Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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# SMT POWER INDUCTORS
## Power Beads - PA0135 Series

Pulse® A TECHNITROL COMPANY

RoHS COMPLIANT

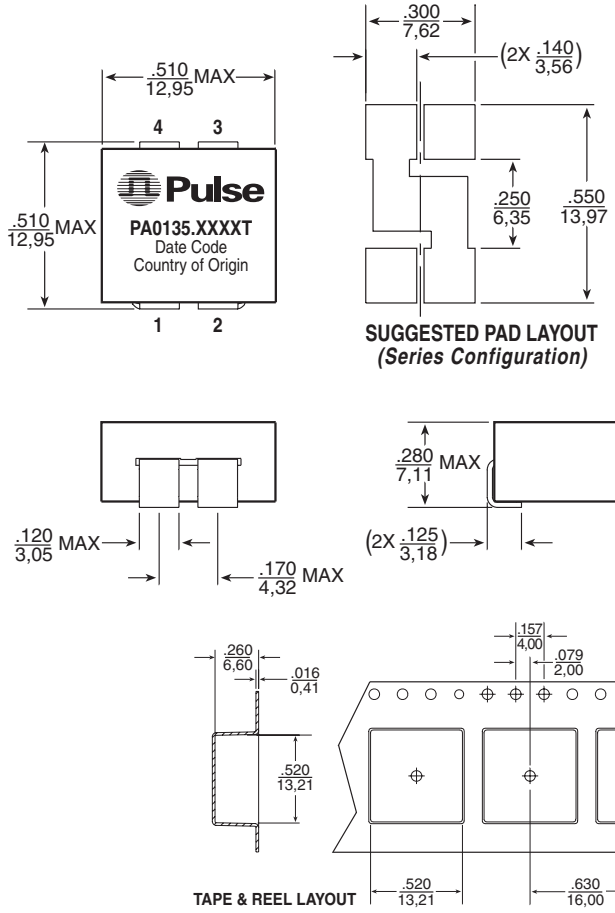
- **Height:** 7.1mm Max
- **Footprint:** 13.0mm x 13.0mm Max
- **Current Rating:** up to 40A
- **Inductance Range:** .074µH to 0.9µH

**Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C**

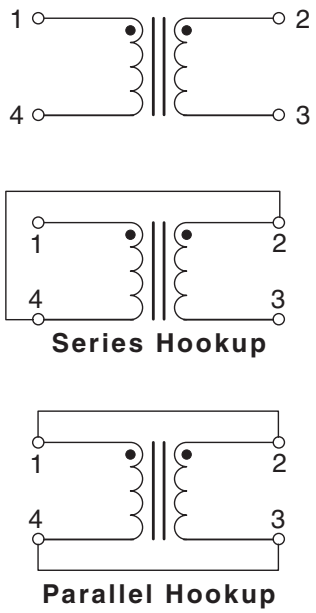
| Part [5,6] Number | Inductance @Irated (nH ± 20%) | Irated [3] (ADC) | DCR (mΩ) TYP | DCR (mΩ) MAX | Inductance @0ADC (nH ± 20%) | Saturation Current [2] (ADC) 25°C | Saturation Current [2] (ADC) 125°C | Heating Current [3] (A) | Trise [4] Factor K0 | Core Loss Factor [4] K1 | Core Loss Factor [4] K2 | Connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOLTA 5 | | | | | | | | | | | | |
| **PA0135.331** | 74 | 40 | 0.18 | 0.225 | 82.5 | 40+ | 40+ | 40 | 6.38037 | 0.02566 | 0.01547 | Parallel |
| **PA0135.471** | 105 | 40 | 0.18 | 0.225 | 118 | 40+ | 40+ | 40 | 6.38037 | 0.02566 | 0.02204 | Parallel |
| **PA0135.681** | 153 | 34 | 0.18 | 0.225 | 170 | 40+ | 34 | 40 | 6.38037 | 0.02566 | 0.03188 | Parallel |
| **PA0135.102** | 225 | 24 | 0.18 | 0.225 | 250 | 35 | 24 | 40 | 6.38037 | 0.02566 | 0.04689 | Parallel |
| **PA0135.331** | 297 | 20 | 0.74 | 0.9* | 330 | 40+ | 32 | 20 | 6.38037 | 0.02566 | 0.03094 | Series |
| **PA0135.471** | 423 | 20 | 0.74 | 0.9* | 470 | 37 | 26 | 20 | 6.38037 | 0.02566 | 0.04407 | Series |
| **PA0135.681** | 612 | 19 | 0.74 | 0.9* | 680 | 25 | 19 | 20 | 6.38037 | 0.02566 | 0.06377 | Series |
| **PA0135.102** | 900 | 14 | 0.74 | 0.9* | 1000 | 18 | 14 | 20 | 6.38037 | 0.02566 | 0.09377 | Series |

* DCR rating for indicated parts is for both windings tied in series.

## Mechanical




## Schematic




**Weight** . . . . . 4.15 grams
**Tape & Reel** . . . . . 500/reel

**Dimensions:** Inches / mm

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

# SMT POWER INDUCTORS
## Power Beads - PA0135 Series

## Notes from Tables

1. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
2. The saturation current is the current which causes the inductance to drop by 10% at the stated ambient temperatures (-40°C, 25°C, 125°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.
3. The heating current is the DC current which causes the temperature of the part to increase by approximately 40°C. This current is determined by mounting the component on a PCB with .25" wide, 2 oz. equivalent copper traces, and applying the current to the device for 30 minutes. In the series hookup mode, the resistance of the interconnection needs to be taken into account when calculating temperature rise.
4. In high volt*time applications additional heating in the component can occur due to core losses in the inductor which may neccessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application, both copper losses and core losses should be taken into account.
5. Optional Tape & Reel packaging can be ordered by adding a "**T**" suffix to the part number, (i.e. PA0135.102**T**).
6. To order RoHS compliant part, add the suffix "**NL**" to the part number (i.e. PA0135.102 becomes PA0135.102**NL** and PA0135.102T becomes PA0135.102**NL**T).

**Estimated Temperature Rise:**

$$Trise = \left[\frac{Coreloss\ (mW) + DCRloss\ (mW)}{K0}\right]^{.833} (°C)$$

$$Coreloss = K1 * (Fsw(kHz))^{1.6688} * (K2 * dI)^{2.17} (mW)$$

$$DCRloss = Irms^2 * DCR(m\Omega)\ (mW)$$

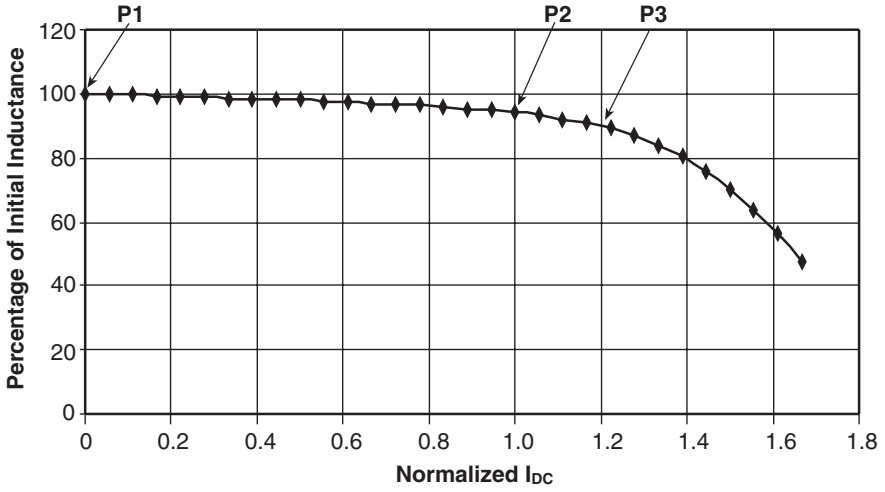
$$Irms = \left[IDC^2 + \left[\frac{dI}{12}\right]^2\right]^{1/2} (Arms)$$

$$Fsw(kHz) = switching\ frequency\ (kHz)$$

$$dI = delta\ I\ across\ the\ component\ (A)$$

The temperature of the component (ambient temperature + temperature rise) should be within the listed operating temperature range.

## Inductance vs Current Characteristics




**P1** - Initial Inductance, $L_O$ (.1$V_{RMS}$, 300kHz, 0$A_{DC}$, 25°C)
**P2** - Inductance (typically 95% $L_O$) at Rated $I_{DC}$.
**P3** - Inductance (typically 90% $L_O$) at $I_{PK}$.

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