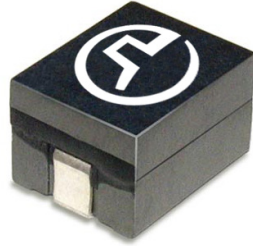


# SMT Power Inductors

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<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)<br>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  |                                      |

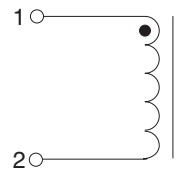
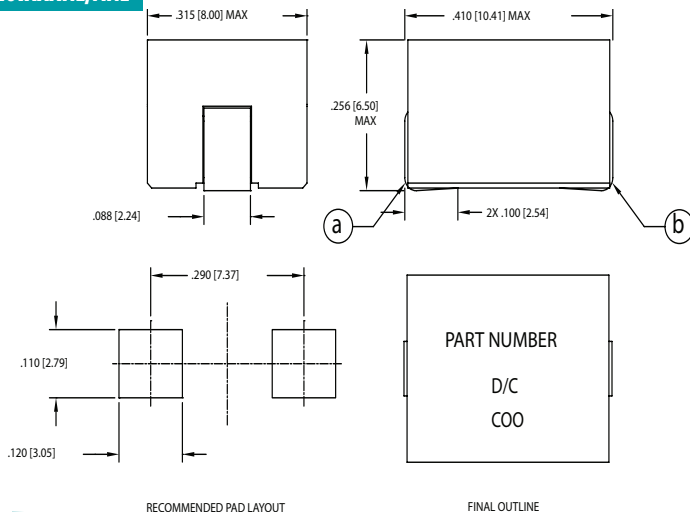
## Notes:

- 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 (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.
- 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/ANL



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

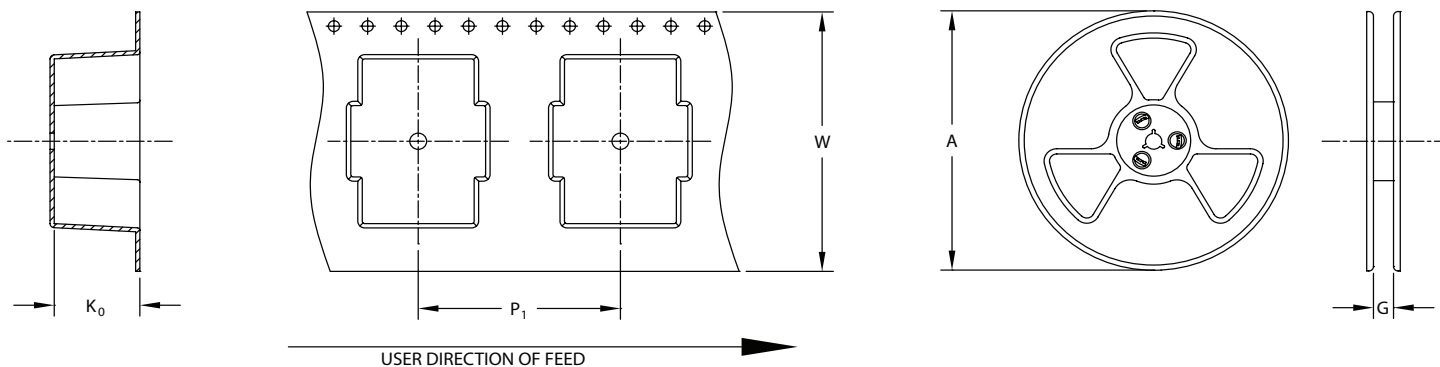
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified,  
all tolerances are  $\pm \frac{.010}{0.25}$

# SMT Power Inductors

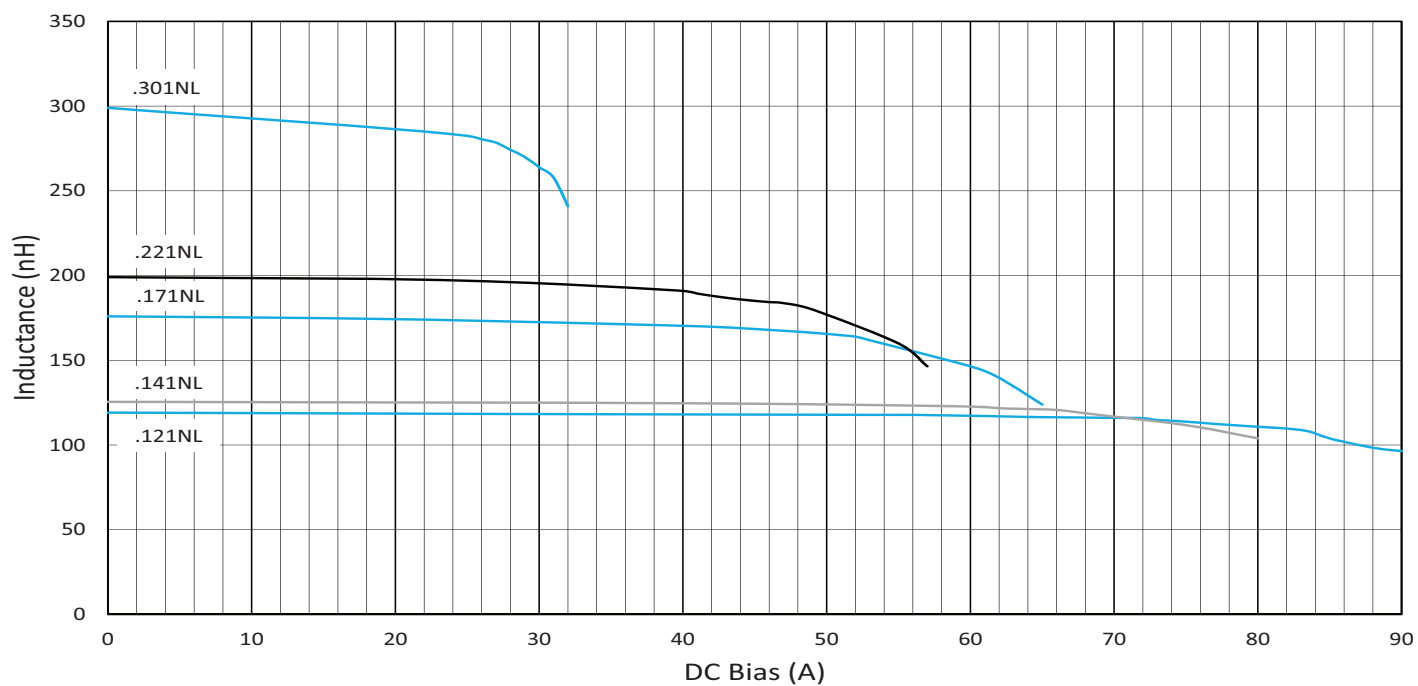
Power Beads - PA1320NL and PA1320ANL Series

## TAPE & REEL INFO



| SURFACE MOUNTING TYPE, REEL/TAPE LIST |                |      |                |    |                |          |
|---------------------------------------|----------------|------|----------------|----|----------------|----------|
| PART NUMBER                           | REEL SIZE (mm) |      | TAPE SIZE (mm) |    |                | QTY      |
|                                       | A              | G    | P <sub>1</sub> | W  | K <sub>0</sub> | PCS/REEL |
| PA1320.XXXNL/PA1320.XXXANLT           | Ø330           | 24.4 | 12             | 24 | 6.5            | 750      |

Typical Inductance vs DC Bias @ 25°C

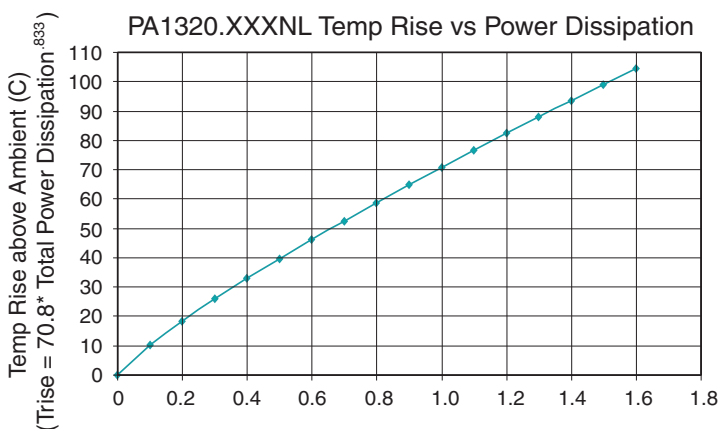
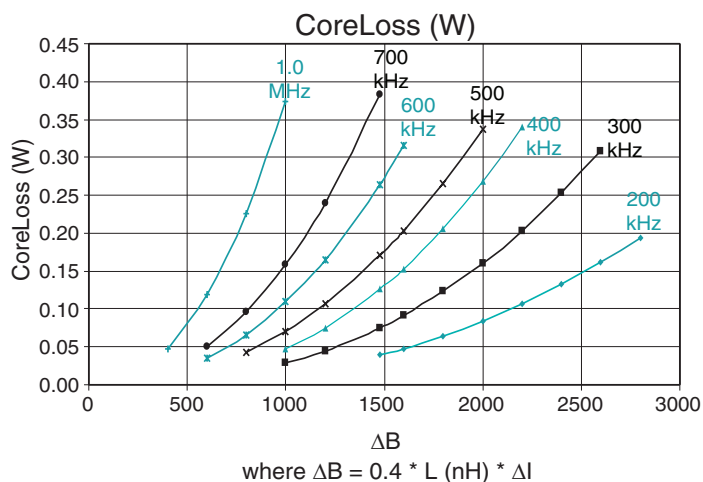
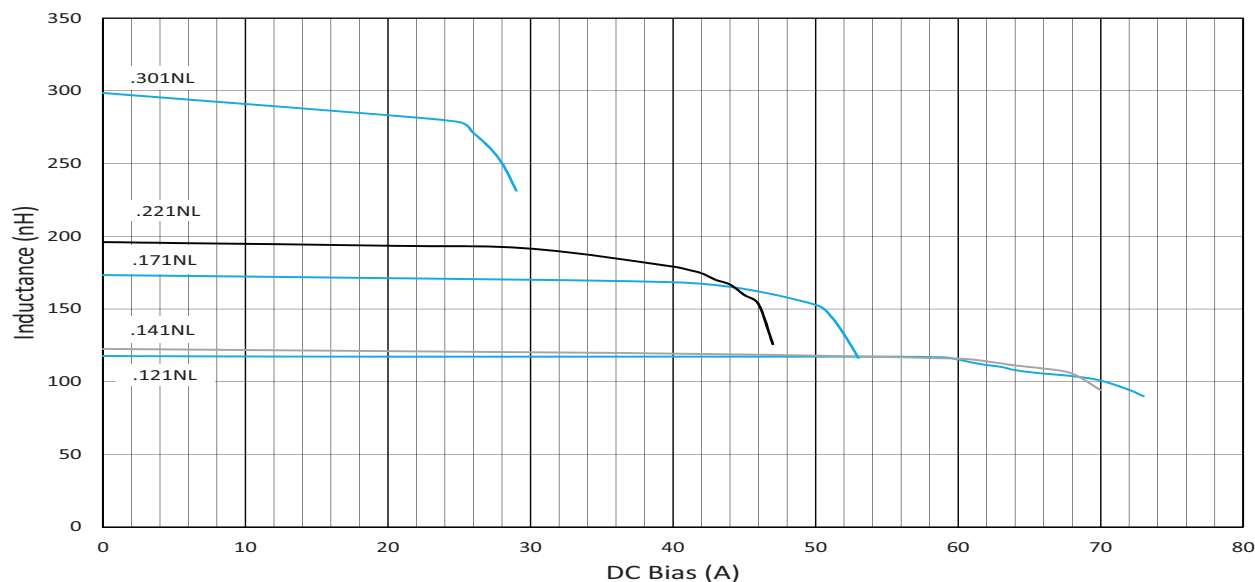


# SMT Power Inductors

Power Beads - PA1320NL and PA1320ANL Series



Typical Inductance vs DC Bias @ 100°C



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

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