

YAGEO CORPORATION

Lead-Free & RoHs Compliance!!

SPECIFICATION FOR APPROVAL

CUSTOMER : _____
CUSTOMER P/N : _____
OUR DWG No : _____
QUANTITY : _____ Pcs. DATE : 2010/11/01
ITEM : NLC322522T-100K-N

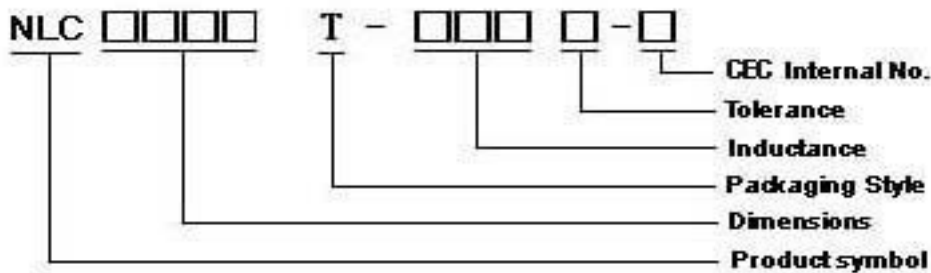
SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

DRAWN BY Sally	CHECKED BY Ling	APPROVED BY Ryan.Chen
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NLC322522T Series Specification

1 Scope: This specification applies to Wire Wound Ferrite Chip Inductors

2 Part Numbering: Product Identification

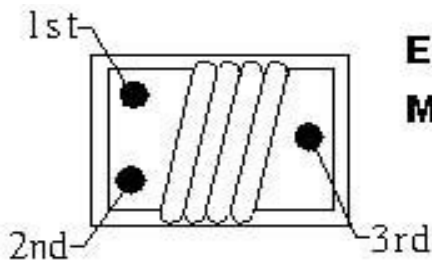


3 Rating:

Operating Temperature: $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Storage Temperature: Under 25°C , **Humidity** < 75% RH

4 Marking:



Ex:NLC322522T-100K-N

Marking: 1st→Brown

2nd→Black

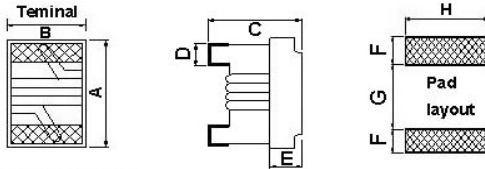
3rd→Orange

5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	$20 \pm 2^{\circ}\text{C}$
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70% RH

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6 Configuration and Dimensions:



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H
NLC322522	3.70 ⁺⁰	2.90 ⁺⁰	2.60 ⁺⁰	0.51	0.51	1	2	2.7

7 ELECTRICAL CHARACTERISTICS :

Part No.	Inductance (uH)	L,Q Test Freq. (MHZ)	Q Min.	SRF (MHz)Typ.	RDC (Ω)±30%	IDC (mA)	Tolerance (±%)	Color Code		
								1st	2nd	3rd
NLC322522T-R47□-N	0.47	25.2	40	450	0.07	1800	5,10	YEL	VIO	BRN
NLC322522T-1R0□-N	1	7.96	20	100	0.08	1500	5,10	BRN	BLK	RED
NLC322522T-1R2□-N	1.2	7.96	20	90	0.12	1400	5,10	BRN	RED	RED
NLC322522T-1R5□-N	1.5	7.96	20	80	0.13	1125	5,10	BRN	GRN	RED
NLC322522T-1R8□-N	1.8	7.96	20	70	0.13	970	5,10	BRN	GRY	RED
NLC322522T-2R2□-N	2.2	7.96	20	68	0.13	970	5,10	RED	RED	RED
NLC322522T-2R7□-N	2.7	7.96	20	62	0.15	900	5,10	RED	VIO	RED
NLC322522T-3R3□-N	3.3	7.96	20	54	0.16	837	5,10	ORN	ORN	RED
NLC322522T-4R7□-N	4.7	7.96	20	43	0.23	675	5,10	YEL	VIO	RED
NLC322522T-5R6□-N	5.6	7.96	20	36	0.26	620	5,10	GRN	BLU	RED
NLC322522T-6R8□-N	6.8	7.96	20	33	0.27	600	5,10	BLU	GRY	RED
NLC322522T-8R2□-N	8.2	7.96	20	30	0.32	580	5,10	GRY	RED	RED
NLC322522T-100□-N	10	2.52	15	28	0.36	520	5,10	BRN	BLK	ORN
NLC322522T-120□-N	12	2.52	15	25	0.5	500	5,10	BRN	RED	ORN
NLC322522T-150□-N	15	2.52	15	19	0.56	480	5,10	BRN	GRN	ORN
NLC322522T-180□-N	18	2.52	15	17	0.67	330	5,10	BRN	GRY	ORN
NLC322522T-220□-N	22	2.52	15	16	0.77	310	5,10	RED	RED	ORN
NLC322522T-270□-N	27	2.52	15	13	1	280	5,10	RED	VIO	ORN
NLC322522T-330□-N	33	2.52	15	12	1.1	270	5,10	ORN	ORN	ORN
NLC322522T-390□-N	39	2.52	15	11	1.4	220	5,10	ORN	WHT	ORN
NLC322522T-470□-N	47	2.52	15	10	1.64	210	5,10	YEL	VIO	ORN
NLC322522T-560□-N	56	2.52	15	9	2.49	189	5,10	GRN	BLU	ORN
NLC322522T-680□-N	68	2.52	15	9	2.8	189	5,10	BLU	GRY	ORN
NLC322522T-820□-N	82	2.52	15	6	3	145	5,10	GRY	RED	ORN
NLC322522T-101□-N	100	0.796	15	6	3.7	145	5,10	BRN	BLK	YEL

NOTE: □-tolerance J=±5% / K=±10% M=±20%

1. Operating temperature range - 25°C ~ 85°C

2. IDC: Applied the current to coils, the inductance shall be less than 10% initial value.

"-N" FOR COMPLETELY LEAD FREE TYPE (INCLUDING FERRITE BODY & SOLDER)

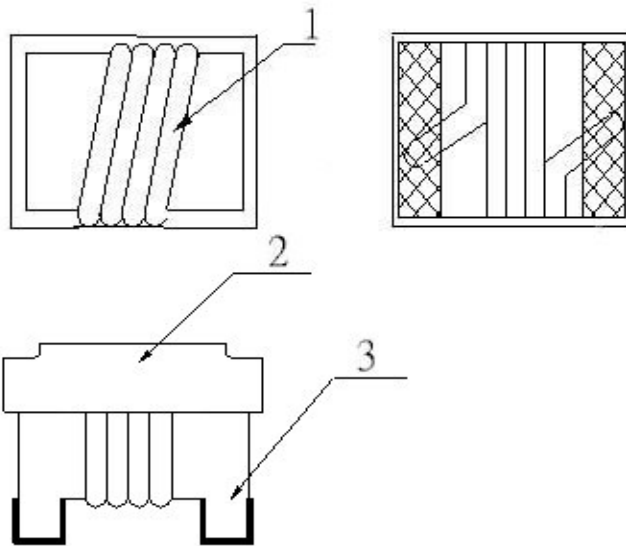
NLC322522T Series Specification

Part No.	Inductance (uH)	L,Q Test Freq. (MHZ)	Q Min.	SRF (MHz)Typ.	RDC (Ω)±30%	IDC (mA)	Tolerance (±%)	Color Code		
								1st	2nd	3rd
NLC322522T-151□-N	150	0.796	15	5	6.1	120	5,10	BRN	GRN	YEL
NLC322522T-181□-N	180	0.796	15	4	8	105	5,10	BRN	GRY	YEL
NLC322522T-221□-N	220	0.796	15	4	8.4	100	5,10	RED	RED	YEL
NLC322522T-331□-N	330	0.796	15	3.5	12.3	80	5,10	ORN	ORN	YEL
NLC322522T-391□-N	390	0.796	15	2.8	17.6	75	5,10	ORN	WHT	YEL
NLC322522T-471□-N	470	0.796	15	2.8	22	75	5,10	YEL	VIO	YEL
NLC322522T-561□-N	560	0.796	15	2.5	23	65	5,10	GRN	BLU	YEL
NLC322522T-681□-N	680	0.796	15	2	28	65	5,10	BLU	GRY	YEL

NLC322522T Series Specification

8 NLC322522T Series

8.1 Construction:



8.2 Material List:

ITEM	PART	DESCRIPTION	SUPPLIES
1	WIRE	Polysol 180	ELEKTRISOLA
2	EPOXY	UV GLUE	PROVONCE
3	CORE	FERRITE	CHILISIN

NLC322522T Series Specification

9 Reliability Of Ferrite Wire Wound Chip Inductor/FERRITE SERIES

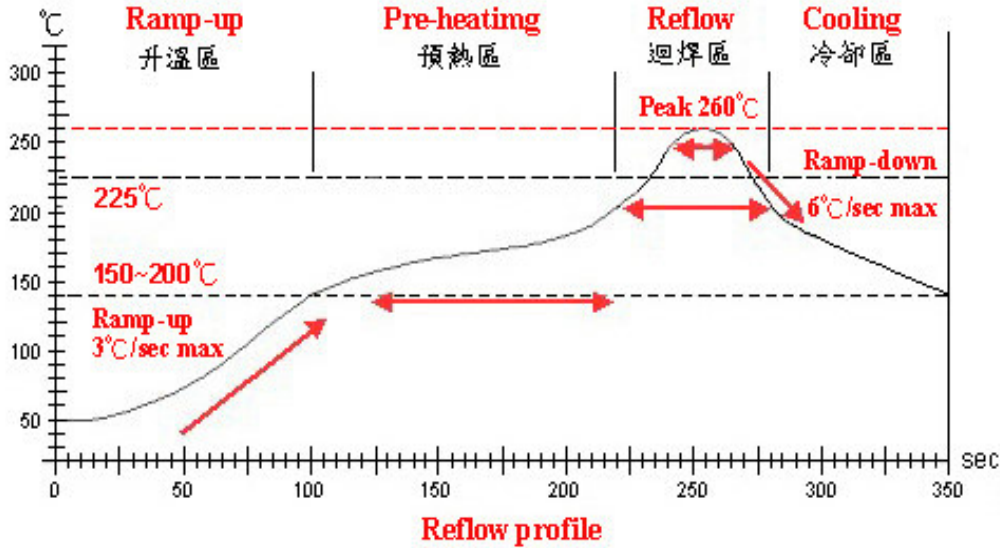
1-1.Environmental Performance

No	Item	Specification	Test Method															
1-1-1	Temperature Cycle	Appearance: No Damage Inductance: within $\pm 10\%$ of initial value Q change: within $\pm 30\%$ of initial value	One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature ($^{\circ}\text{C}$)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25 ± 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25 ± 2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85 ± 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25 ± 2</td> <td>3</td> </tr> </tbody> </table> Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs	Step	Temperature ($^{\circ}\text{C}$)	Time (min)	1	-25 ± 3	30	2	25 ± 2	3	3	85 ± 3	30	4	25 ± 2	3
Step	Temperature ($^{\circ}\text{C}$)	Time (min)																
1	-25 ± 3	30																
2	25 ± 2	3																
3	85 ± 3	30																
4	25 ± 2	3																
1-1-2	Humidity Resistance		Temperature: $40\pm 2^{\circ}\text{C}$ Relative Humidity: 90 ~ 95% Time: 100hrs Measured After Exposure In The Room Condition For 1hrs															
1-1-3	High Temperature Resistance		Temperature: $85\pm 3^{\circ}\text{C}$ Time: 50Hrs Measured After Exposure In The Room Condition For 1Hrs															
1-1-4	Low Temperature Resistance		Temperature: $-25\pm 3^{\circ}\text{C}$ Time: 50Hrs Measured After Exposure In The Room Condition For 1Hrs															
1-1-5	High Temperature Load Life	There should be no evidence of short or open circle	Temperature: $85\pm 3^{\circ}\text{C}$ Load: Allowed DC Current Time: 1000Hrs															
1-1-6	Humidity Load Life		Temperature: $40\pm 2^{\circ}\text{C}$ Relative Humidity: 90~95% Load: Allowed DC Current Time: 1000Hrs															

1-2.Mechanical Performance

No	Item	Specification	Test Method
1-2-1	Resistance TO Soldering Heat	Apperance: No Damage	1. The device should be reflow soldered on PCB (peak $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 10 seconds) 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Test time: 6 minutes
1-2-2	Solder ability	The electrodes shall be at least 95% covered with new solder coating	1. Pre-Heating: 150°C , 1min. 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Solder Temperature: $245\pm 5^{\circ}\text{C}$. 4. Immersion Time: 4 ± 1 sec.
1-2-3	Component Adhesion (Push Test)	2 Lbs. For NLC252018 4 Lbs. For NLC322522	The device should be reflow soldered ($245\pm 5^{\circ}\text{C}$ For 10 seconds) to a tinned copper substrate. A force gauge should be applied to the side of the component. The device must withstand a minimum force of 1or2or4 pounds without a failure of the termination attached to component

NLC322522T Series Specification



Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp. scope	R.T. ~ 150°C	150°C ~ 200°C	225°C	260±5°C	Peak Temp. ~ 150°C
實際時間 Time result	—	60 ~ 180 sec	20 ~ 60 sec	5 ~ 10 sec	—

NOTE :

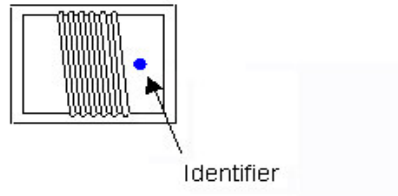
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow

0603/0805/201614 Series

Because of their small size, these parts are marked with a single color dot.
The inductance value represented by the dot is shown on the data page for

NLC322522T Series Specification

Because of their small size, these parts are marked with a single color dot. The inductance value represented by the dot is shown on the data page for each series.

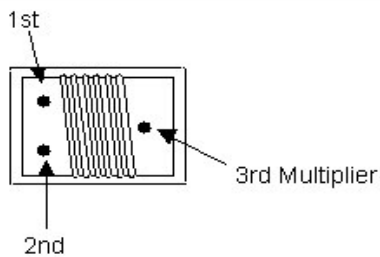


1008/1206/252018/322522 Series

These parts are marked with 3 color dots. The table at right side shows the significance of each color.

Dots 1 and 2 indicate the inductance in nanoHenries.

Dot 3 indicates the number of zeroes to be added.



0=Black	5=Green
1=Brown	6=Blue
2=Red	7=Violet
3=Orange	8=Gray
4=Yellow	9=White

Examples :

Blue, Gray, Red = 6800 nH

Red, Red, Brown = 220 nH

Yellow, Violet, Black = 47 nH

NLC322522T Series Specification

10 TEST DATA FOR PREPRODUCTION SAMPLES

QF-1419

DESCRIPTION: NLC322522T-100K-N

MEAS. Item	L (uH)	Q	SRF (MHz)	RDC (Ω)	IDC (mA)	A m/m	B m/m	C m/m	D m/m	E m/m	
Spec	Customer	10 \pm 10%									
	Suggest		15-0	28TYP.	0.36 \pm 30%	520	3.7+0	2.9+0	2.6+0	0.51	
Test Freq.	2.52MHz	2.52MHz									
1	9.78	23	55	0.422	OK	3.5	2.7	2.46	0.51		
2	9.85	22	57	0.415	OK	3.56	2.67	2.42	0.51		
3	9.88	25	63	0.409	OK	3.52	2.73	2.45	0.5		
4	9.73	22	54	0.412	OK	3.52	2.71	2.44	0.51		
5	9.91	21	52	0.42	OK	3.54	2.68	2.44	0.51		
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
\bar{X}	9.83	22.6	56.2	0.4156		3.528	2.698	2.442	0.508		
R	0.18	4	11	0.013		0.06	0.06	0.04	0.01		
CUSTOMER											
SAMPLE											

TEST INSTRUMENT:

HP4291A (over 1MHz) FOR L,Q
 HP4285A (under 1MHz) FOR L,Q
 CHEN HWA 502BC FOR RDC
 HP4284A + HP4281A FOR IDC
 HP4291A / HP8753D FOR SRF

APPEARANCE AND DIMENSIONS :

SPEC : MEET ITEM 6.
 TEST METHOD : VISUAL INSPECTION AND MEASURED WITH SILDE CALIPERS.

TESTING CONDITIONS :

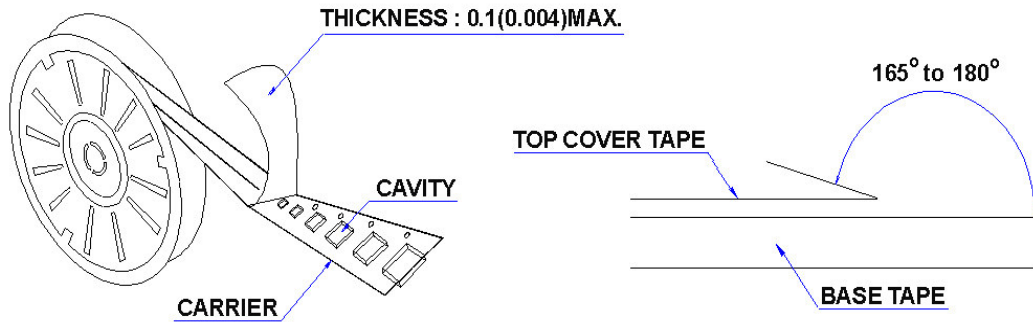
	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature (15 to 35°C)	20 \pm 2 °C
Humidity	Ordinary Humidity (25 to 85 %RH)	60 to 70 %RH

NLC322522T Series Specification

11 PACKAGING

11.1 Packaging -Cover tape

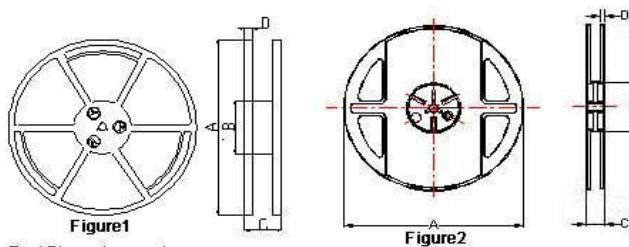
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
NLC252018	✓	2000
NLC322522	✓	2000
NLC453232	✓	500
NLC565050	✓	1000

11.3 Reel Dimensions



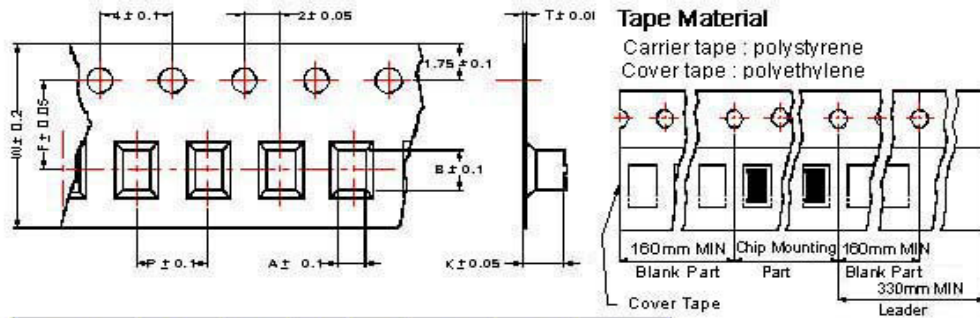
Reel Dimensions : m/m

TYPE	Fig	A	B	C	D
NLC252018	2	178	60	12	1.5
NLC322522	2	178	60	16	1.4
NLC453232	2	178	60	16	1.4
NLC565050	1	330	100	22	2.3

NLC322522T Series Specification

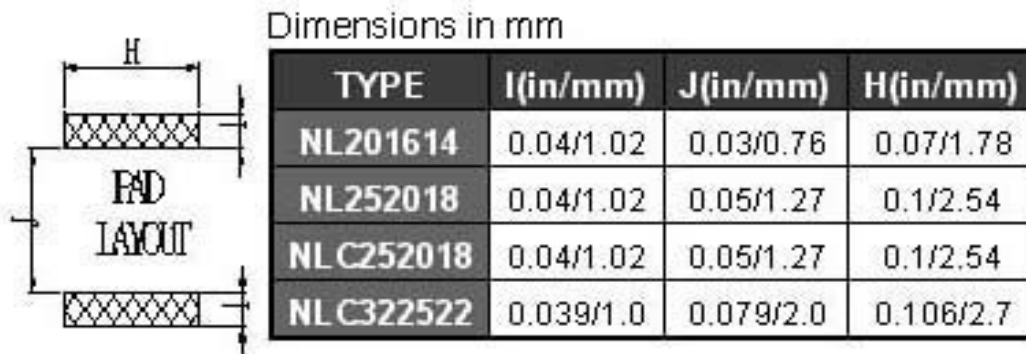
11 PACKAGING

11.4 Tape Dimensions in mm



TYPE	A	B	T	W	P	F	K
NLC252018	2.61	2.93	0.26	8	4	3.5	2.25
NLC322522	2.95	3.70	0.25	12	4	5.5	2.45
NLC453232	3.30	5.00	0.30	12	8	5.5	3.50
NLC565050	5.35	6.10	0.35	16	12	7.5	5.50

12 Recommended Pattern



13 Note:

1. Please make sure that your product is has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
4. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)

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14 Curve:

