SMT Power Inductors

Round Wire Coils – PG0871NL series

Pulse a YAGEO company

- ***Current Rating:*** *up to 28Apk*
- ***Inductance Range:*** *0.46uH to 10.5uH*
- ***Height:*** *6.4mm Max*
- ***Footprint:*** *7.6mm x 7.4mm Max*

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [1]

Part Number	Inductance @Irated [2] (µH TYP)	Irated [3] (A)	Controlled Electical Specs		Saturation Current Isat [5] (A TYP)		SRF (MHz TYP)	Heating Current [6] Idc (A TYP)	Core Loss [7] Factor (K2)
			DCR [4] (mΩ) ±8%	Inductance @ 0Adc (µH ± 20%)	25°C	100°C			
PG0871.461NL	0.42	24.0	1.5	0.46	28.0	25.0	88	24.0	14.196
PG0871.681NL	0.64	19.0	2.3	0.68	24.5	20.0	90	19.0	10.647
PG0871.821NL	0.71	19.0	2.3	0.82	21.0	18.0	62	19.0	10.647
PG0871.102NL	0.80	17.5	2.3	1.00	17.5	15.5	78	19.0	10.647
PG0871.152NL	1.20	13.5	4.4	1.5	14	12.5	69	13.5	8.517
PG0871.222NL	2.00	9.5	7.6	2.20	12.0	10.5	72	9.5	7.098
PG0871.332NL	3.00	7.1	13.5	3.30	10.5	9.5	62	7.1	5.324
PG0871.472NL	4.50	6.7	17.0	4.70	9.3	8.0	40	6.7	4.259
PG0871.682NL	6.40	5.8	20.0	6.80	7.8	6.5	40	5.8	3.549
PG0871.922NL	8.80	4.9	30.0	9.20	6.7	5.5	33	4.9	3.042
PG0871.103NL	9.50	4.7	31.5	10.50	6.3	5.3	22	4.7	2.839

NOTES:

1. Actual temperature of the component during system operation(ambient plus temperature rise) must be within the standard operating range.
2. Inductance at Irated is a typical inductance value for the component taken at rated current.
3. The rated current as listed is either the saturation current (@ 25°C) or the heating current depending on which value is lower.
4. The DCR of the part is measured at an ambient temperature of 20°C±3°C from point a and b as shown below on the mechanical drawing.
5. The saturation current, Isat, is the current at which the component inductance drop by 20% (typical) at an ambient temperature of 25°C. 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.
6. 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.
7. Core loss approximation is based on published core data:
   Core Loss = $K1 * (f)^{1.324} * (\Delta B)^{2.422}$ in mW
   K1 = 71.56 E-4
   ΔB = K2 * Vusec in mT
   f = switching frequency in MHz
   K1 & K2 = core loss factors
   V = Voltage across the component in V
   Vusec = V * D /f
   D = Duty cycle
8. Unless otherwise specified, all testing is made at 100kHz, 0.1Vac
9. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG0871.222NL becomes PG0871.222NLT). Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width(W=16.0mm), pitch(Po=12.0mm) and depth (Ko=6.8 mm).
10. The core is a conductive material so care should be taken when mounting this component over an exposed via or if the voltage across the terminals exceeds 24V. Trickle current through the core material may generate additional losses and potential overheating. Please contact Pulse to discuss an alternative solution if required.

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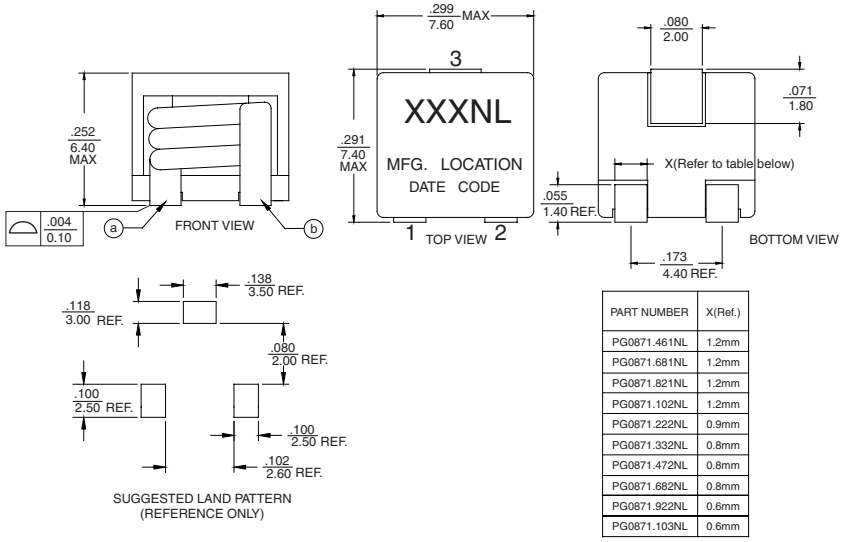
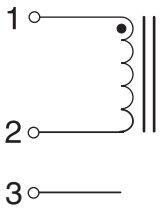
Mechanicals



PART NUMBER	X(Ref.)
PG0871.461NL	1.2mm
PG0871.681NL	1.2mm
PG0871.821NL	1.2mm
PG0871.102NL	1.2mm
PG0871.222NL	0.9mm
PG0871.332NL	0.8mm
PG0871.472NL	0.8mm
PG0871.682NL	0.8mm
PG0871.922NL	0.6mm
PG0871.103NL	0.6mm

Schematics



*** Pin 3 is for mechanical support only and has no internal electrical connection.**

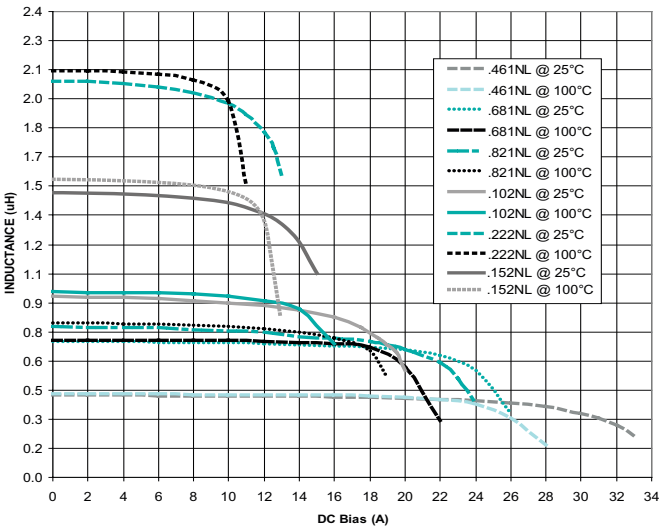
Weight ..... 1.1 grams

Tape & Reel 700/reel

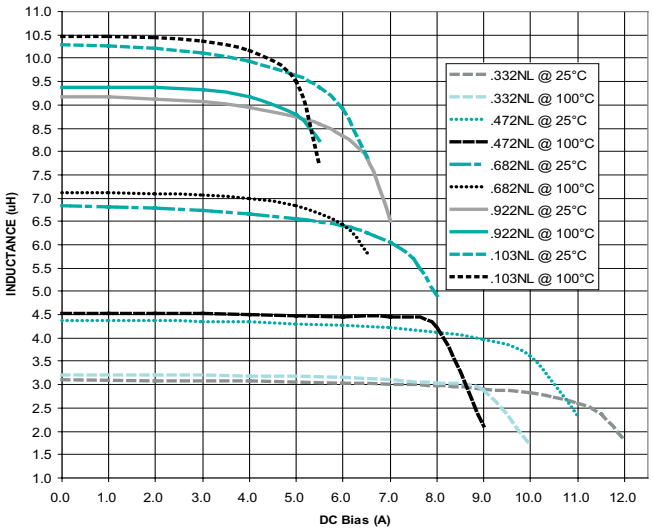
Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25

Typical Inductance vs DC Bias @25°C and 100°C



Typical Inductance vs DC Bias @25°C and 100°C



For More Information:

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