

# SMT Power Inductors

Power Beads - PA1320NL and PA1320ANL Series



- Current Rating:** Over 75A<sub>pk</sub>
- Inductance Range:** 120nH to 310nH
- Height:** 6.5mm Max
- Footprint:** 10.4mm x 8.0mm Max
- Halogen Free**

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C<sup>7</sup>

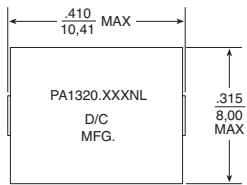
Part Number	Inductance @ 0A <sub>DC</sub> (nH ±20%)	Inductance @ I <sub>rated</sub> (nH TYP)	I <sub>rated</sub> <sup>1</sup> (A <sub>DC</sub> )	DCR <sup>2</sup> (mΩ)	Saturation Current <sup>3</sup> (A TYP)		Heating <sup>4</sup> Current (A TYP)
					25°C	100°C	
PA1320.121NL	120	120	40	0.48 ±8% (NL) 0.47 ±5% (ANL)	74	65	40
PA1320.141NL	140	140	40		66	52	
PA1320.171NL	180	174	40		52	44	
PA1320.221NL	200	185	40		50	42	
PA1320.301NL	310	250	30		30	26	

- Notes:**
- The rated current as listed is either the saturation current or the heating current depending on which value is lower.
  - The nominal DCR tolerance is by design. The nominal DCR is measured from point a to point b, 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).
  - The saturation current is the typical current which causes the inductance to drop by 20% at the stated ambient temperatures (25C and 100C). 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.
  - 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.
  - 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.
  - 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.
  - The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

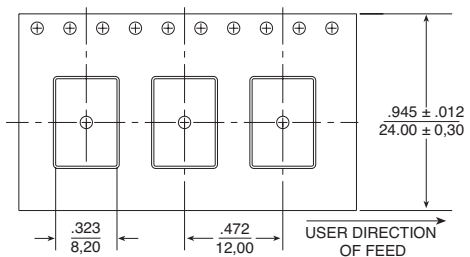
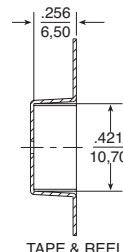
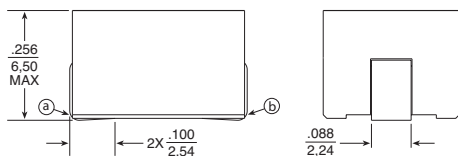
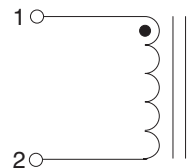
### Mechanical

### Schematic

#### PA1320.XXXNL



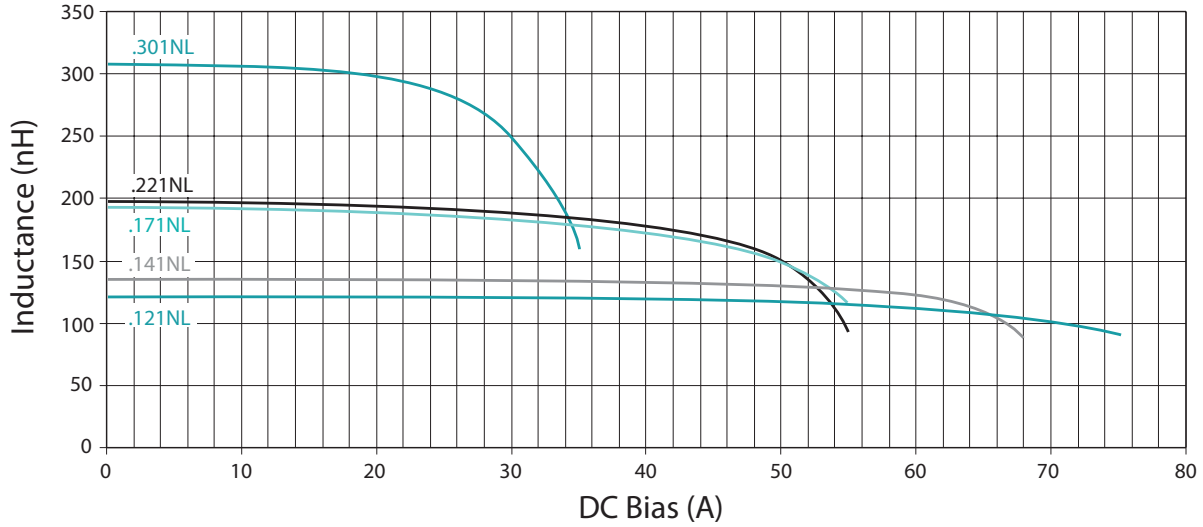
Weight .....2.05 grams  
 Tape & Reel .....750/reel  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$



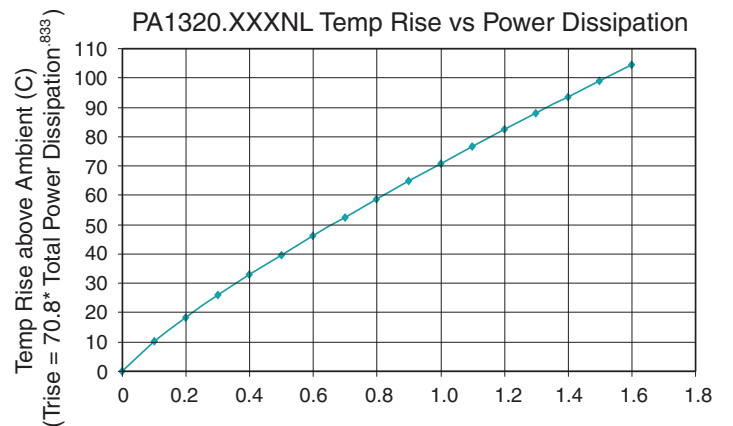
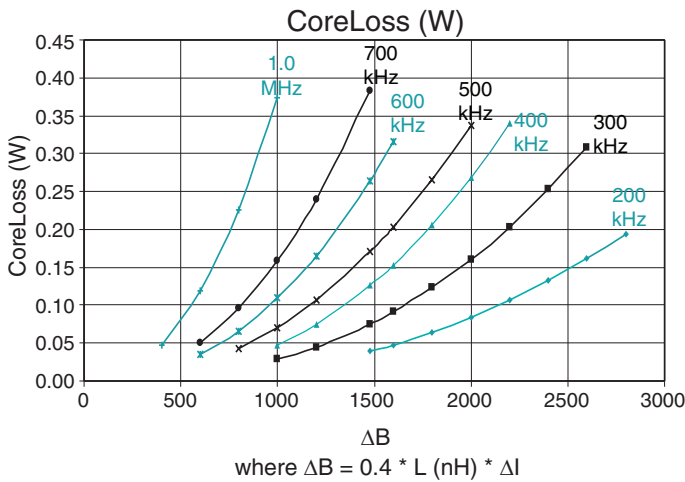
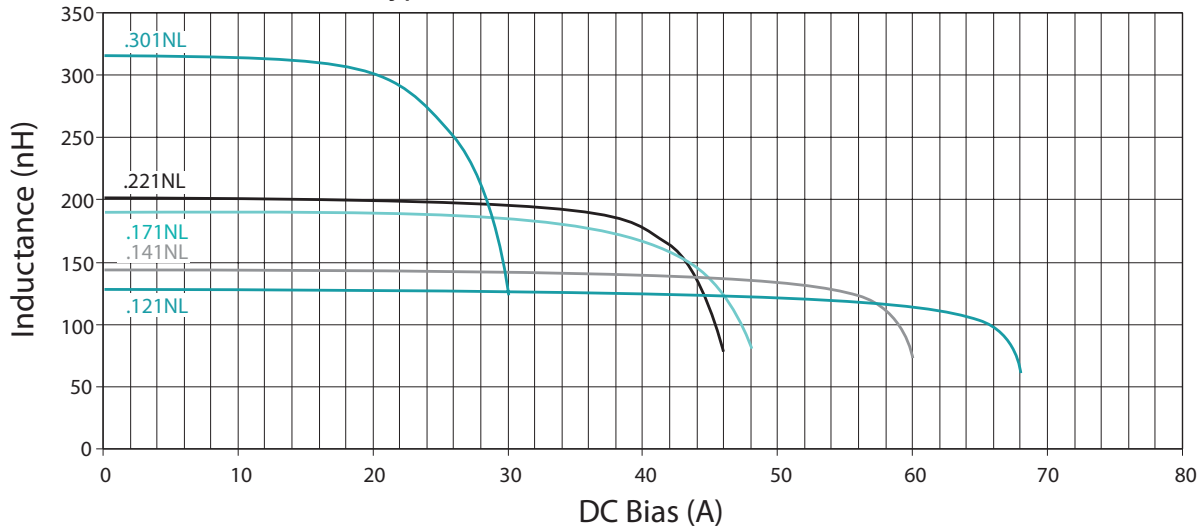
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Typical Inductance vs DC Bias @ 25°C



Typical Inductance vs DC Bias @ 100°C



Total Power Dissipation (W) = CopperLoss + CoreLoss  
 CopperLoss =  $I_{rms}^2 * R_{dc} (m\Omega) / 1000$   
 CoreLoss = (from table)

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[KHC201E225M76N0T00](#) [LRC-LRF1206LF-01R025FTR1K](#) [1812J1K00222JCT](#) [1812J2K00102KXT](#) [1812J2K00222KXT](#)  
[1812J2K00472KXT](#) [2-1622820-7-CUT-TAPE](#) [2220J3K00102KXT](#) [2225J2500824KXT](#) [CCR07CG103KM](#) [CGA2B2C0G1H010C](#)  
[CGA2B2C0G1H040C](#) [CGA2B2C0G1H050C](#) [CGA2B2C0G1H060D](#) [CGA2B2C0G1H070D](#) [CGA2B2C0G1H151J](#) [CGA2B2C0G1H1R5C](#)  
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