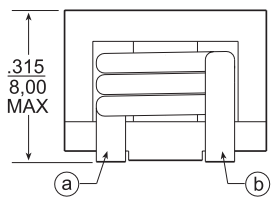
SMT POWER INDUCTORS
Round Wire Coils - PG0702NL

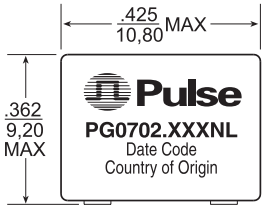
- **Height:** 8.0mm Max
- **Footprint:** 10.8mm x 9.2mm Max
- **Peak Current Rating:** up to 42.5A
- No thermal aging

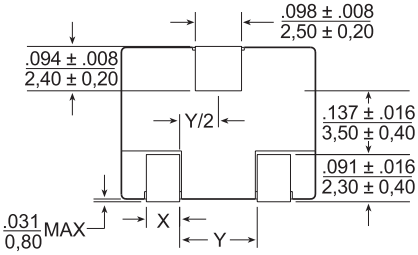
Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [1]

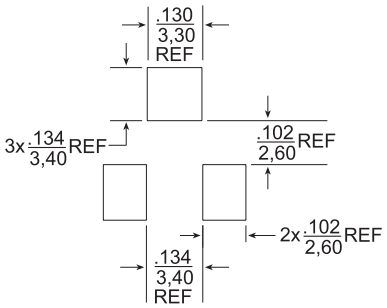
Part Number	Inductance [2] @ Irated (µH TYP)	Irated [3] (A) Factor	DCR [4] (mΩ) (±6%)	Inductance @0Adc (µH ±20%)	Saturation [5] Current Isat (A TYP)		Heating [6] Current Idc (A TYP)	Core Loss [7] Factor K2
					25°C	100°C		
PG0702.301NL	0.24	42.5	0.68	0.30	42.5	33.5	47.0	30.8
PG0702.401NL	0.38	38.0	0.91	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	0.91	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





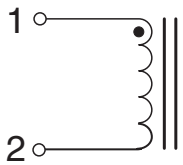




SUGGESTED PAD LAYOUT

Part No.	X (mm)	Y (mm)
PG0702.301NL	1.8±0.2	4.5±0.4
PG0702.401NL	1.8±0.2	4.5±0.4
PG0702.451NL	1.8±0.2	4.5±0.4
PG0702.601NL	1.8±0.2	4.5±0.4
PG0702.102NL	1.8±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

Schematic



Weight..... 2.6 grams
Tape & Reel..... 500/reel
Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

SMT POWER INDUCTORS
Round Wire Coils - PG0702NL Series

Notes from Tables

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 above on the mechanical drawing.
5. The saturation current, Isat, 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 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 in the coil 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 * $(f)^{1.12}$ * $(K2\Delta I)^{2.17}$

   Where: Core Loss = in Watts

   K1= 2.20E-11

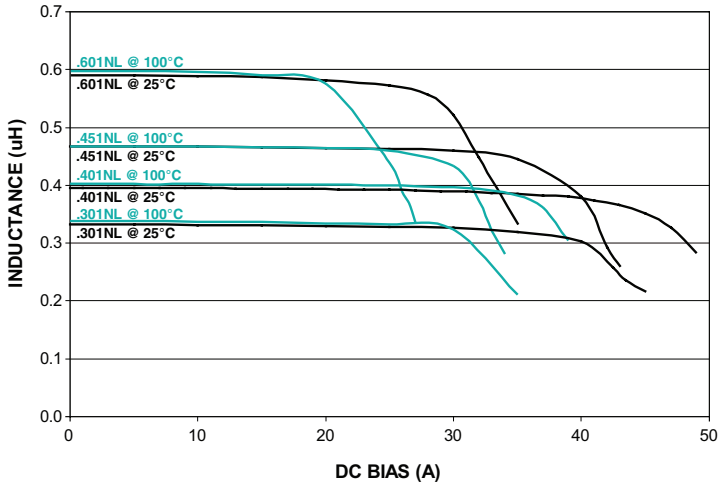
   f = switching frequency in kHz

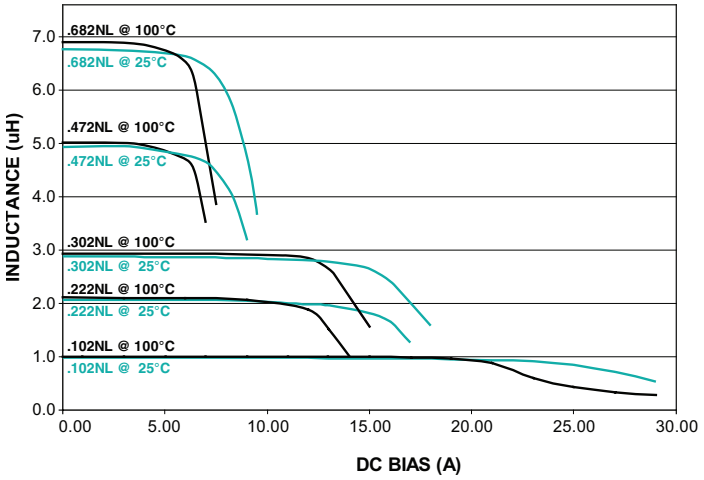
   K1 & K2 = core loss factors

   ΔI = delta I across the component in Ampere

   K2ΔI = one half of the peak to peak flux density across the component in Gauss
8. Unless otherwise specified, all testing is made at 100kHz, 0.1VAC.
9. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG0702.401NL becomes PG0702.401NLT). 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=16.0mm) and depth (Ko=8.9 mm).

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





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