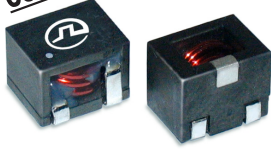


SMT Power Inductors

Round wire Coils- PG1083NL series



- Inductance Range: 1.0uH to 50.0uH
- Height: 12.5mm Max
- Current Rating: up to 70Apk
- No Thermal Aging
- Footprint: 21.7mm x 21.5mm Max
- RoHS Compliant

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C¹

Part Number	Inductance ² @ Irated (μH Typical)	Irated ³ (A)	Controlled Electrical Specs.		Saturation ⁵ Current Isat (A TYP)		Heating Current ⁶ Idc (A TYP)	Core Loss Factor ⁷ (K2)	Size X (REF.)	Height (MAX.)
			DCR ⁴ (mΩ) MAX	Inductance @ 0Adc (μH ± 20%)	25°C	100°C				
PG1083.102NL	0.95	40	1.4	1.00	70	65	40	17.9	0.098 [2.50] BOTTOM VIEW A	0.417 [10.6]
PG1083.152NL	1.35	40	1.4	1.50	52	45	40	26.8		
PG1083.222NL	1.95	34	1.8	2.20	46	37	34	29.5		
PG1083.322NL	2.70	28	2.2	3.30	37	33	28	35.4		
PG1083.472NL	4.10	26	2.8	4.70	30	24	26	50.4		
PG1083.682NL	6.10	22	3.8	6.80	26	20	22	52.1		
PG1083.103NL	8.60	17.5	6.0	10.5	22.5	18	17.5	62.6	0.054 [1.40] BOTTOM VIEW B	0.492 [12.50]
PG1083.153NL	12.6	14	9.2	15.2	18.5	14	14.0	74.1		
PG1083.253NL	21.0	11	15.0	24.5	14.5	12	11.0	93.9		
PG1083.323NL	27.9	9	21.5	32.0	12.5	10	9.0	107.3		
PG1083.503NL	45.2	7.4	32.6	50.0	10.0	8.5	7.4	134.1		

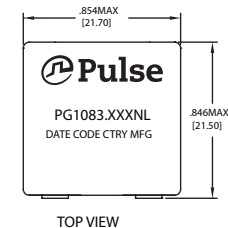
Notes:

- Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
- Inductance at Irated is a typical inductance value for the component taken at rated current.
- The rated current as listed is either the saturation current (@ 25°C) or the heating current depending on which value is lower.
- The DCR of the part is measured at an ambient temperature of 20°C±3°C from point a to b as shown below on the mechanical drawing.
- The saturation current, Isat, is the current at which the component inductance drop by 20% (typical) at an ambient temperature. This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effect) to the component.
- The heating current, Idc, is the DC current required to raise the component temperature by approximately 40°C. The heating current is determined by mounting the component on a typical PCB and applying current for 30 minutes. The temperature is measured by placing the thermocouple on top of the unit under test. Take note that the components' performance varies depending on the system condition. It is suggested that the component be tested at the system level, to verify the temperature rise of the component during system operation.
- Core loss approximation is based on published core data (at 100°C):
Core Loss = $K1 \cdot (f)^{1.38} \cdot (K2 \cdot \Delta I)^{2.864}$ in mW
K1 = 1.01E-9
f = switching frequency in KHz
K1 & K2 = core loss factors
 ΔI = delta I across the component in Ampere
K2·ΔI = one half of the peak to peak flux density across the component in Gauss
- Unless otherwise specified, all testing is made at 100kHz, 0.1Vac
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG1083.682NL becomes PG1083.682NLT). Pulse complies with industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=44.0mm), pitch (Po=32.0mm). The depth (Ko) has two types: 1) 10.6 mm for parts with height of 10.6mm max, 120 pieces/reel; 2) 12.9mm for the parts of 12.5mm max, 100 pieces/reel.

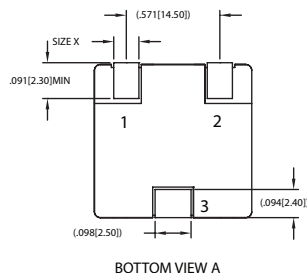
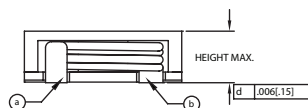
Mechanicals

Schematic

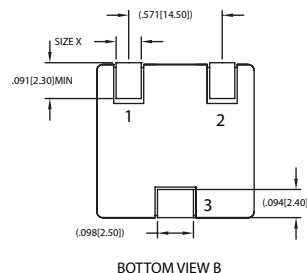
PG1083.XXXNL



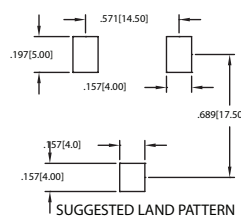
TOP VIEW



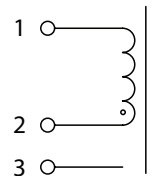
BOTTOM VIEW A



BOTTOM VIEW B



SUGGESTED LAND PATTERN



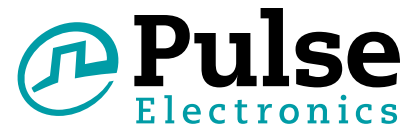
Weight.....18.6 grams
Tape and Reel.....100/tray

Dimensions: $\frac{\text{Inches}}{\text{mm}}$

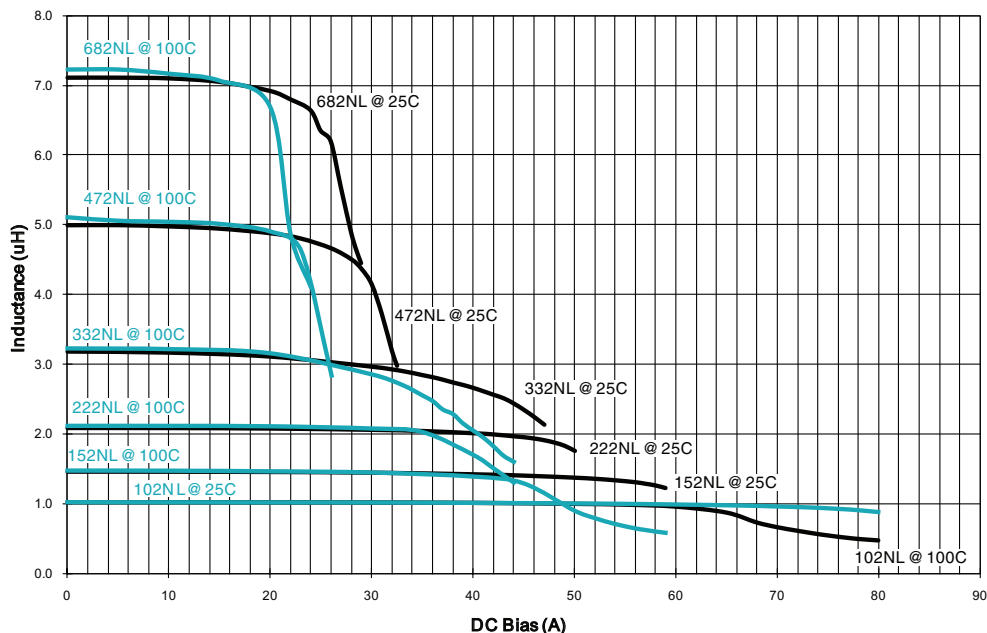
Unless otherwise specified, all tolerances are $\pm \frac{0.01}{0.25}$

SMT Power Inductors

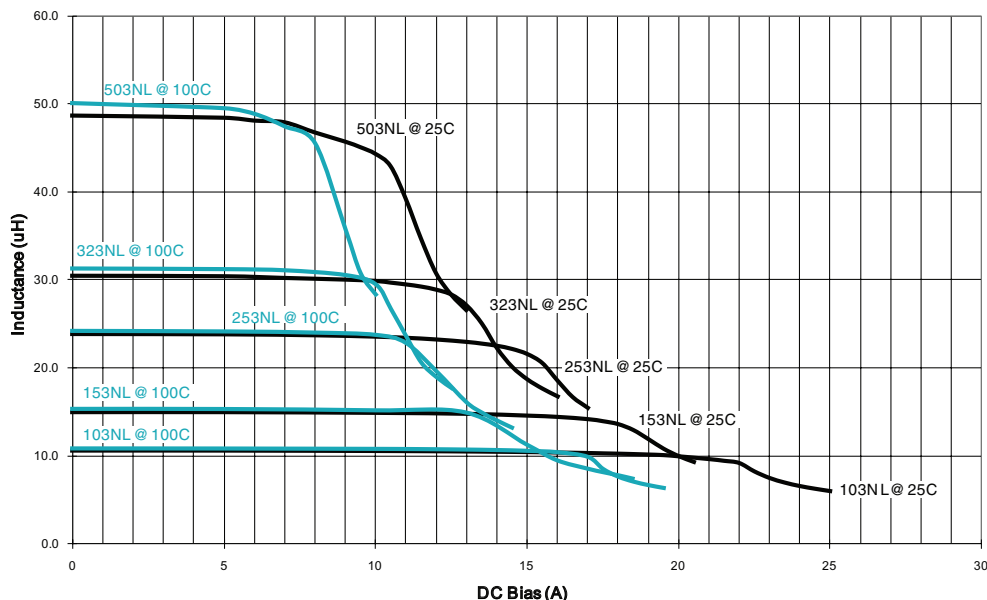
Round wire Coils- PG1083NL series



Typical Inductance VS DC bias



Typical Inductance VS DC bias



For More Information

Pulse Worldwide Headquarters

12220 World Trade Drive
San Diego, CA 92128
U.S.A.

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe

Zeppelinstrasse 15
71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 12

Pulse China Headquarters

B402, Shenzhen Academy of
Aerospace Technology Bldg.
10th Kejinan Road
High-Tech Zone
Nanshan District
Shenzhen, PR China 518057
Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China

Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Road West
Shanghai 200336
China

Tel: 86 21 62787060
Fax: 86 2162786973

Pulse South Asia

135 Joo Seng Road
#03-02
PM Industrial Bldg.
Singapore 368363

Tel: 65 6287 8998
Fax: 65 6287 8998

Pulse North Asia

3F No. 198, Zhongyuan Road
Zhongli City
Taoyuan County (32068)
Taiwan

Tel: 886 3 4356768
Fax: 886 3 4356823

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