

Data Sheet

Customer:

Product: Wire Wound Power Inductor (Metal) – NLD Series

Sizes.: 0402/0603

Issued Date: 26-Jul-22

Edition: REV.A1



VIKING TECH CORPORATION
光韻科技股份有限公司
No.70, Guangfu N. Rd., Hukou
Township, Hsinchu County
303, Taiwan (R.O.C)

TEL:886-3-5972931
FAX:886-3-5972935•886-3-5973494
E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH
光韻科技股份有限公司高雄分公司
No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,
806, Taiwan

TEL:886-7-8217999
FAX:886-7-8228229
E-mail:sales@viking.com.tw

VIKING ELECTRONICS (WUXI) CO., LTD.
光韻電子(無錫)有限公司
No.22 Xixia Road, Machinery & Industry Park,
National Hi-Tech Industrial Development Zone
of Wuxi, Wuxi, Jiangsu Province, China
Zip Code:214028
TEL:86-510-85203339
FAX:86-510-85203667•86-510-85203977
E-mail:china@viking.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
26-Jul-22	26-Jul-22	26-Jul-22		
<i>Mandy Chen</i>	<i>Ben Chang</i>	<i>Ben Chang</i>		

Wire Wound Power Inductor (Metal)

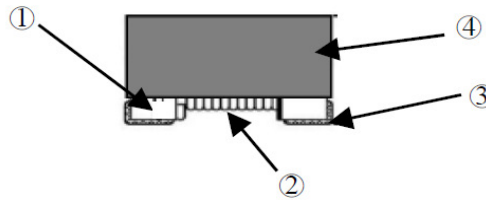
■ Features

- Utilizing a miniaturized winding structure.
- These products provide low DC resistance and high current.
- Precision inductance tolerance is available.

■ Applications

- Truly Wireless Earbuds
- Wireless Headphones
- Wearable Smart Devices
- Game Controllers
- Handheld Radios
- Point of Sales Devices

■ Construction

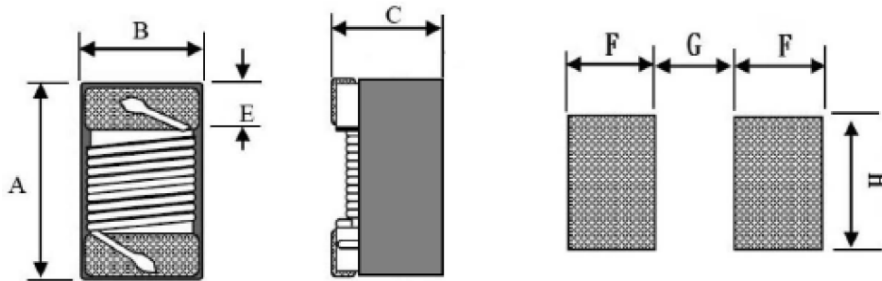


① Metal core	③ Terminal Ag-Pd/Ni/Sn
② Enameled copper wire	④ Magnetic power resin

■ Part Numbering

NLD Product Type	02 Dimensions 02: 0402 03: 0603	M Inductance Tolerance M: ±20% N: ±30%	T Packaging Code T: Taping Reel	1R0 Inductance 1R0: 1.0μH 100: 10μH
----------------------------	---	--	--	---

■ Dimensions



Unit: mm

Type	Size (Inch)	A	B	C	E	F	G	H
02	0402	1.15±0.10	0.65±0.10	0.60±0.10	0.20	0.36	0.46	0.66
03	0603	1.75±0.10	1.15±0.10	1.00±0.05	0.20	0.64	0.64	1.02

■ Standard Electrical Specifications

NLD02 Wire Wound Power Inductors(Metal)

Codes	Inductance (μH)	Tolerance	DCR (Ω) ±20%	Test Freq. (MHz)	Isat (A)		I _{rms} (A) Typ.
					Typ.	Max.	
1R0	1.0	M,N	0.28	1	1.1	1.0	1.1
2R2	2.2	M,N	0.88	1	0.6	0.5	0.6

Standard Electrical Specifications

NLD03 Wire Wound Power Inductors(Metal)

Codes	Inductance (μH)	Tolerance	DCR (Ω) ±20%	Test Freq. (MHz)	Isat (A)		Irms (A) Typ.
					Typ.	Max.	
1R0	1.0	M,N	0.16	1	1.9	1.5	1.8
2R2	2.2	M,N	0.24	1	1.5	1.2	1.4
4R7	4.7	M,N	0.50	1	1.0	0.8	0.9
100	10	M,N	1.05	1	0.7	0.56	0.63

Environmental Characteristics

Electrical Performance Test

Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	E4982A + Agilent 16197A
Q		E4982A + Agilent 16197A
DC Resistance DCR		E4982A + Agilent 16197A
Isat		For Inductance drop 30% from its value without current
Irms		For a 40°C rise above 25°C ambient

Mechanical Performance Test

Item	Requirement	Test Method
Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150°C, 1min. Solder Composition: Sn96.5/Ag3.0/Cu0.5 Solder Temperature: 260±5°C Immersion Time: 10±1 seconds
Solderability	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150°C, 1min. Solder Composition: Sn96.5/Ag3.0/Cu0.5 Solder Temperature: 255±5°C Immersion Time: 4±1 seconds
Component Adhesion(Push Test)	1Lbs. For 0402 1Lbs. For 0603 2Lbs. For 0805 2Lbs. For The Rest	The device should be Reflow soldered (255±5°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 1 or 2 Pounds without a failure of the termination attached to component.
Vibration	Appearance: No damage L,Q change: within Spec	Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x,y and z directions for 2 hours for a total of 6 hours. Freq: 10 ~ 50 Hz Amplitude: 1.5 mm

Environmental Performance Test

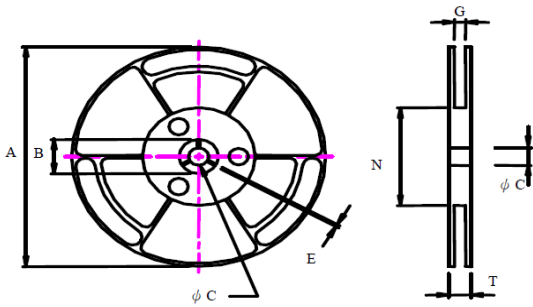
Item	Requirement	Test Method															
Temperature Cycle	Appearance: No damage L change: within Spec Q change: within Spec	One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25±2</td> <td>3</td> </tr> <tr> <td>3</td> <td>105±3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25±2</td> <td>3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Time (min.)	1	-40±3	30	2	25±2	3	3	105±3	30	4	25±2	3
Step		Temperature (°C)	Time (min.)														
1		-40±3	30														
2		25±2	3														
3		105±3	30														
4	25±2	3															
Static Humidity	Temperature: 85±2°C Relative Humidity: 90 ~ 95% Time: 24 hrs Measured after exposure in the room condition for 2 hrs																
High Temperature Resistance	Temperature: 105±3°C Time: 48±12 hrs Measured after exposure in the room condition for 2 hrs																
Low Temperature Resistance	Temperature: -40±3°C Time: 48±12 hrs Measured after exposure in the room condition for 2 hrs																

Operating Temperature Range: -40~+105°C

Storage Temperature: 20~25°C; Humidity: < 65%RH

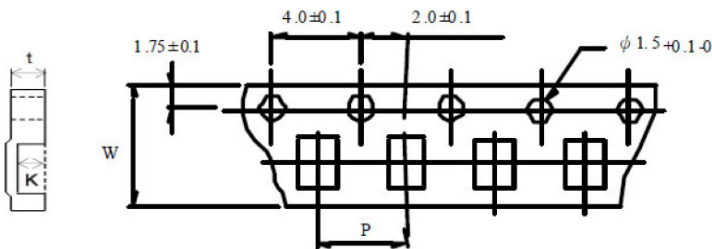
■ Packaging

Packaging Quantity & Reel Specifications



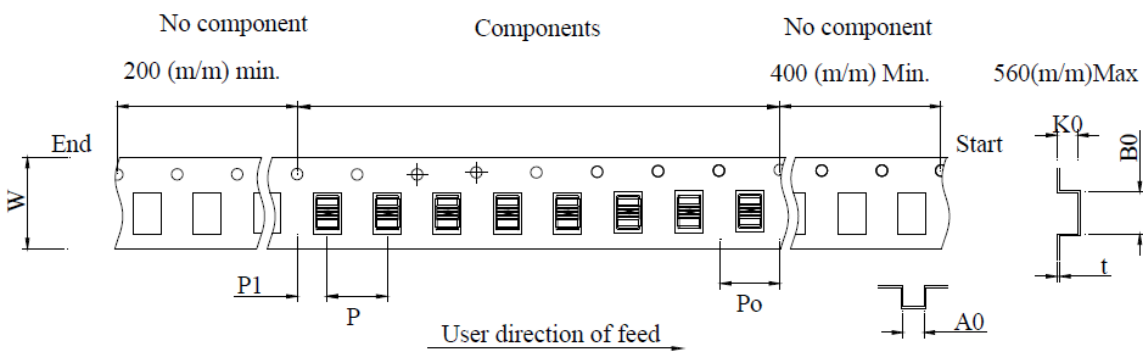
Type	A (mm)	B (mm)	C (mm)	E (mm)	G (mm)	N (mm)	T (mm)	Quantity (EA)
NLD02	178 MAX	21.0±0.8	13+0.5/-0.2	2.5+0.5/-1.0	8.4+2.0/-0	50 MIN	14.4 MAX	4,000
NLD03	178±2.0	21.0±0.8	13±0.8	-	8.4±1.0	50 MIN	12.5 MAX	4,000

Paper Tape specifications



Type	W (mm)	A (mm)	B (mm)	K (mm)	t (mm)	P (mm)
NLD02	8.00±0.20	0.80±0.03	1.30±0.03	0.67±0.03	0.75±0.03	2.00±0.10

Embossed Plastic Tape Specifications



Type	t (mm)	P1 (mm)	P (mm)	P0 (mm)	W (mm)	A0 (mm)	B0 (mm)	K0 (mm)
NLD03	0.22±0.05	2.00±0.10	4.00±0.10	4.00±0.10	8.00±0.10	1.25±0.10	1.90±0.10	1.05±0.10

■ Recommended Lead-Free IR Reflow Conditions

