SMT Power Inductors

Power Beads - PA1320NL and PA1320ANL Series

- ***Current Rating:*** *Over 75Apk*
- ***Inductance Range:*** *120nH to 310nH*
- ***Height:*** *6.5mm Max*
- ***Footprint:*** *10.4mm x 8.0mm Max*

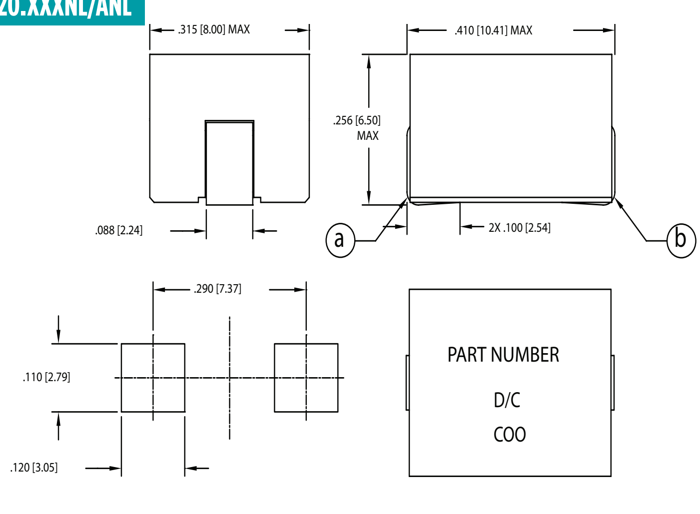
Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C[7]							
Part Number	**Inductance @ 0A$_{DC}$** (nH ±20%)	**Inductance @ Irated** (nH TYP)	**Irated**[1] (A_{DC})	**DCR**[2] (mΩ)	**Saturation Current**[3] (A TYP)		**Heating**[4] **Current** (A TYP)
					25°C	**100°C**	
PA1320.121NL	120	120	40	0.48 ±8% (NL) 0.47 ±5%(ANL)	90	73	40
PA1320.141NL	140	140	40		76	64	
PA1320.171NL	180	174	40		54.5	52	
PA1320.221NL	200	185	40		55	45	
PA1320.301NL	310	250	30		34	29.5	

Notes:

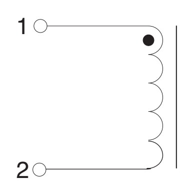
1. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
2. The nominal DCR tolerance is by design. The nominal DCR is measured from point ⓐ to point ⓑ, as shown below on the mechanical drawing. The standard part PA1320.XXXNL has a DCR tolerance of +/-8%. A tighter DCR tolerance (+/-5%) part is available by changing the NL suffix to ANL (i.e. PA1320.121NL becomes PA1320.121ANL).
3. The saturation current is the typical current which causes the inductance to drop by 20% at the stated ambient temperatures (25°C and 100°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.
4. The heating current is the DC current which causes the part temperature to increase by approximately 40C. This current is determined by soldering the component on a typical application PCB, and then applying the current to the device for 30 minutes with 25LFM of forced air cooling.
5. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. To determine the approximate total losses (or temperature rise) for a given application, the coreloss and temperature rise curves can be used.
6. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA1320.121NL becomes PA1320.121NLT). Pulse complies to industry standard tape and reel specification EIA481.
7. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

Mechanical

PA1320.XXXNL/ANL



Schematic

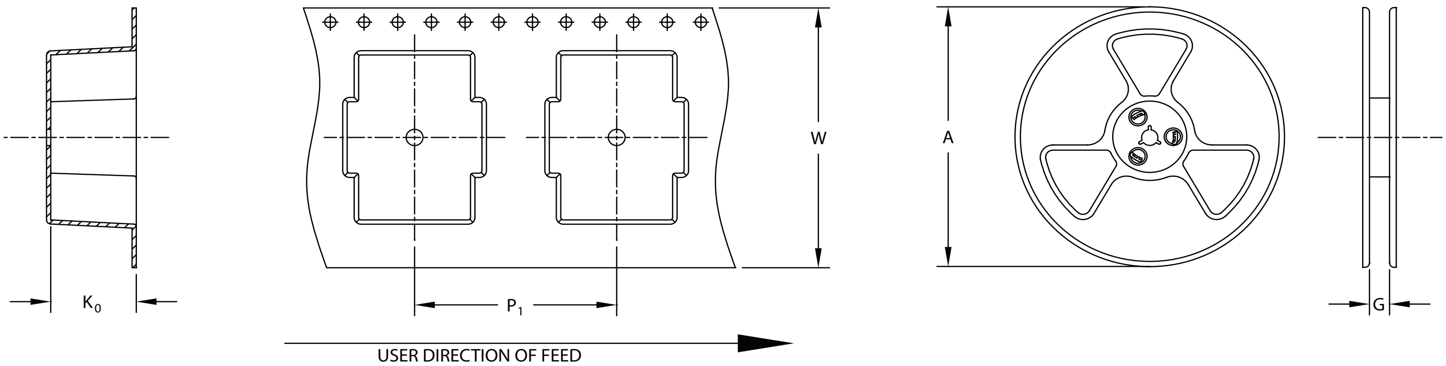


Weight ....2.05 grams
Tape & Reel 750/reel

Dimensions: Inches / mm

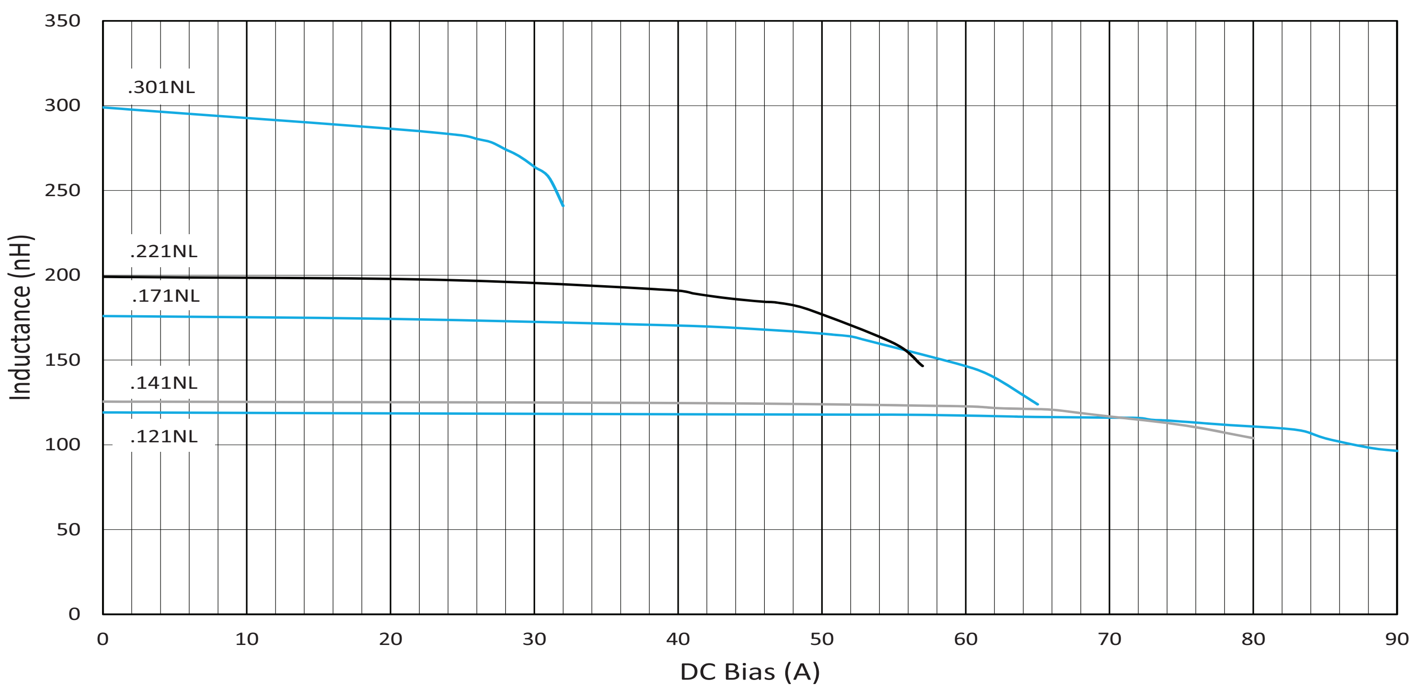
Unless otherwise specified, all tolerances are ± .010 / 0,25

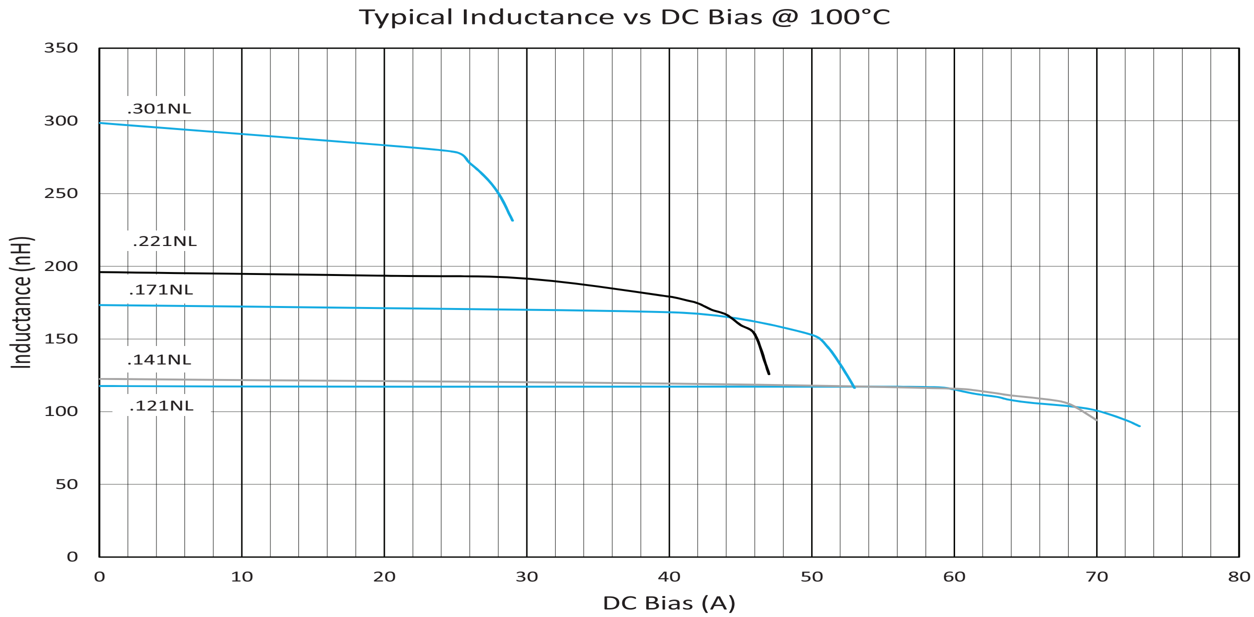
TAPE & REEL INFO

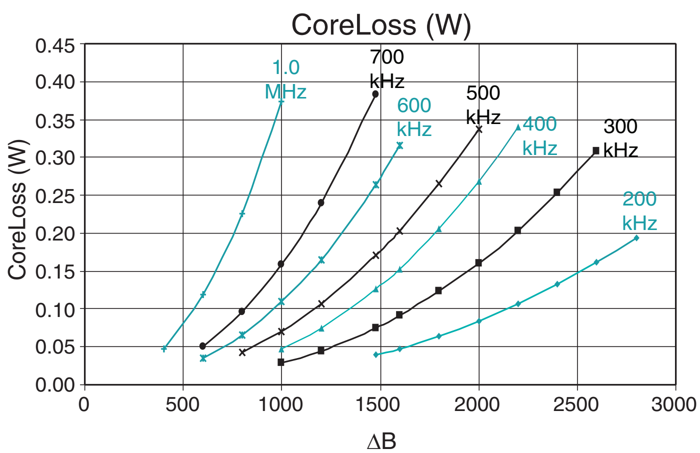


SURFACE MOUNTING TYPE, REEL/TAPE LIST						
PART NUMBER	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA1320.XXXNL/PA1320.XXXANLT	Ø330	24.4	12	24	6.5	750

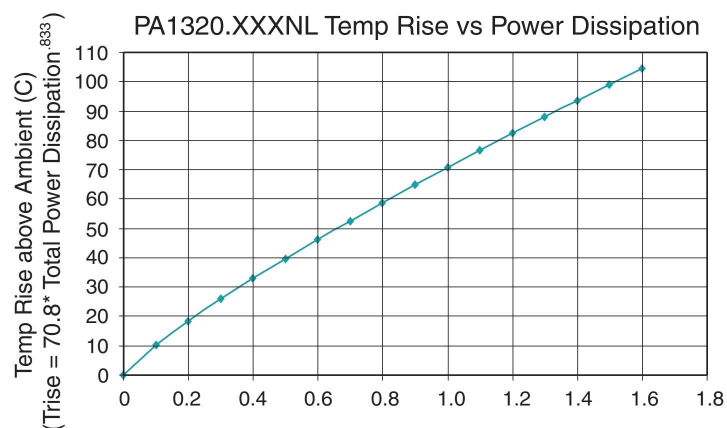
Typical Inductance vs DC Bias @ 25°C







where ΔB = 0.4 * L (nH) * ΔI



Total Power Dissipation (W) = CopperLoss + CoreLoss

CopperLoss = Irms 2* Rdc (mΩ) / 1000

CoreLoss = (from table)

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