

## NL Series



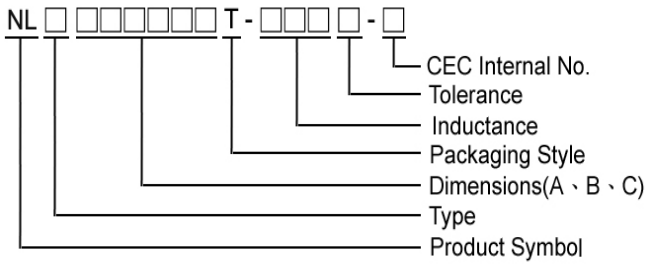
### Features

- RoHS compliant
- Strong solderability by reflow soldering and soldering iron
- Highly accurate dimensions
- Can be mounted automatically
- Terminals are highly resistant to external forces
- Highly resistant to mechanical shocks and pressure
- Highly reliable in environments of sudden temperature change and humidity
- Superior Q characteristics and the broadest L selections among peers

### Applications

- Microtelevisions
- Liquid crystal televisions
- Video cameras
- Portable VCRs
- Car radios
- Car stereos
- Thin tape radios
- Television tuners
- Mobile telephones
- Radio and other electronic devices

### Product Identification

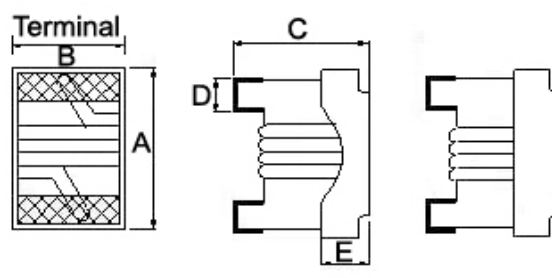
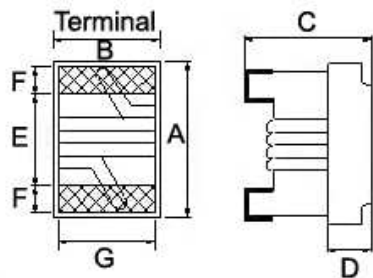


- Packaging: T : Tape and Reel

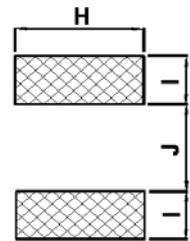
### Shape and Dimensions

NL201614

NL252018



### Recommended Pattern



Dimensions in mm

| TYPE     | A Max | B Max     | C Max | D    | E    | F    | G    | H    | I    | J    |
|----------|-------|-----------|-------|------|------|------|------|------|------|------|
| NL201614 | 2.40  | 1.72      | 1.52  | 0.70 | 1.02 | 0.50 | 1.27 | 1.78 | 1.02 | 0.76 |
| NL252018 | 2.92  | 2.50 2.79 | 2.20  | 0.51 | 0.51 | -    | -    | 2.54 | 1.02 | 1.27 |

NL252018: B Max: 2.79 mm, at 5N0-R10,  
2.50 mm, at R12-101

# SMD Wire Wound Ferrite Chip Inductors – NL Series

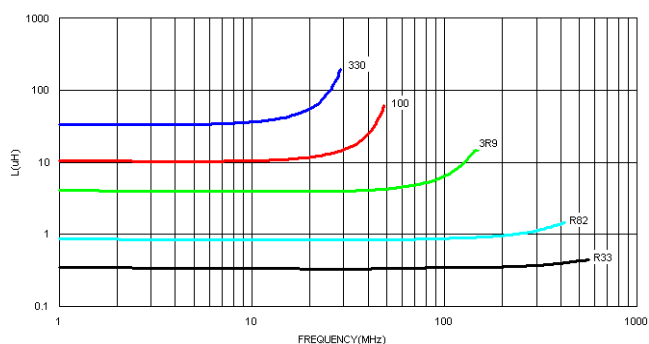
## Electrical Characteristics

| Part Number      | Inductance (uH) | Test Frequency (MHz) | Tolerance (±%) | Q Min | Test Frequency (MHz) | SRF (MHz) Min | Rdc (Ω) Max | Idc (mA) | Color  |
|------------------|-----------------|----------------------|----------------|-------|----------------------|---------------|-------------|----------|--------|
| NL201614T-R12□-N | 0.12            | 25.2                 | 10 / 5         | 25    | 25.2                 | 500           | 0.20        | 600      | White  |
| NL201614T-R15□-N | 0.15            | 25.2                 | 10 / 5         | 25    | 25.2                 | 450           | 0.25        | 600      | Black  |
| NL201614T-R18□-N | 0.18            | 25.2                 | 10 / 5         | 25    | 25.2                 | 410           | 0.30        | 570      | Brown  |
| NL201614T-R22□-N | 0.22            | 25.2                 | 10 / 5         | 25    | 25.2                 | 350           | 0.35        | 550      | Red    |
| NL201614T-R27□-N | 0.27            | 25.2                 | 10 / 5         | 25    | 25.2                 | 280           | 0.40        | 530      | Orange |
| NL201614T-R33□-N | 0.33            | 25.2                 | 10 / 5         | 25    | 25.2                 | 235           | 0.45        | 510      | Yellow |
| NL201614T-R39□-N | 0.39            | 25.2                 | 10 / 5         | 25    | 25.2                 | 210           | 0.50        | 490      | Green  |
| NL201614T-R47□-N | 0.47            | 25.2                 | 10 / 5         | 25    | 25.2                 | 170           | 0.55        | 470      | Blue   |
| NL201614T-R56□-N | 0.56            | 25.2                 | 10 / 5         | 25    | 25.2                 | 150           | 0.60        | 450      | Violet |
| NL201614T-R68□-N | 0.68            | 25.2                 | 10 / 5         | 25    | 25.2                 | 140           | 0.70        | 420      | Gray   |
| NL201614T-R82□-N | 0.82            | 25.2                 | 10 / 5         | 25    | 25.2                 | 130           | 0.75        | 400      | White  |
| NL201614T-1R0□-N | 1.00            | 7.96                 | 10 / 5         | 15    | 7.96                 | 115           | 0.80        | 350      | Black  |
| NL201614T-1R2□-N | 1.20            | 7.96                 | 10 / 5         | 15    | 7.96                 | 95            | 0.90        | 325      | Brown  |
| NL201614T-1R5□-N | 1.50            | 7.96                 | 10 / 5         | 15    | 7.96                 | 85            | 1.05        | 300      | Red    |
| NL201614T-1R8□-N | 1.80            | 7.96                 | 10 / 5         | 15    | 7.96                 | 80            | 1.20        | 270      | Orange |
| NL201614T-2R2□-N | 2.20            | 7.96                 | 10 / 5         | 15    | 7.96                 | 75            | 1.40        | 250      | Yellow |
| NL201614T-2R7□-N | 2.70            | 7.96                 | 10 / 5         | 15    | 7.96                 | 70            | 1.60        | 230      | Green  |
| NL201614T-3R3□-N | 3.30            | 7.96                 | 10 / 5         | 15    | 7.96                 | 60            | 1.80        | 210      | Blue   |
| NL201614T-3R9□-N | 3.90            | 7.96                 | 10 / 5         | 15    | 7.96                 | 55            | 2.00        | 190      | Violet |
| NL201614T-4R7□-N | 4.70            | 7.96                 | 10 / 5         | 15    | 7.96                 | 45            | 2.40        | 170      | Gray   |
| NL201614T-5R6□-N | 5.60            | 7.96                 | 10 / 5         | 15    | 7.96                 | 40            | 2.70        | 150      | White  |
| NL201614T-6R8□-N | 6.80            | 7.96                 | 10 / 5         | 15    | 7.96                 | 36            | 3.20        | 140      | Black  |
| NL201614T-8R2□-N | 8.20            | 7.96                 | 10 / 5         | 15    | 7.96                 | 33            | 3.60        | 120      | Brown  |
| NL201614T-100□-N | 10.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 30            | 4.50        | 110      | Red    |
| NL201614T-120□-N | 12.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 25            | 5.70        | 105      | Orange |
| NL201614T-150□-N | 15.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 23            | 6.50        | 90       | Yellow |
| NL201614T-180□-N | 18.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 21            | 7.00        | 85       | Green  |
| NL201614T-220□-N | 22.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 20            | 8.00        | 78       | Blue   |
| NL201614T-270□-N | 27.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 18            | 9.00        | 75       | Violet |
| NL201614T-330□-N | 33.0            | 2.52                 | 10 / 5         | 15    | 2.52                 | 17            | 10.0        | 70       | Gray   |

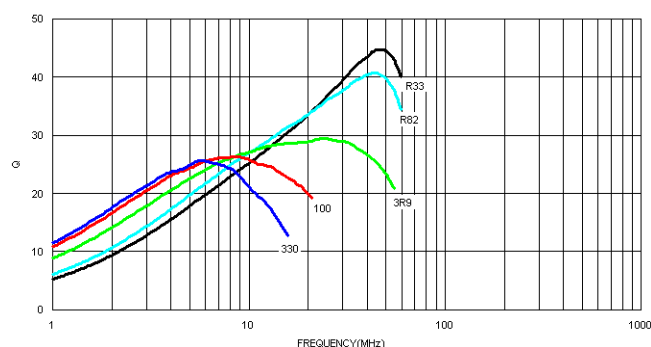
- When ordering, please specify tolerance and packaging codes.
- Tolerance : J = ±5% , K = ±10%
- L/Q : Agilent E4991A+ Agilent HP16197A
- SRF: Agilent E4991A
- Rdc: CH502BC/ HP4338B
- Idc for Inductance drop 10% from its value without current.
- Operating temperature range from -25°C to 105°C. (Including self - temperature rise)

Test Instruments : Agilent E4991A Material/Impedance Analyzer

### Typical L vs. Frequency



### Typical Q vs. Frequency

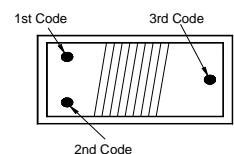


# SMD Wire Wound Ferrite Chip Inductors – NL Series

## Electrical Characteristics

| Part Number      | Inductance (uH) | Test Frequency (MHz) | Tolerance (±%) | Q Min | Test Frequency (MHz) | SRF (MHz) Min | Rdc (Ω) Max | Idc (mA) | Color Coding    |                 |                 |
|------------------|-----------------|----------------------|----------------|-------|----------------------|---------------|-------------|----------|-----------------|-----------------|-----------------|
|                  |                 |                      |                |       |                      |               |             |          | 1 <sup>ST</sup> | 2 <sup>ND</sup> | 3 <sup>RD</sup> |
| NL252018T-5N0□-N | 0.005           | 100                  | 10             | 10    | 100                  | 3000          | 0.25        | 2000     | Black           | Green           | Black           |
| NL252018T-10N□-N | 0.010           | 100                  | 10             | 10    | 100                  | 2500          | 0.25        | 1800     | Brown           | Black           | Black           |
| NL252018T-12N□-N | 0.012           | 100                  | 10             | 15    | 100                  | 2400          | 0.26        | 1700     | Brown           | Red             | Black           |
| NL252018T-15N□-N | 0.015           | 100                  | 10             | 15    | 100                  | 2300          | 0.28        | 1600     | Brown           | Green           | Black           |
| NL252018T-18N□-N | 0.018           | 100                  | 10             | 15    | 100                  | 2200          | 0.30        | 1550     | Brown           | Gray            | Black           |
| NL252018T-22N□-N | 0.022           | 100                  | 10 / 5         | 20    | 100                  | 2100          | 0.35        | 1500     | Red             | Red             | Black           |
| NL252018T-27N□-N | 0.027           | 100                  | 10 / 5         | 20    | 100                  | 2000          | 0.40        | 1450     | Red             | Violet          | Black           |
| NL252018T-33N□-N | 0.033           | 100                  | 10 / 5         | 30    | 100                  | 1600          | 0.42        | 1400     | Orange          | Orange          | Black           |
| NL252018T-39N□-N | 0.039           | 100                  | 10 / 5         | 35    | 100                  | 1500          | 0.45        | 1350     | Orange          | White           | Black           |
| NL252018T-47N□-N | 0.047           | 100                  | 10 / 5         | 35    | 100                  | 1400          | 0.50        | 1300     | Yellow          | Violet          | Black           |
| NL252018T-56N□-N | 0.056           | 100                  | 10 / 5         | 35    | 100                  | 1300          | 0.60        | 1250     | Green           | Blue            | Black           |
| NL252018T-68N□-N | 0.068           | 100                  | 10 / 5         | 35    | 100                  | 1200          | 0.65        | 1240     | Blue            | Gray            | Black           |
| NL252018T-82N□-N | 0.082           | 100                  | 10 / 5         | 35    | 100                  | 1100          | 0.75        | 1230     | Gray            | Red             | Black           |
| NL252018T-R10□-N | 0.10            | 100                  | 10 / 5         | 35    | 100                  | 800           | 0.80        | 1220     | Brown           | Black           | Brown           |
| NL252018T-R12□-N | 0.12            | 25.2                 | 10 / 5         | 30    | 25.2                 | 700           | 0.30        | 900      | Brown           | Red             | Brown           |
| NL252018T-R15□-N | 0.15            | 25.2                 | 10 / 5         | 30    | 25.2                 | 550           | 0.35        | 900      | Brown           | Green           | Brown           |
| NL252018T-R18□-N | 0.18            | 25.2                 | 10 / 5         | 30    | 25.2                 | 500           | 0.40        | 850      | Brown           | Gray            | Brown           |
| NL252018T-R22□-N | 0.22            | 25.2                 | 10 / 5         | 30    | 25.2                 | 450           | 0.50        | 840      | Red             | Red             | Brown           |
| NL252018T-R27□-N | 0.27            | 25.2                 | 10 / 5         | 30    | 25.2                 | 425           | 0.55        | 830      | Red             | Violet          | Brown           |
| NL252018T-R33□-N | 0.33            | 25.2                 | 10 / 5         | 30    | 25.2                 | 400           | 0.60        | 820      | Orange          | Orange          | Brown           |
| NL252018T-R39□-N | 0.39            | 25.2                 | 10 / 5         | 30    | 25.2                 | 375           | 0.65        | 810      | Orange          | White           | Brown           |
| NL252018T-R47□-N | 0.47            | 25.2                 | 10 / 5         | 30    | 25.2                 | 350           | 0.68        | 800      | Yellow          | Violet          | Brown           |
| NL252018T-R56□-N | 0.56            | 25.2                 | 10 / 5         | 30    | 25.2                 | 325           | 0.75        | 800      | Green           | Blue            | Brown           |
| NL252018T-R68□-N | 0.68            | 25.2                 | 10 / 5         | 30    | 25.2                 | 300           | 0.85        | 800      | Blue            | Gray            | Brown           |
| NL252018T-R82□-N | 0.82            | 25.2                 | 10 / 5         | 30    | 25.2                 | 260           | 1.0         | 800      | Gray            | Red             | Brown           |
| NL252018T-1R0□-N | 1.0             | 7.96                 | 10 / 5         | 25    | 7.96                 | 245           | 1.1         | 800      | Brown           | Black           | Red             |
| NL252018T-1R2□-N | 1.2             | 7.96                 | 10 / 5         | 25    | 7.96                 | 230           | 1.2         | 790      | Brown           | Red             | Red             |
| NL252018T-1R5□-N | 1.5             | 7.96                 | 10 / 5         | 25    | 7.96                 | 182           | 1.3         | 750      | Brown           | Green           | Red             |
| NL252018T-1R8□-N | 1.8             | 7.96                 | 10 / 5         | 25    | 7.96                 | 135           | 1.45        | 750      | Brown           | Gray            | Red             |
| NL252018T-2R2□-N | 2.2             | 7.96                 | 10 / 5         | 25    | 7.96                 | 105           | 1.55        | 750      | Red             | Red             | Red             |
| NL252018T-2R7□-N | 2.7             | 7.96                 | 10 / 5         | 25    | 7.96                 | 70            | 1.7         | 740      | Red             | Violet          | Red             |
| NL252018T-3R3□-N | 3.3             | 7.96                 | 10 / 5         | 25    | 7.96                 | 55            | 1.9         | 730      | Orange          | Orange          | Red             |
| NL252018T-3R9□-N | 3.9             | 7.96                 | 10 / 5         | 25    | 7.96                 | 48            | 2.1         | 700      | Orange          | White           | Red             |
| NL252018T-4R7□-N | 4.7             | 7.96                 | 10 / 5         | 25    | 7.96                 | 43            | 2.3         | 650      | Yellow          | Violet          | Red             |
| NL252018T-5R6□-N | 5.6             | 7.96                 | 10 / 5         | 20    | 7.96                 | 42            | 2.5         | 640      | Green           | Blue            | Red             |
| NL252018T-6R8□-N | 6.8             | 7.96                 | 10 / 5         | 20    | 7.96                 | 39            | 2.7         | 630      | Blue            | Gray            | Red             |
| NL252018T-8R2□-N | 8.2             | 7.96                 | 10 / 5         | 20    | 7.96                 | 36            | 3.05        | 600      | Gray            | Red             | Red             |
| NL252018T-100□-N | 10              | 2.52                 | 10 / 5         | 15    | 2.52                 | 33            | 3.5         | 600      | Brown           | Black           | Orange          |
| NL252018T-120□-N | 12              | 2.52                 | 10 / 5         | 15    | 2.52                 | 30            | 3.8         | 550      | Brown           | Red             | Orange          |
| NL252018T-150□-N | 15              | 2.52                 | 10 / 5         | 15    | 2.52                 | 26            | 4.4         | 430      | Brown           | Green           | Orange          |
| NL252018T-180□-N | 18              | 2.52                 | 10 / 5         | 15    | 2.52                 | 24            | 4.8         | 400      | Brown           | Gray            | Orange          |
| NL252018T-220□-N | 22              | 2.52                 | 10 / 5         | 15    | 2.52                 | 22            | 5.5         | 400      | Red             | Red             | Orange          |
| NL252018T-270□-N | 27              | 2.52                 | 10 / 5         | 15    | 2.52                 | 21            | 6.3         | 360      | Red             | Violet          | Orange          |
| NL252018T-330□-N | 33              | 2.52                 | 10 / 5         | 15    | 2.52                 | 20            | 7.1         | 350      | Orange          | Orange          | Orange          |
| NL252018T-390□-N | 39              | 2.52                 | 10 / 5         | 10    | 2.52                 | 18            | 9.5         | 330      | Orange          | White           | Orange          |
| NL252018T-470□-N | 47              | 2.52                 | 10 / 5         | 10    | 2.52                 | 17            | 11.1        | 300      | Yellow          | Violet          | Orange          |
| NL252018T-560□-N | 56              | 2.52                 | 10 / 5         | 10    | 2.52                 | 16            | 12.1        | 270      | Green           | Blue            | Orange          |
| NL252018T-680□-N | 68              | 2.52                 | 10 / 5         | 10    | 2.52                 | 15            | 16.6        | 250      | Blue            | Gray            | Orange          |
| NL252018T-820□-N | 82              | 2.52                 | 10 / 5         | 10    | 2.52                 | 13            | 19          | 200      | Gray            | Red             | Orange          |
| NL252018T-101□-N | 100             | 0.796                | 10 / 5         | 8     | 0.796                | 12            | 21          | 120      | Brown           | Black           | Yellow          |

- When ordering, please specify tolerance and packaging codes.
- Tolerance : J = ±5% , K = ±10%
- L/Q : Agilent E4991A+ Agilent HP16197A(Over 1MHz) or Agilent/HP4285A+ Agilent HP16197A(Under 1MHz)
- SRF : Agilent HP8753D / Agilent E4991A
- RDC : CH502BC/ HP4338B
- Idc for Inductance drop 10% from its value without current.
- Operating temperature range from -25°C to 105°C. (Including self - temperature rise)

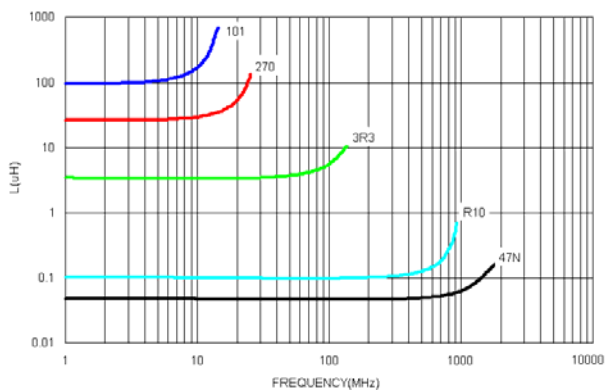


**COLOR CODING**

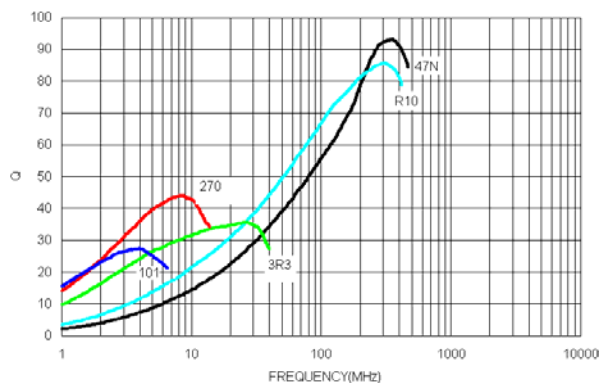
# SMD Wire Wound Ferrite Chip Inductors – NL Series

Test Instruments : Agilent E4991A Material/Impedance Analyzer

## Typical L vs. Frequency

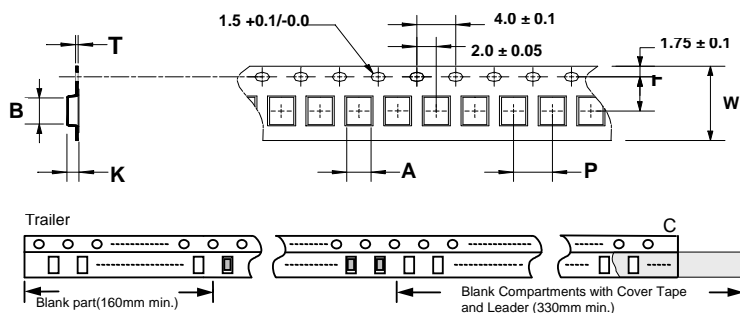


## Typical Q vs. Frequency

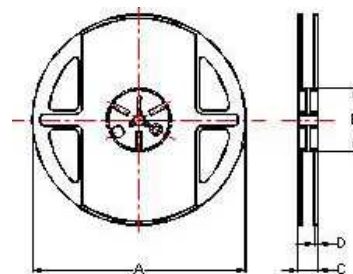


## Packaging Specifications

### Tape Dimensions



### Reel Dimensions



### Dimensions in mm

| TYPE              | Tape Dimensions |      |      |   |   |     |      | Reel Dimensions |    |    |     | Quantity<br>PCS / Reel |
|-------------------|-----------------|------|------|---|---|-----|------|-----------------|----|----|-----|------------------------|
|                   | A               | B    | T    | W | P | F   | K    | A               | B  | C  | D   |                        |
| NL201614          | 1.85            | 2.45 | 0.23 | 8 | 4 | 3.5 | 1.45 | 178             | 60 | 12 | 1.5 | 2000                   |
| NL252018(5N0~R10) | 2.80            | 2.95 | 0.23 | 8 | 4 | 3.5 | 2.20 | 178             | 60 | 12 | 1.5 | 2000                   |
| NL252018(R12~101) | 2.61            | 2.93 | 0.26 | 8 | 4 | 3.5 | 2.25 | 178             | 60 | 12 | 1.5 | 2000                   |