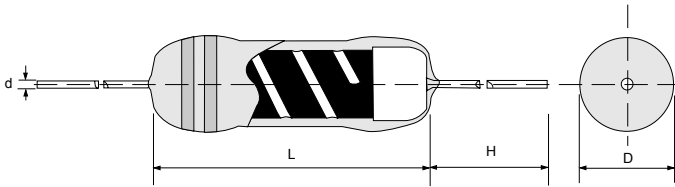


NL-Series Non-inductive Resistor

Quality • Reliability
Cost-Down via Technology

NL-Series



Features

- Non-inductive resistor is required by environment that demands consistent performance. With our proprietary conductive film, this NL series is designed to be low temperature coefficient and perform with low noise and virtually no inductance.
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000Pcs
NL51	8.8 ± 1.0	3.2 ± 0.2	26 ± 3.0	0.7 ± 0.03	340 Grams
NL100	11.0 ± 1.0	4.0 ± 0.5	28 ± 3.0	0.7 ± 0.03	500 Grams
NL200	13.5 ± 1.0	5.0 ± 0.5	30 ± 3.0	0.8 ± 0.03	1050 Grams
NL300	15.5 ± 1.0	5.5 ± 0.5	30 ± 3.0	0.8 ± 0.03	1200 Grams
NL400	19.0 ± 1.0	6.0 ± 0.5	30 ± 3.0	0.8 ± 0.03	1620 Grams
NL500	19.0 ± 1.0	8.0 ± 0.5	30 ± 3.0	0.8 ± 0.03	3100 Grams
NL700	31.5 ± 1.0	8.0 ± 0.5	30 ± 3.0	0.8 ± 0.03	4000 Grams
NL1000	52.5 ± 1.5	8.0 ± 0.5	39 ± 3.0	0.8 ± 0.03	6900 Grams
NL2000	66.0 ± 2.0	8.0 ± 0.5	39 ± 3.0	0.8 ± 0.03	9000 Grams

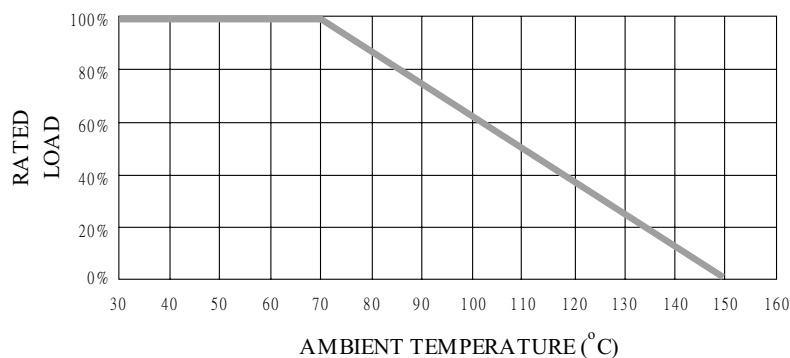
NL1000 & NL2000 available only in bulk package.

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
NL51	1/2W	350V	700V	0.1 Ω	10KΩ	±1%, ±5%	E-24 / E-96
NL100	1W	350V	700V	0.1 Ω	10KΩ	±1%, ±5%	E-24 / E-96
NL200	2W	350V	700V	0.1 Ω	12KΩ	±1%, ±5%	E-24 / E-96
NL300	3W	350V	700V	0.1 Ω	15KΩ	±1%, ±5%	E-24 / E-96
NL400	4W	450V	800V	0.1 Ω	18KΩ	±1%, ±5%	E-24 / E-96
NL500	5W	500V	1000V	0.1 Ω	20KΩ	±1%, ±5%	E-24 / E-96
NL700	7W	600V	1200V	0.22 Ω	22KΩ	±1%, ±5%	E-24 / E-96
NL1000	10W	1000V	2000V	0.33 Ω	27KΩ	±1%, ±5%	E-24 / E-96
NL2000	20W	2000V	4000V	1 Ω	47KΩ	±1%, ±5%	E-24 / E-96

Special sizes, values, and specifications not listed available on special order.

POWER DERATING CURVE



■ PART NUMBER

Example: NL200J10K0TKZTB500

NL200	J	10K0	TKZ	TB500
Type	Tolerance*	Resistance	TCR	Packaging
	F (1%) J (5%)	10KΩ 4-character code containing - 3 significant digits 1 letter multiplier <u>MULTIPLIER</u> R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.**	5-character code TB = Tape Box (pieces per box) <u>NL51</u> 2K0 = 2,000 <u>NL100</u> 1K0 = 1,000 <u>NL200/300/400</u> 500 = 500 <u>NL500</u> 400 = 400 <u>NL700</u> 250 = 250 (Bulk Packaging Only) <u>NL1000/NL2000</u> BK + Quantity

* Listed values may not be applicable to all product types or to all resistance values. Please check with us before placing order.

**For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

■ TECHNICAL SUMMARY

Characteristics	Limits	
Dielectric Withstanding Voltage, VAC or DC	NL51: NL100/ 200: NL300 to 2000:	350 600 1000
Temperature Coefficient, PPM / °C*	±100, ±300	
Operating Temperature Range, °C	-55~+150	
Insulation Resistance, MΩ	10 ⁴	

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	±3%
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±3%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	90% Min.
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 1.52mm and 10 to 2,000 Hz.	±1%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 150°C without load	±2%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +150°C 30minutes, 5 cycles	±3%