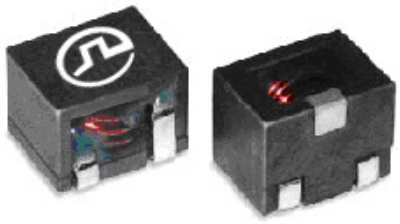
SMT Power Inductor

Round Wire Coils - PG0926NL series



- ***Inductance Range:*** *0.46µH to 22.0µH*
- ***Current Rating:*** *up to 50Apk*
- ***Footprint:*** *13.4mm x 13.4mm Max*
- ***Height:*** *8.0mm Max*
- ***No Thermal Aging***

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[6] CURRENT Idc (A TYP)	CORE LOSS[7] FACTOR (K2)
			DCR[4] (mΩ) ±12%	INDUCTANCE @0Adc (µ ±20%)	25°C	100°C		
PG0926.461NL	0.42	44	0.55	0.46	50	40	44	32.9
PG0926.102NL	0.94	30	1.2	1.00	34	27	30	47.6
PG0926.182NL	1.7	22	2.2	1.80	25	21	22	64.3
PG0926.282NL	2.6	19	2.9	2.80	20	16	19	80.0
PG0926.562NL	5.0	14	4.1	5.60	14	11.5	14.5	114.3
PG0926.722NL	6.8	12	7.0	7.20	12.5	10	12	128.6
PG0926.872NL	8.4	11	8.0	8.70	11.5	9	11	138.1
PG0926.113NL	10.6	9.5	12.0	11.50	10.5	8	9.5	157.1
PG0926.153NL	13.5	8	12.5	15.00	9	7	8	194.8
PG0926.223NL	20	7	21.0	22.00	7.5	6	7	224.5

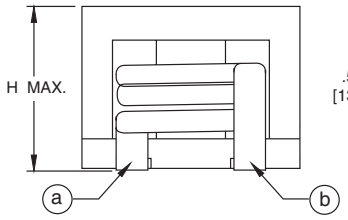
Notes:

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 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 varires 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 * $(f)^{1.72}$ * $(K2\Delta I)^{2.41}$ in mW
   K1 = 8.68E - 10
   f = switching frequency in KHz
   K1 & K2 = core loss factors
   ΔI = delta I across the component in Ampere
   $K2\Delta I$ = 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 and Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG0926.223NL becomes PG0926.223NLT). Pulse complies with industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=32.0mm), pitch (Po=20.0mm) and depth (Ko=8.35mm).
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.

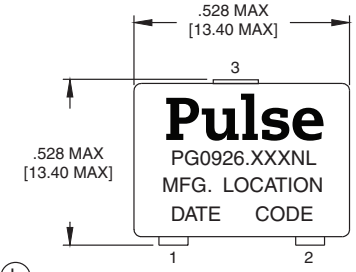
Mechanicals

Schematics

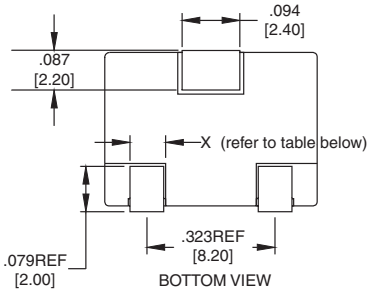
PG0926.XXXNL



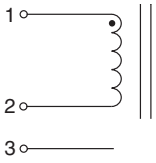
FRONT VIEW



TOP VIEW

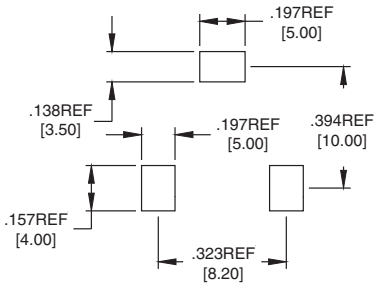


BOTTOM VIEW



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

SCHEMATIC



SUGGESTED LAND PATTERN
(REFERENCE ONLY)

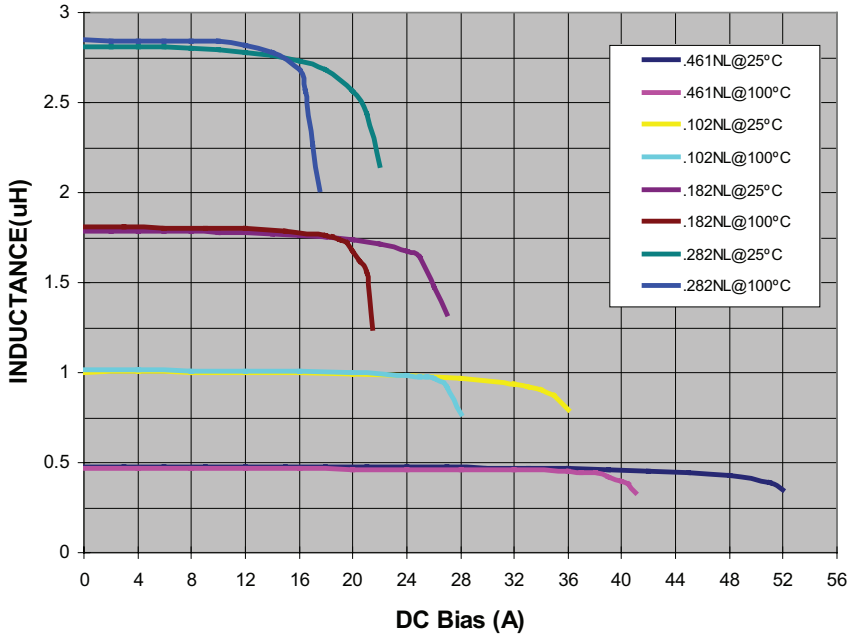
Weight.....4.5 grams
Tape and Reel.....300/reel

Dimensions: inched / mm

Unless otherwise specified, all tolerance are +.010 -0.25

PART NUMBER	X(Ref.)	H (HEIGHT)
PG0926.461NL	2.0mm	8.0mm
PG0926.102NL	2.0mm	
PG0926.182NL	2.0mm	
PG0926.282NL	2.0mm	
PG0926.562NL	2.0mm	
PG0926.722NL	1.6mm	
PG0926.872NL	1.6mm	
PG0926.113NL	1.3mm	
PG0926.153NL	1.3mm	
PG0926.223NL	1.0mm	7.9mm

Typical Inductance vs DC Bias



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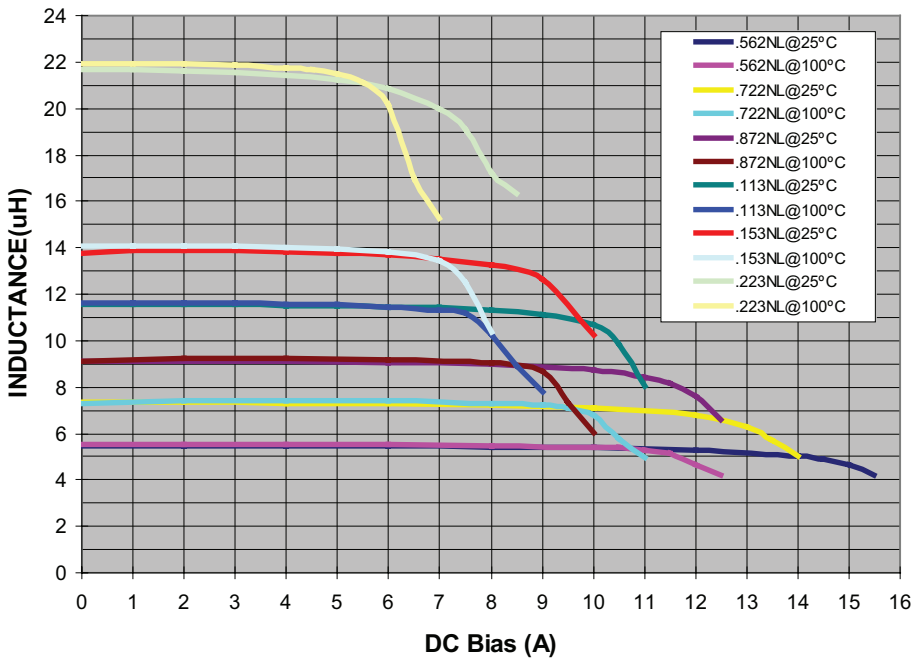

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