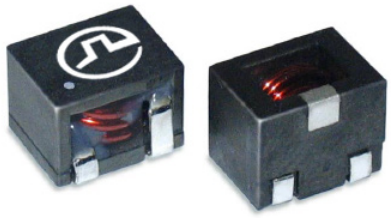
SMT Power Inductors

Round Wire Coils - PG0702NL



- ***Height:*** *8.0mm Max*
- ***Footprint:*** *10.8mm x 9.2mm Max*
- ***Saturation Current:*** *up to 42.5A*
- ***No thermal aging***

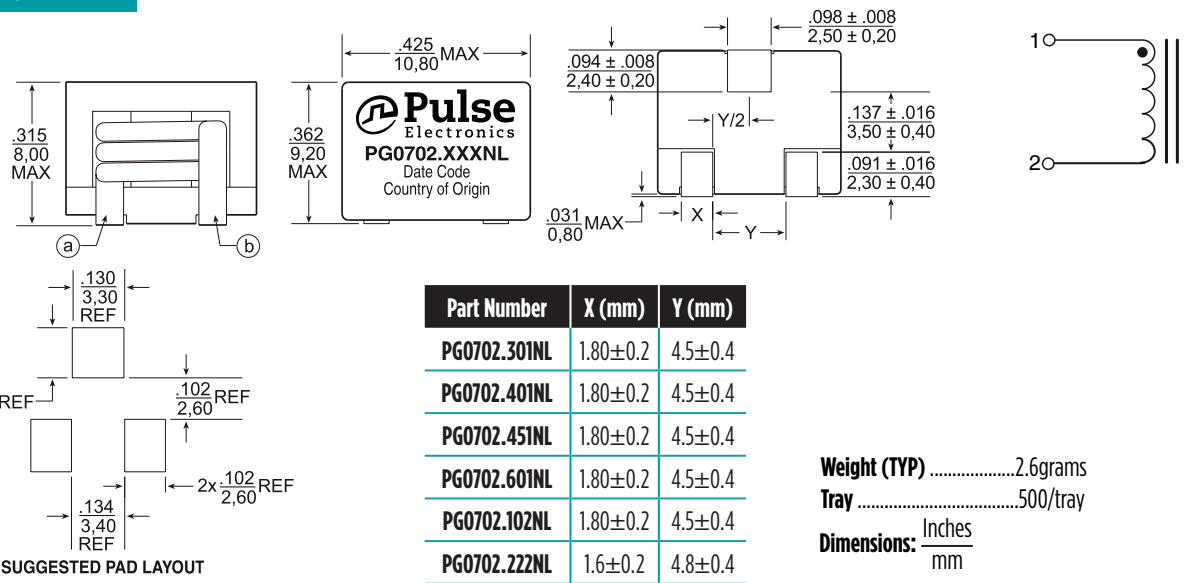
Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C [1]

Part Number	Inductance [2] @ Irated (µH TYP)	Irated [3] (A) Factor	DCR [4] (mΩ) (±6%)	Inductance @ OADC (µH ±20%)	Saturation Current Isat (A TYP) 25°C	Saturation Current Isat (A TYP) 100°C	Heating [6] Current IDC (A TYP)	Core Loss [7] Factor K2
PG0702.301NL	0.24	42.5	0.68	0.30	42.5	33.5	47.0	30.8
PG0702.401NL	0.38	38.0	0.91	0.40	43.0	34.0	38.0	27.4
PG0702.451NL	0.41	38.0	0.91	0.45	41.0	31.7	38.0	30.8
PG0702.601NL	0.48	32.0	091	0.60	32.0	25.5	38.0	41.1
PG0702.102NL	0.80	26.0	1.76	1.00	26.0	20.3	26.1	51.4
PG0702.222NL	1.76	15.9	3.30	2.20	15.9	12.7	16.4	90.5
PG0702.302NL	2.90	12.4	5.90	3.00	16.0	12.5	12.4	102.8
PG0702.472NL	3.76	8.4	5.30	4.70	8.4	6.7	13.2	161.0
PG0702.682NL	5.44	8.5	7.70	6.80	8.5	6.8	9.6	155.4

Mechanical

Schematic

PG0702.XXXNL



SUGGESTED PAD LAYOUT

Part Number	X (mm)	Y (mm)
PG0702.301NL	1.80±0.2	4.5±0.4
PG0702.401NL	1.80±0.2	4.5±0.4
PG0702.451NL	1.80±0.2	4.5±0.4
PG0702.601NL	1.80±0.2	4.5±0.4
PG0702.102NL	1.80±0.2	4.5±0.4
PG0702.222NL	1.6±0.2	4.8±0.4
PG0702.302NL	1.6±0.2	4.8±0.4
PG0702.472NL	1.6±0.2	4.8±0.4
PG0702.682NL	1.6±0.2	4.8±0.4

Weight (TYP) 2.6grams
Tray 500/tray
Dimensions: Inches / mm

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

USA 858 674 8100 Germany 49 2354 777 100 Singapore 65 6287 8998 Shanghai 86 21 62787060 China 86 755 33966678 Taiwan 886 3 4356768

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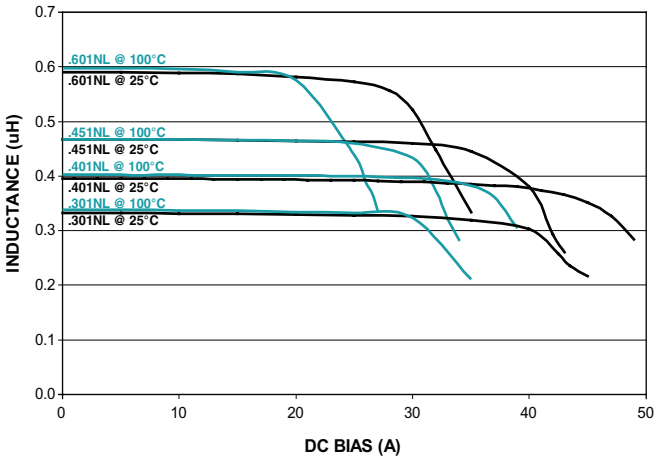
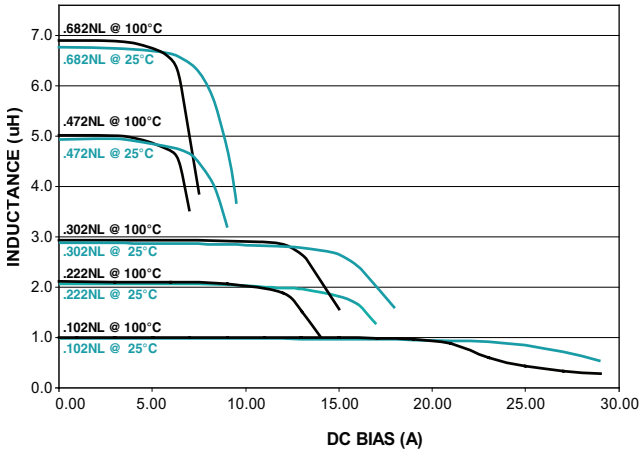
Notes:

1. Actual temperature of the component (ambient plus temperature rise) must be within thestandard operating temperature range.
2. Inductance at Irated is a typical inductance value for the component taken at rated current.
3. The rated current listed is the lower of the saturation current (@ 25°C) or the heating current depending on which value is lower.
4. 4. The DCR of the part is measured at an ambient temperature of 20C 3C from point a and b as shown above on the mechanical drawing.
5. The saturation current, I_{SAT}, is the current at which the component inductance drops 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 effects) to the component.
6. The heating current, I_{DC}, is the DC current required to raise the component temperature byapproximately 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 component's 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 = $K1 * (f)^{1.12} * (K2\Delta I)^{2.17}$
   Where: Core Loss = in Watts
   K1 = 2.20E-11
   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
8. Unless otherwise specified, all testing is made at 100kHz, $0.1V_{AC}$.
9. Optional Tape & Reel packaging can be ordered by adding a "**T**" suffix to the part number (i.e. PG0702.401NL becomes PG0702.401NL**T**). Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=24.0mm), pitch (Po=16mm) and depth (Ko=8.9mm).
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.

Typical Inductance vs Current Characteristics @ 25°C and 100°C





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