

##### REFLOW SOLDERING



#### FLOW SOLDERING



#### IRON SOLDERING

Tip temperature	300 to 350°C
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: approx.1mm

- Based on the above conditions, use a maximum product temperature of 260°C and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

#### PRODUCT IDENTIFICATION

NLCV	25	T-	2R2	M	-	PF
(1)	(2)	(3)	(4)	(5)	(6)	

(1) Series name

(2) Dimensions

25	2.5×2.0×1.8mm (L×W×T)
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(3) Packaging style

T	Taping (reel)
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(4) Inductance value

1R0	1 $\mu$ H
220	22 $\mu$ H

(5) Inductance tolerance

K	±10%
M	±20%

(6) Lead-free compatible product

PF	Conformity to RoHS directive, exemption regulations apply
EF	Conformity to RoHS directive

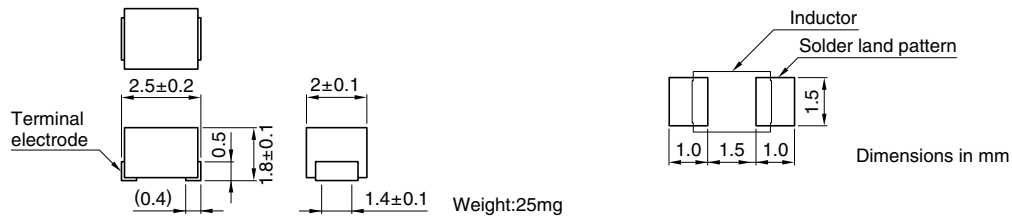
#### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	2000 pieces/reel

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Inductance(μH)	Inductance tolerance	Q ref.	Test frequency L,Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)±30%	Rated current*1 (mA)max.	Part No.
1	±20%	20	7.96	200	0.34	475	NLCV25T-1R0M-□*2
1.5	±20%	20	7.96	165	0.42	435	NLCV25T-1R5M-□
2.2	±20%	20	7.96	95	0.5	390	NLCV25T-2R2M-□
3.3	±20%	20	7.96	55	0.65	340	NLCV25T-3R3M-□
4.7	±20%	20	7.96	43	0.8	285	NLCV25T-4R7M-□
6.8	±20%	20	7.96	39	1	275	NLCV25T-6R8M-□
10	±10%	30	2.52	32	1.69	210	NLCV25T-100K-□
15	±10%	30	2.52	21	2.2	175	NLCV25T-150K-□
22	±10%	30	2.52	18	2.8	160	NLCV25T-220K-□
33	±10%	30	2.52	16	4.2	120	NLCV25T-330K-□

\*1 Rated current: Value obtained when current flows and the temperature has risen to 20°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

\*2 □: Please specify lead-free compatible product, PF (Conformity to RoHS directive, exemption regulations apply) or EF (Conformity to RoHS directive)

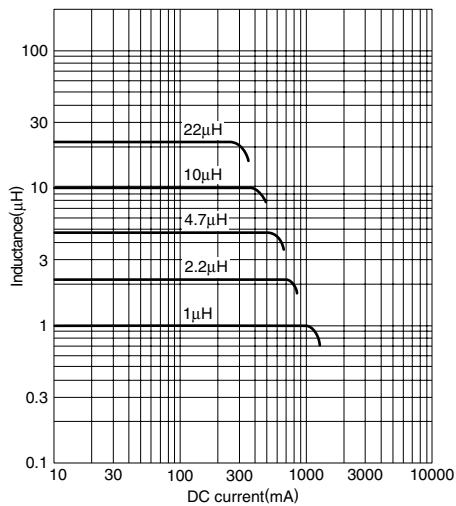
• Test equipment L, Q: HP4194A IMPEDANCE/GAIN PHASE ANALYZER+HP16085A+HP16093 B+TF-1

SRF: HP8753C NETWORK ANALYZER

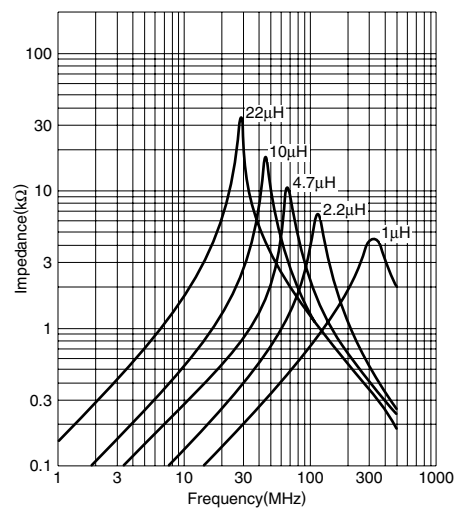
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER

## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



# Inductors for Decoupling Circuits

## Wound/For Current

Conformity to RoHS Directive

### NLCV Series NLCV32

#### FEATURES

- This is a renewed version of NLC322522.
- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.
- Lead-free material is used for the plating on the terminal
- The electrical characteristics, reliability, shape and pad shape are the same as the previous NL series.
- The product uses metal terminals, which realize excellent connection reliability.
- Highly heat resistant thermoplastic resin is used to form the exterior package.
- From 1.0 $\mu$ H to 330 $\mu$ H, all of the products are available.
- This product is in compliance with the RoHS Directive. Other products with specifications that do not include exemption regulations are also available.

#### APPLICATIONS

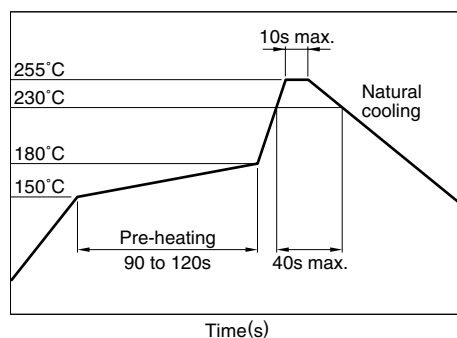
- Audio-visual equipment including TVs, VCRs and digital cameras.
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Electronic equipment used in onboard automobile equipment including car audio and ECU systems.
- Other electronic equipment including HDDs and ODDs.

#### SPECIFICATIONS

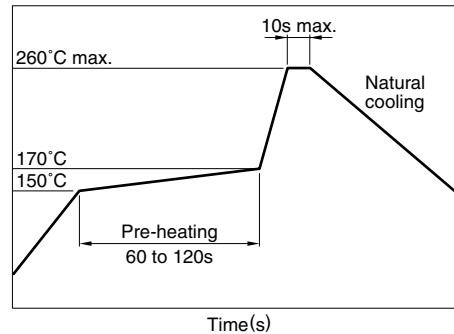
Operating temperature range	-40 to +105°C [Including self-temperature rise]
Storage temperature range	-40 to +105°C

#### RECOMMENDED SOLDERING CONDITIONS

##### REFLOW SOLDERING



#### FLOW SOLDERING



#### IRON SOLDERING

Tip temperature	300 to 350°C
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: approx.1mm

- Based on the above conditions, use a maximum product temperature of 260°C and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

#### PRODUCT IDENTIFICATION

NLCV	32	T-	2R2	M	- PF
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions

32	3.2×2.5×2.2mm (L×W×T)
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(3) Packaging style

T	Taping (reel)
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(4) Inductance value

1R0	1 $\mu$ H
100	10 $\mu$ H
101	100 $\mu$ H

(5) Inductance tolerance

K	±10%
M	±20%

(6) Lead-free compatible product

PF	Conformity to RoHS directive, exemption regulations apply
EF	Conformity to RoHS directive

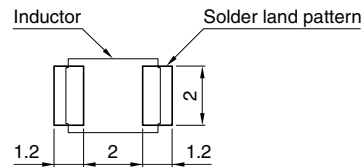
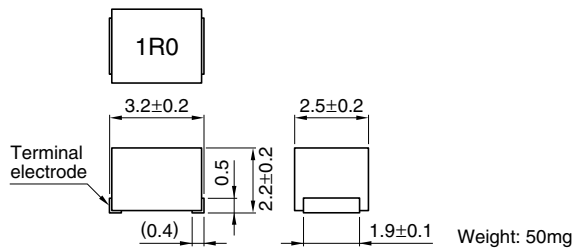
#### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	2000 pieces/reel

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



Dimensions in mm

## ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q ref.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)±30%	Rated current* <sup>1</sup> (mA)max.	Part No.
1	±20%	10	7.96	100	0.06	1000	NLCV32T-1R0M-□* <sup>2</sup>
1.5	±20%	10	7.96	80	0.11	830	NLCV32T-1R5M-□
2.2	±20%	10	7.96	68	0.13	770	NLCV32T-2R2M-□
3.3	±20%	10	7.96	54	0.16	690	NLCV32T-3R3M-□
4.7	±20%	15	7.96	46	0.2	620	NLCV32T-4R7M-□
6.8	±20%	15	7.96	38	0.27	530	NLCV32T-6R8M-□
10	±10%	15	2.52	30	0.36	450	NLCV32T-100K-□
15	±10%	15	2.52	26	0.56	370	NLCV32T-150K-□
22	±10%	15	2.52	21	0.77	300	NLCV32T-220K-□
33	±10%	15	2.52	17	1.1	240	NLCV32T-330K-□
47	±10%	15	2.52	14	1.64	180	NLCV32T-470K-□
68	±10%	15	2.52	12	2.8	140	NLCV32T-680K-□
100	±10%	15	0.796	10	3.7	120	NLCV32T-101K-□
150	±10%	20	0.796	8	6.1	100	NLCV32T-151K-□
220	±10%	20	0.796	7	8.4	80	NLCV32T-221K-□
330	±10%	20	0.796	6	12.3	70	NLCV32T-331K-□

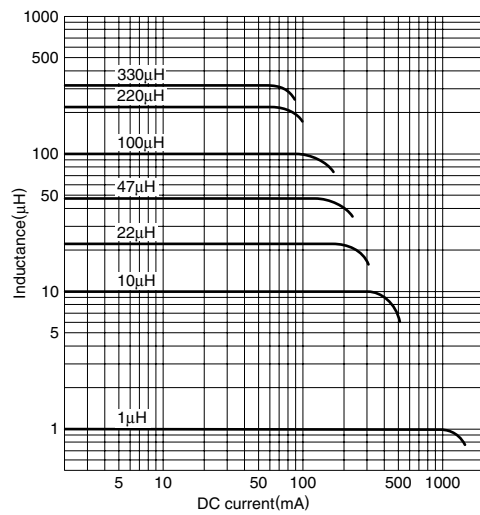
\*<sup>1</sup> Rated current: Value obtained when current flows and the temperature has risen to 20°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

\*<sup>2</sup> □: Please specify lead-free compatible product, PF (Conformity to RoHS directive, exemption regulations apply) or EF (Conformity to RoHS directive)

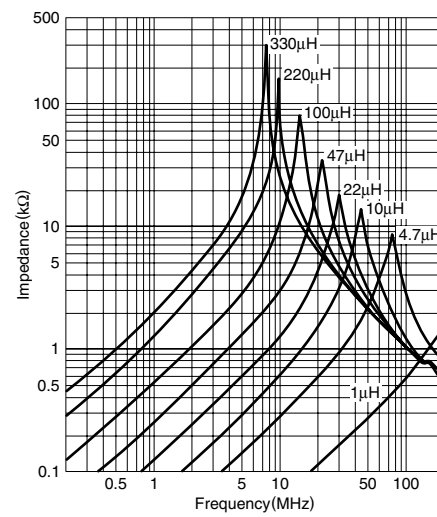
- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER+YHP16085A+YHP16093B+TF-1, or equivalent  
 SRF: HP8753C NETWORK ANALYZER  
 Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER, or equivalent

## TYPICAL ELECTRICAL CHARACTERISTICS

## INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



## IMPEDANCE vs. FREQUENCY CHARACTERISTICS



# Inductors for Decoupling Circuits Wound/For Current

Conformity to RoHS Directive

## NLCV Series NLCV25T-R

### FEATURES

- Rated current is maintained in the range of 1.7 to 2.0 times compared to the existing NLCV25 series.
- Stable inductance, as the inductance change in the maximum rated current load is within  $-10\%$ .
- Maximum operating temperature is  $+125^{\circ}\text{C}$  (including self-temperature rise).
- Lead-free material is adopted for terminal soldering.
- PC board pattern is compatible with the existing NLCV25 series.
- This product is in compliance with the RoHS Directive. Other products with specifications that do not include exemption regulations are also available.

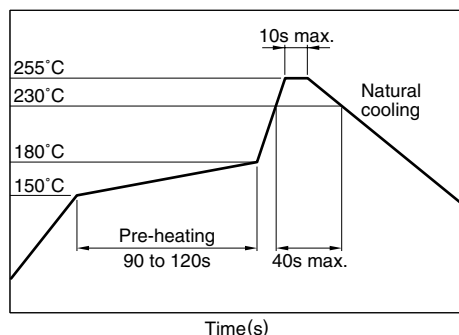
### APPLICATIONS

Power supply lines, audio visual systems, electronic equipment for vehicle, IT equipment

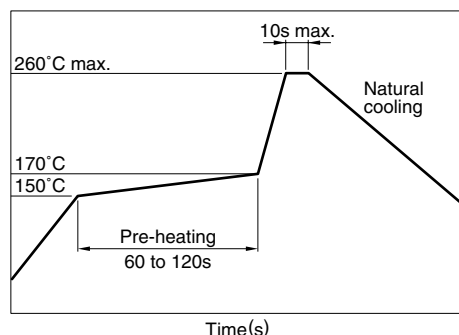
### SPECIFICATIONS

Operating temperature range	$-40$ to $+125^{\circ}\text{C}$ [Including self-temperature rise]
Storage temperature range	$-40$ to $+125^{\circ}\text{C}$

### RECOMMENDED SOLDERING CONDITIONS REFLOW SOLDERING



### FLOW SOLDERING



### IRON SOLDERING

Tip temperature	300 to $350^{\circ}\text{C}$
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

- Based on the above conditions, use a maximum product temperature of  $260^{\circ}\text{C}$  and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

### PRODUCT IDENTIFICATION

NLCV	25	T	R10	M	-	PF	R
(1)	(2)	(3)	(4)	(5)	-	(6)	(7)

(1) Series name

(2) Dimensions

25	$2.5 \times 2.0 \times 1.8\text{mm}$ (L×W×T)
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(3) Packaging style

T	Taping (reel)
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(4) Inductance

R10	$0.1\mu\text{H}$
1R0	$1\mu\text{H}$
100	$10\mu\text{H}$

(5) Inductance tolerance

K	$\pm 10\%$
M	$\pm 20\%$

(6) Lead-free compatible product

PF	Conformity to RoHS directive, exemption regulations apply
EF	Conformity to RoHS directive

(7) TDK internal code

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q ref.	Test frequency L,Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)±20%	Rated current (mA)max.	Part No.
0.1	±20%	5	25.2	800	0.04	1890	NLCV25T-R10M-□*R
0.15	±20%	5	25.2	500	0.044	1800	NLCV25T-R15M-□R
0.22	±20%	5	25.2	400	0.05	1690	NLCV25T-R22M-□R
0.33	±20%	5	25.2	300	0.065	1480	NLCV25T-R33M-□R
0.47	±20%	5	25.2	220	0.08	1340	NLCV25T-R47M-□R
0.68	±20%	5	25.2	160	0.09	1260	NLCV25T-R68M-□R
1	±20%	10	7.96	100	0.14	1000	NLCV25T-1R0M-□R
1.5	±20%	10	7.96	80	0.18	890	NLCV25T-1R5M-□R
2.2	±20%	10	7.96	68	0.27	730	NLCV25T-2R2M-□R
3.3	±20%	10	7.96	54	0.44	570	NLCV25T-3R3M-□R
4.7	±20%	10	7.96	46	0.57	500	NLCV25T-4R7M-□R
6.8	±20%	10	7.96	38	0.92	390	NLCV25T-6R8M-□R
10	±10%	15	2.52	30	1.1	360	NLCV25T-100K-□R

\* □: Please specify lead-free compatible product, PF (Conformity to RoHS directive, exemption regulations apply) or EF (Conformity to RoHS directive)

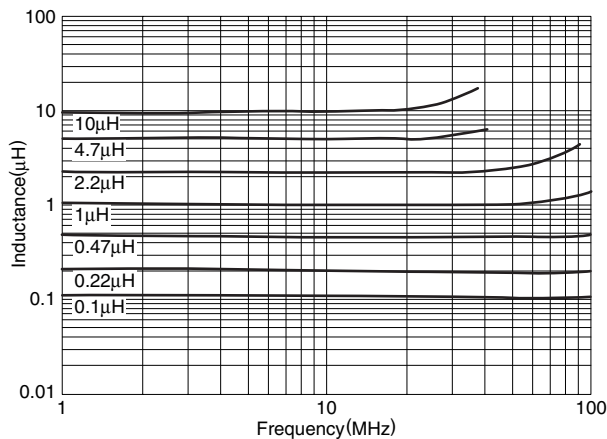
• Test equipment L, Q: HP4194A IMPEDANCE ANALYZER+16085A+16093B+TF-1

SRF: HP8753C NETWORK ANALYZER

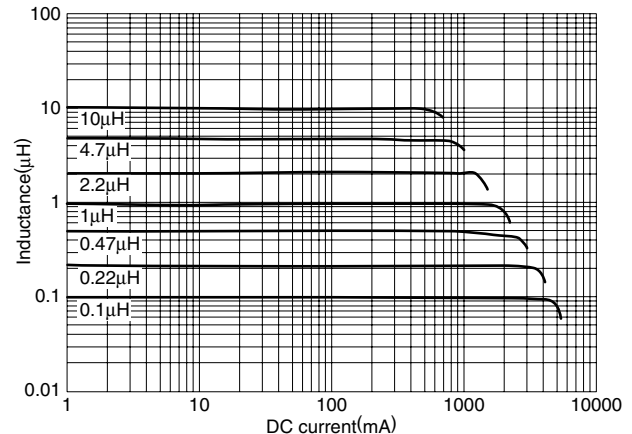
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER

## TYPICAL ELECTRICAL CHARACTERISTICS

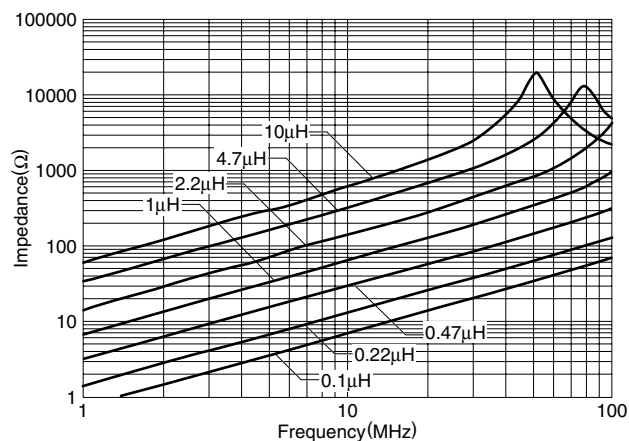
### INDUCTANCE vs. FREQUENCY CHARACTERISTICS



### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS



### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



• All specifications are subject to change without notice.



# Inductors for Decoupling Circuits

## Wound/For Current

Conformity to RoHS Directive

### NLCV Series NLCV32T-R

#### FEATURES

- Rated current is maintained in the range of 1.4 to 2.0 times compared to the existing NLCV32 series.
- Stable inductance, as the inductance change in the maximum rated current load is within  $-10\%$ .
- Maximum operating temperature is  $+125^{\circ}\text{C}$  (including self-temperature rise).
- Lead-free material is adopted for terminal soldering.
- PC board pattern is compatible with the existing NLCV32 series.
- This product is in compliance with the RoHS Directive. Other products with specifications that do not include exemption regulations are also available.

#### APPLICATIONS

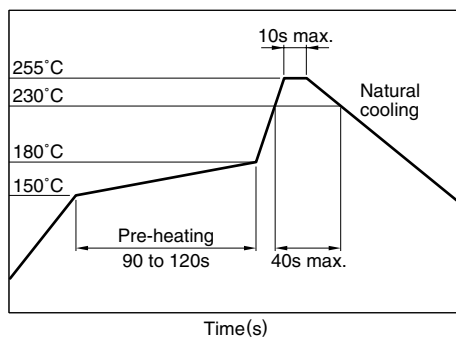
Power supply lines, audio visual systems, electronic equipment for vehicle, IT equipment

#### SPECIFICATIONS

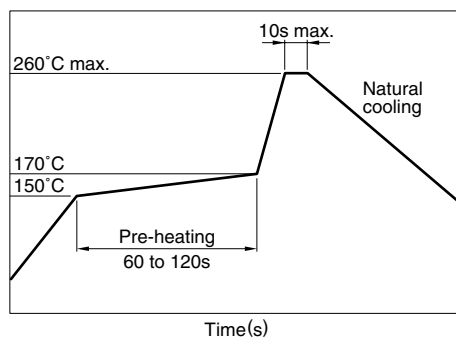
Operating temperature range	$-40$ to $+125^{\circ}\text{C}$ [Including self-temperature rise]
Storage temperature range	$-40$ to $+125^{\circ}\text{C}$

#### RECOMMENDED SOLDERING CONDITIONS

##### REFLOW SOLDERING



##### FLOW SOLDERING



#### IRON SOLDERING

Tip temperature	300 to $350^{\circ}\text{C}$
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

- Based on the above conditions, use a maximum product temperature of  $260^{\circ}\text{C}$  and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

#### PRODUCT IDENTIFICATION

NLCV	32	T	R10	M	PF	R
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions

32	$3.2 \times 2.5 \times 2.2\text{mm}(\text{L} \times \text{W} \times \text{T})$
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(3) Packaging style

T	Taping (reel)
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(4) Inductance

R10	$0.1\mu\text{H}$
1R0	$1\mu\text{H}$
100	$10\mu\text{H}$

(5) Inductance tolerance

K	$\pm 10\%$
M	$\pm 20\%$

(6) Lead-free compatible product

PF	Conformity to RoHS directive, exemption regulations apply
EF	Conformity to RoHS directive

(7) TDK internal code

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



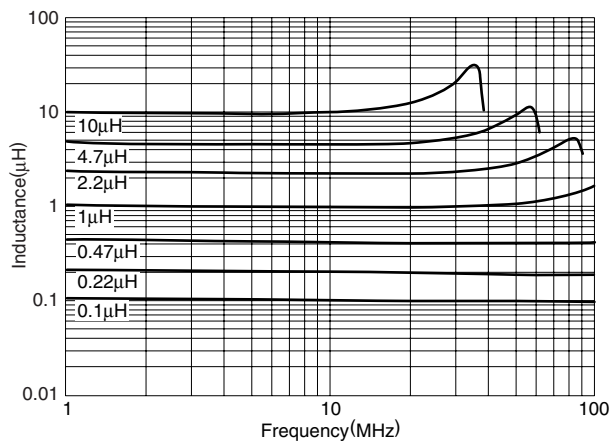
## ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q ref.	Test frequency L,Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)±20%	Rated current (mA)max.	Part No.
0.1	±20%	10	25.2	800	0.02	2850	NLCV32T-R10M-□*R
0.15	±20%	10	25.2	500	0.024	2600	NLCV32T-R15M-□R
0.22	±20%	10	25.2	400	0.027	2400	NLCV32T-R22M-□R
0.33	±20%	10	25.2	300	0.035	2100	NLCV32T-R33M-□R
0.47	±20%	10	25.2	250	0.038	2000	NLCV32T-R47M-□R
0.68	±20%	10	25.2	180	0.045	1900	NLCV32T-R68M-□R
1	±20%	15	7.96	100	0.055	1700	NLCV32T-1R0M-□R
1.5	±20%	15	7.96	80	0.095	1400	NLCV32T-1R5M-□R
2.2	±20%	15	7.96	68	0.115	1200	NLCV32T-2R2M-□R
3.3	±20%	15	7.96	54	0.16	1000	NLCV32T-3R3M-□R
4.7	±20%	15	7.96	46	0.2	900	NLCV32T-4R7M-□R
6.8	±20%	15	7.96	38	0.29	700	NLCV32T-6R8M-□R
10	±10%	20	2.52	30	0.42	600	NLCV32T-100K-□R

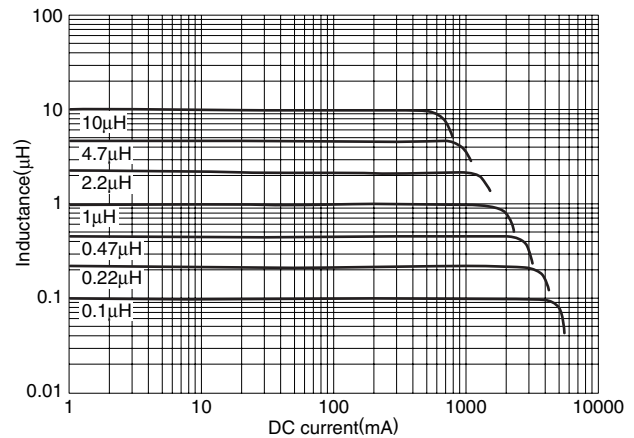
\* □: Please specify lead-free compatible product, PF (Conformity to RoHS directive, exemption regulations apply) or EF (Conformity to RoHS directive)

## TYPICAL ELECTRICAL CHARACTERISTICS

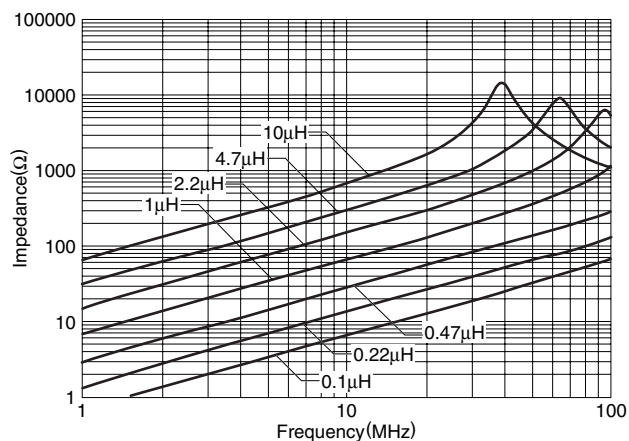
### INDUCTANCE vs. FREQUENCY CHARACTERISTICS



### INDUCTANCE vs. DC SUPERPOSITION CHARACTERISTICS



### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



# Inductors for Decoupling Circuits Wound/For Current

Conformity to RoHS Directive

## NLC Series NLC453232

### FEATURES

- The NLC series feature low DC resistance and high current handling capacities, making them ideal for power supply line applications.
- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.
- Lead-free material is used for the plating on the terminal.
- The product uses metal terminals, which realize excellent connection reliability.
- From 1 $\mu$ H to 330 $\mu$ H, all of the products in the E-12 series are K( $\pm$ 10%) tolerance products.
- It is a product conforming to RoHS directive.

### APPLICATIONS

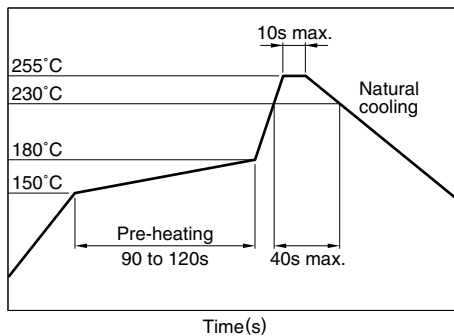
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Audio-visual equipment including TVs and VCRs.
- Other electronic equipment including HDDs and ODDs.

### SPECIFICATIONS

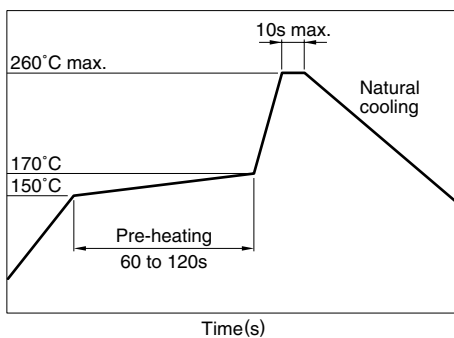
Operating temperature range	-40 to +105°C [Including self-temperature rise]
Storage temperature range	-40 to +105°C

### RECOMMENDED SOLDERING CONDITIONS

#### REFLOW SOLDERING



#### FLOW SOLDERING



### IRON SOLDERING

Tip temperature	300 to 350°C
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

- Based on the above conditions, use a maximum product temperature of 260°C and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

### PRODUCT IDENTIFICATION

NLC	453232	T-	2R2	K	- PF
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions

453232	4.5×3.2×3.2mm (L×W×T)
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(3) Packaging style

T	Taping (reel)
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(4) Inductance value

1R0	1 $\mu$ H
100	10 $\mu$ H
101	100 $\mu$ H

(5) Inductance tolerance

K	$\pm$ 10%
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(6) Lead-free compatible product

PF	Lead-free compatible product
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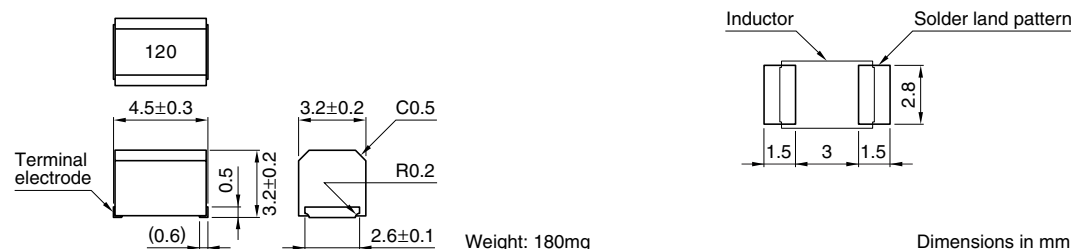
### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	500 pieces/reel

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

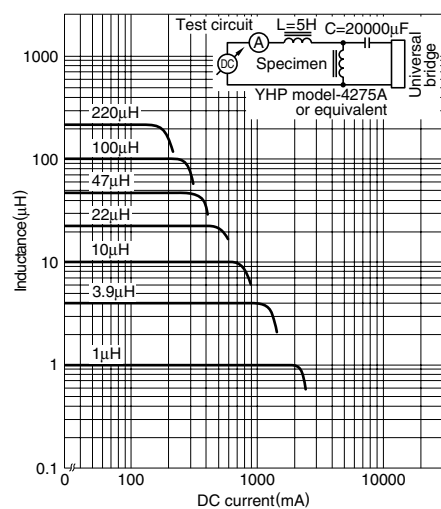
Inductance ( $\mu$ H)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance ( $\Omega$ )max.	Rated current* (mA)max.	Part No.
1	$\pm 10\%$	10	7.96	200	0.11	1050	NLC453232T-1R0K-PF
1.2	$\pm 10\%$	10	7.96	160	0.12	1000	NLC453232T-1R2K-PF
1.5	$\pm 10\%$	10	7.96	130	0.15	950	NLC453232T-1R5K-PF
1.8	$\pm 10\%$	10	7.96	100	0.16	900	NLC453232T-1R8K-PF
2.2	$\pm 10\%$	10	7.96	80	0.18	850	NLC453232T-2R2K-PF
2.7	$\pm 10\%$	10	7.96	60	0.2	800	NLC453232T-2R7K-PF
3.3	$\pm 10\%$	10	7.96	45	0.22	750	NLC453232T-3R3K-PF
3.9	$\pm 10\%$	10	7.96	40	0.24	700	NLC453232T-3R9K-PF
4.7	$\pm 10\%$	10	7.96	35	0.27	650	NLC453232T-4R7K-PF
5.6	$\pm 10\%$	10	7.96	30	0.3	650	NLC453232T-5R6K-PF
6.8	$\pm 10\%$	10	7.96	28	0.35	600	NLC453232T-6R8K-PF
8.2	$\pm 10\%$	10	7.96	25	0.4	600	NLC453232T-8R2K-PF
10	$\pm 10\%$	10	2.52	22	0.5	550	NLC453232T-100K-PF
12	$\pm 10\%$	10	2.52	21	0.6	500	NLC453232T-120K-PF
15	$\pm 10\%$	10	2.52	20	0.7	450	NLC453232T-150K-PF
18	$\pm 10\%$	10	2.52	19	0.8	400	NLC453232T-180K-PF
22	$\pm 10\%$	10	2.52	18	0.9	370	NLC453232T-220K-PF
27	$\pm 10\%$	10	2.52	16	1.2	330	NLC453232T-270K-PF
33	$\pm 10\%$	10	2.52	14	1.4	300	NLC453232T-330K-PF
39	$\pm 10\%$	10	2.52	12	1.6	280	NLC453232T-390K-PF
47	$\pm 10\%$	10	2.52	11.5	1.9	260	NLC453232T-470K-PF
56	$\pm 10\%$	10	2.52	11	2.2	240	NLC453232T-560K-PF
68	$\pm 10\%$	10	2.52	10	2.6	220	NLC453232T-680K-PF
82	$\pm 10\%$	10	2.52	9	3.5	200	NLC453232T-820K-PF
100	$\pm 10\%$	20	0.796	8	4	180	NLC453232T-101K-PF
120	$\pm 10\%$	20	0.796	7.5	4.5	160	NLC453232T-121K-PF
150	$\pm 10\%$	20	0.796	7	6.5	140	NLC453232T-151K-PF
180	$\pm 10\%$	20	0.796	6.5	7.5	120	NLC453232T-181K-PF
220	$\pm 10\%$	20	0.796	5.5	9	120	NLC453232T-221K-PF
270	$\pm 10\%$	20	0.796	5	11	100	NLC453232T-271K-PF
330	$\pm 10\%$	20	0.796	4	13	90	NLC453232T-331K-PF

\* Rated current: Value obtained when current flows and the temperature has risen to 20°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

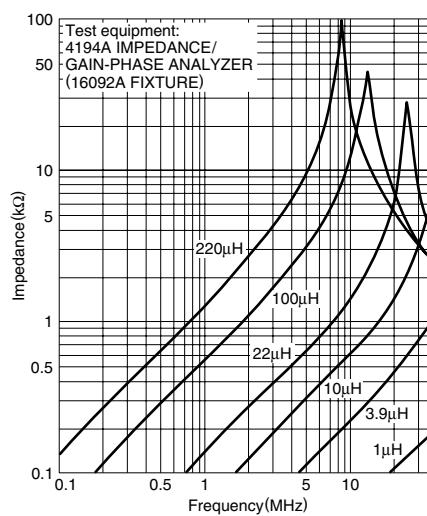
- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER+YHP16085A+YHP16093B+TF-1, or equivalent  
SRF: HP8753C NETWORK ANALYZER ( $Z_{in}=Z_{out}=50\Omega$ ), or equivalent  
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER, or equivalent

## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



# Inductors for Decoupling Circuits Wound/For Current

Conformity to RoHS Directive

## NLC Series NLC565050

### FEATURES

- The NLC series feature low DC resistance and high current handling capacities, making them ideal for power supply line applications.
- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.
- Lead-free material is used for the plating on the terminal.
- The product uses metal terminals, which realize excellent connection reliability.
- From 1μH to 1000μH, all of the products in the E-12 series are K(±10%) tolerance products.
- It is a product conforming to RoHS directive.

### APPLICATIONS

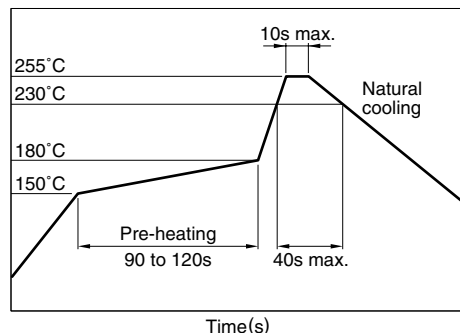
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Audio-visual equipment including TVs and VCRs.
- Other electronic equipment including HDDs and ODDs.

### SPECIFICATIONS

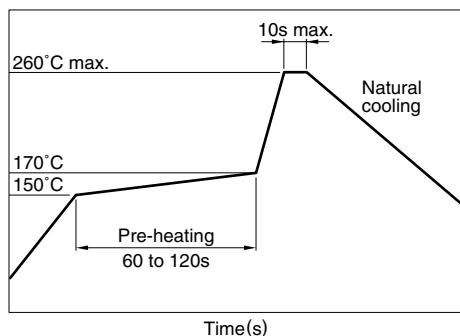
Operating temperature range	−40 to +105°C [Including self-temperature rise]
Storage temperature range	−40 to +105°C

### RECOMMENDED SOLDERING CONDITIONS

#### REFLOW SOLDERING



#### FLOW SOLDERING



### IRON SOLDERING

Tip temperature	300 to 350°C
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

- Based on the above conditions, use a maximum product temperature of 260°C and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

### PRODUCT IDENTIFICATION

NLC	565050	T-	2R2	K	- PF
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions

565050	5.6×5.0×5.0mm(L×W×T)
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(3) Packaging style

T	Taping(reel)
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(4) Inductance value

1R0	1μH
100	10μH
101	100μH
102	1000μH

(5) Inductance tolerance

K	±10%
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(6) Lead-free compatible product

PF	Lead-free compatible product
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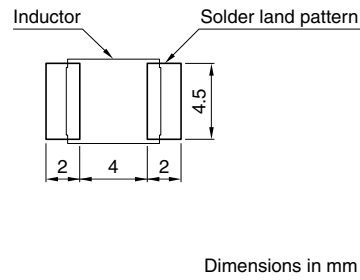
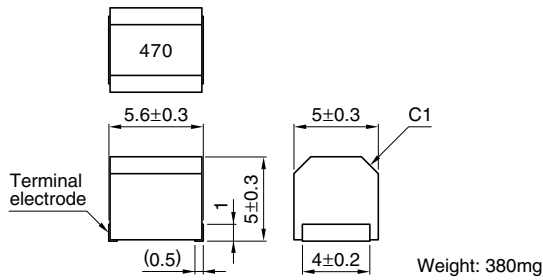
### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	400 pieces/reel

• 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.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



## ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current* (mA)max.	Part No.
1	±10%	10	7.96	95	0.03	1800	NLC565050T-1R0K-PF
1.2	±10%	10	7.96	70	0.035	1700	NLC565050T-1R2K-PF
1.5	±10%	10	7.96	55	0.04	1600	NLC565050T-1R5K-PF
1.8	±10%	10	7.96	47	0.05	1400	NLC565050T-1R8K-PF
2.2	±10%	10	7.96	42	0.06	1300	NLC565050T-2R2K-PF
2.7	±10%	10	7.96	37	0.07	1200	NLC565050T-2R7K-PF
3.3	±10%	10	7.96	34	0.08	1120	NLC565050T-3R3K-PF
3.9	±10%	10	7.96	32	0.09	1050	NLC565050T-3R9K-PF
4.7	±10%	10	7.96	29	0.11	950	NLC565050T-4R7K-PF
5.6	±10%	10	7.96	26	0.13	880	NLC565050T-5R6K-PF
6.8	±10%	10	7.96	24	0.15	810	NLC565050T-6R8K-PF
8.2	±10%	10	7.96	22	0.18	750	NLC565050T-8R2K-PF
10	±10%	10	2.52	19	0.21	690	NLC565050T-100K-PF
12	±10%	10	2.52	17	0.25	630	NLC565050T-120K-PF
15	±10%	10	2.52	16	0.3	580	NLC565050T-150K-PF
18	±10%	10	2.52	14	0.36	530	NLC565050T-180K-PF
22	±10%	10	2.52	13	0.43	480	NLC565050T-220K-PF
27	±10%	10	2.52	11.5	0.52	440	NLC565050T-270K-PF
33	±10%	10	2.52	10.5	0.62	400	NLC565050T-330K-PF
39	±10%	10	2.52	9.5	0.72	370	NLC565050T-390K-PF
47	±10%	10	2.52	8.5	0.85	340	NLC565050T-470K-PF
56	±10%	10	2.52	7.8	1	310	NLC565050T-560K-PF
68	±10%	10	2.52	7	1.2	290	NLC565050T-680K-PF
82	±10%	10	2.52	6.4	1.4	270	NLC565050T-820K-PF
100	±10%	20	0.796	6	1.6	250	NLC565050T-101K-PF
120	±10%	20	0.796	5.4	1.9	230	NLC565050T-121K-PF
150	±10%	20	0.796	4.8	2.2	210	NLC565050T-151K-PF
180	±10%	20	0.796	4.4	2.8	190	NLC565050T-181K-PF
220	±10%	20	0.796	3.9	3.4	170	NLC565050T-221K-PF
270	±10%	20	0.796	3.6	4.2	155	NLC565050T-271K-PF
330	±10%	20	0.796	3.2	4.9	140	NLC565050T-331K-PF
390	±10%	20	0.796	2.9	5.8	130	NLC565050T-391K-PF
470	±10%	20	0.796	2.6	7	120	NLC565050T-471K-PF
560	±10%	20	0.796	2.4	8.5	110	NLC565050T-561K-PF
680	±10%	20	0.796	2.2	10	100	NLC565050T-681K-PF
820	±10%	20	0.796	2	13	90	NLC565050T-821K-PF
1000	±10%	20	0.252	1.8	15	85	NLC565050T-102K-PF

\* Rated current: Value obtained when current flows and the temperature has risen to 20°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER+YHP16085A+YHP16093B+TF-1, or equivalent  
SRF: HP8753C NETWORK ANALYZER (Z<sub>in</sub>=Z<sub>out</sub>=50Ω), or equivalent  
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER, or equivalent

# **TYPICAL ELECTRICAL CHARACTERISTICS** **INDUCTANCE CHANGE vs. DC SUPERPOSITION** **CHARACTERISTICS**

