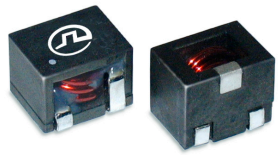
SMT Power Inductors

Round wire Coils– PG1096NL series



- *Inductance Range: 1.5uH to 82uH*
- *Current Rating: up to 65Apk*
- *Footprint: 26mm x 26mm Max*
- *Height: 14.8mm Max*
- *No Thermal Aging*
- *RoHS Compliant*

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

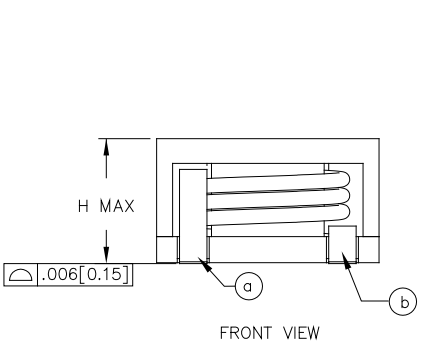
Part Number	Inductance @ Irated[2] µH TYPICAL	Irated[3] (A)	Controlled Electrical Specs.		Saturation[5] Current Isat (A TYP)		Heating Current[6] Idc (A TYP)	Core Loss Factor[7] (K2)
			DCR[4] (mΩ) MAX	Inductance @ 0Adc (µH ± 20%)	25°C	100°C		
PG1096.152NL	1.35	50	0.85	1.5	65	50.5	50	27.9
PG1096.252NL	2.25	45	1.2	2.5	55	43	45	31
PG1096.472NL	4.2	35	1.8	4.7	40	31	35	43.7
PG1096.682NL	6	30	2	6.8	35	27.5	30	50.6
PG1096.103NL	9	24.5	3.15	10	28	21.8	24.5	62
PG1096.183NL	16	18.5	5	18	21	16.5	18.5	83.6
PG1096.223NL	19.5	17	5.5	22	19	14.8	17	90.9
PG1096.333NL	29.5	13.5	10.5	33	15.5	12	13.5	111.5
PG1096.473NL	42.3	11	12.5	47	13	10	11	134.4
PG1096.683NL	61	9.5	15	68	11	8.6	9.5	168.5
PG1096.823NL	73.5	8.5	22	82	10	7.8	8.5	179.3

Notes:

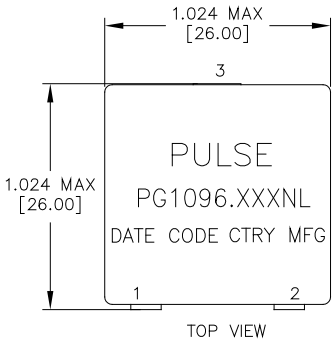
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. Inductance at Irated is a typical inductance value for the component taken at rated current.
3. The rated current as listed is either the saturation current (@ 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 to 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. 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 * $(f)^{1.42}$ * $(K2\Delta I*0.1)^{2.57}$ in mW
   K1=2.86E-06 (2.50E-06 FOR PG1096.152NL)
   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. PG1096.223NL becomes PG1096.223NLT). 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=36.0mm) and depth (Ko=15.6mm).
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.

Mechanicals

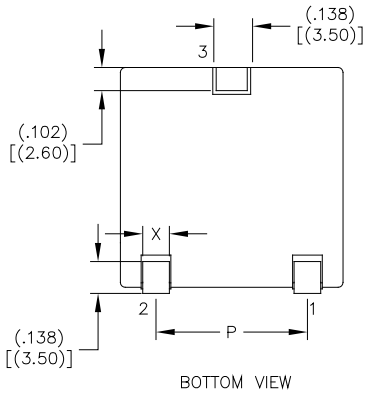
PG1096.XXXNL



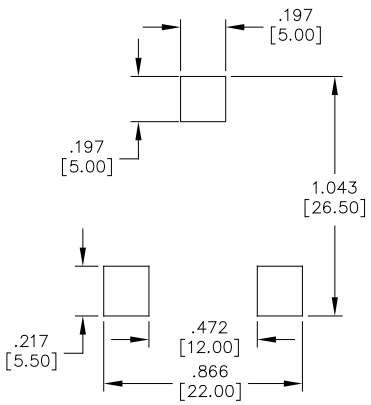
FRONT VIEW



TOP VIEW

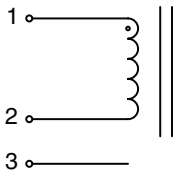


BOTTOM VIEW



SUGGESTED LAND PATTERN

Schematic



*PIN 3 IS FOR MECHANICAL SUPPORT ONLY
AND HAS NO INTERNAL ELECTRICAL CONNECTION

Part Number	Lead Width (X) Ref	H (Height)	P (Pin Pitch)
PG1096.152NL	3.0mm	13mm	17.00±1.00mm
PG1096.252NL	3.0mm	14.8mm	
PG1096.472NL	3.0mm		
PG1096.682NL	3.0mm		
PG1096.103NL	3.0mm		
PG1096.183NL	3.0mm		
PG1096.223NL	3.0mm		
PG1096.333NL	3.0mm		
PG1096.473NL	3.0mm		
PG1096.683NL	3.0mm		
PG1096.823NL	2.3mm		17.00±1.70mm

Weight.....34.0 grams (28.0 grams for PG1096.152NL)
Tape and Reel.....60/reel

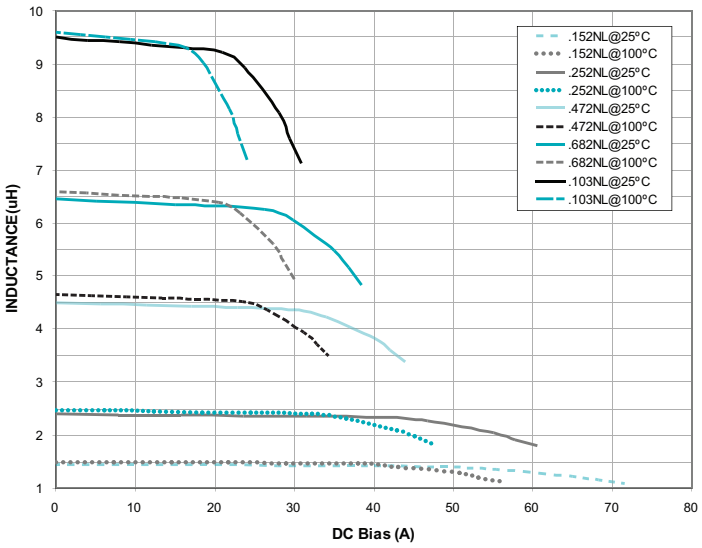
Dimensions: Inches / mm

Unless otherwise specified, all tolerences are ± 0.01 / 0.25

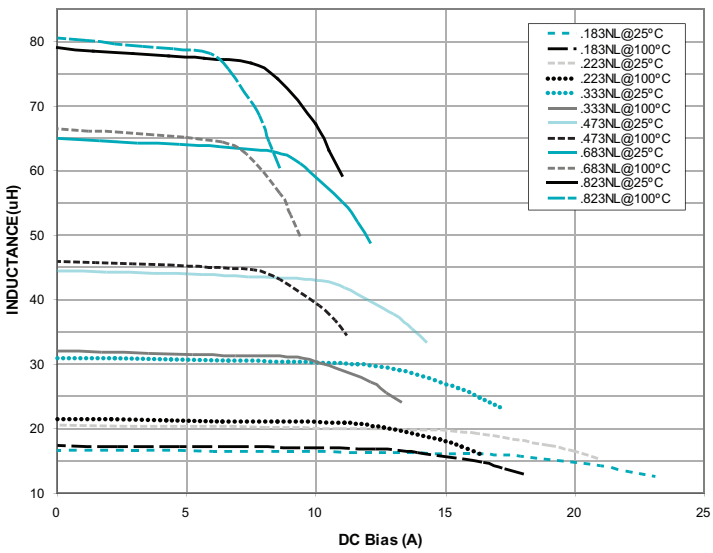
Inductance Charts

PG1096.XXXNL

Typical Inductance vs DC Bias



Typical Inductance vs DC Bias



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