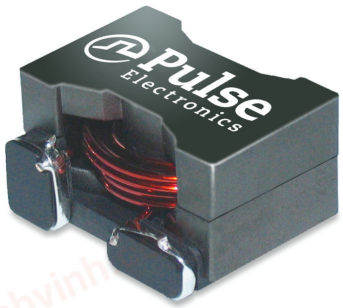
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# SMT POWER INDUCTORS

*Wire Wound*




- ***Height:*** *12.2mm Max*
- ***Footprint:*** *22.2 x 19.1mm Max*
- ***Current Rating:*** *Over 22Apk*
- ***Inductance Range:*** *5.8µH to 57µH*
- ***Weight:*** *±4%*

**Electrical Specifications @ 25°C — Operating Temperature -55°C to +130°C**

| Part Number | Inductance @0ADC (µH ±10%) | Inductance @Irated (µH TYP) | Irated[1] ($A_{DC}$) | DCR (mΩ ±10%) | Saturation[2] Current Isat (A TYP) | | Heating[3] Current IDC (A TYP) | Core Loss Factor K2 |
|---|---|---|---|---|---|---|---|---|
| | | | | | 25°C | 100°C | | |
| PA2050.582NL | 5.8 | 5.8 | 14.4 | 4.4 | 22 | 17 | 14.4 | 155 |
| PA2050.782NL | 7.8 | 7.8 | 13.3 | 5.1 | 18 | 16 | 13.3 | 181 |
| PA2050.103NL | 10.2 | 10.2 | 12.5 | 5.8 | 16 | 15 | 12.5 | 206 |
| PA2050.163NL | 16.0 | 16.0 | 9.9 | 9.1 | 12 | 11 | 9.9 | 258 |
| PA2050.193NL | 19.4 | 19.4 | 8.5 | 12.6 | 11 | 10 | 8.5 | 284 |
| PA2050.233NL | 23.0 | 23.0 | 8.0 | 13.7 | 9.8 | 8 | 8.1 | 310 |
| PA2050.273NL | 27.0 | 26.2 | 7.8 | 14.9 | 9 | 8 | 7.8 | 335 |
| PA2050.313NL | 31.4 | 30.6 | 6.7 | 20.2 | 8.4 | 8 | 6.7 | 361 |
| PA2050.363NL | 36.0 | 35.2 | 6.0 | 21.6 | 8 | 6 | 6.5 | 387 |
| PA2050.393NL | 38.9 | 37.5 | 6.0 | 18.8 | 6.3 | 6 | 6.2 | 482 |
| PA2050.413NL | 41.0 | 40.0 | 6.0 | 23.1 | 7.3 | 6 | 6.2 | 413 |
| PA2050.583NL | 57.8 | 57.8 | 5.0 | 34.5 | 6.2 | 5 | 5.1 | 490 |

**Notes:**

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 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 s hort duration pulse current (to eliminate self-heating effects) to the component.
3. The heating current is the DC current which causes the part temperature to increase by approximately 40°C.
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. To determine the approximate total losses (or temperature rise) for a given application, the coreloss and temperature rise formula can be used:

   **ΔB (Gauss)** = K2 * ΔI

   **Core Loss (W)** = 1.5E-13 * (Freq_kHz) $^{1.63}$ * $\Delta B^{2.62}$
5. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
6. Add "T" suffix to the part number for Tape & Reel version (i.e. PA2050.582NLT).
7. This RoHS compliant series should be processed in accordance with JEDEC J-STD-020C reflow standard.

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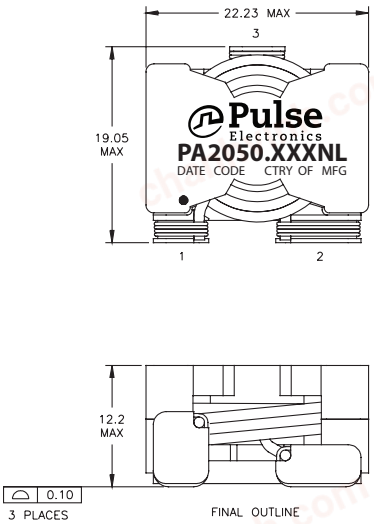
# SMT POWER INDUCTORS

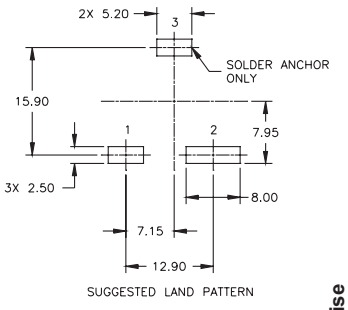
*Wire Wound*

## Mechanical

## Schematics

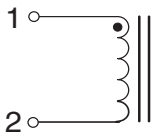
### PA2050.XXXNL

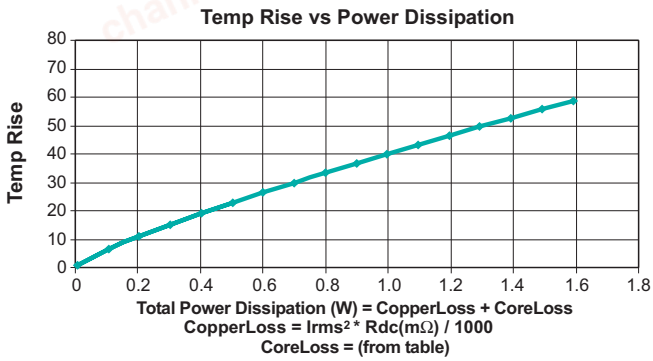


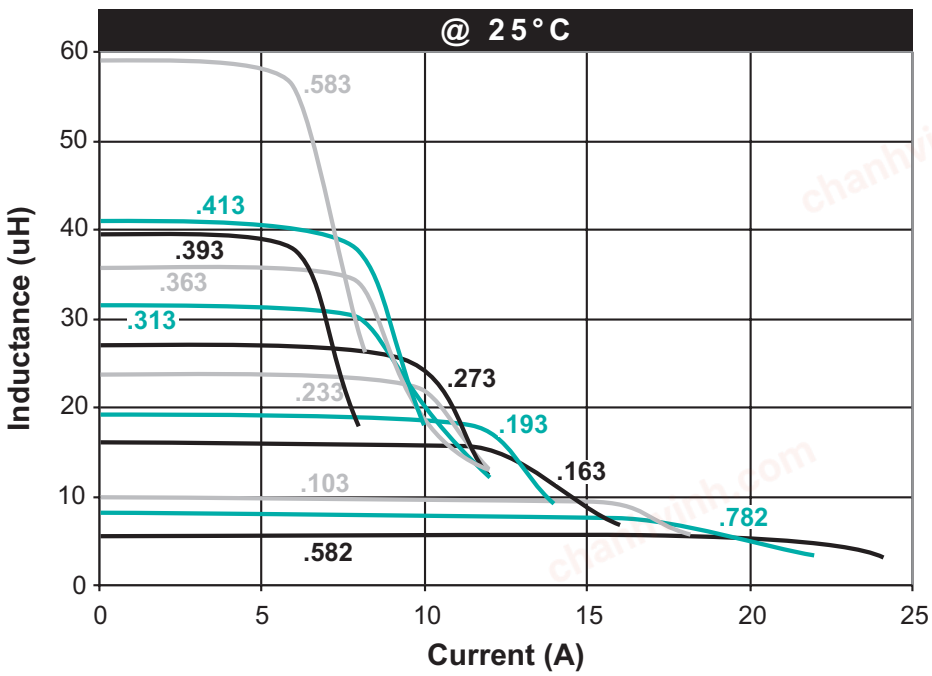

**Dimensions:** *Inches / mm*

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



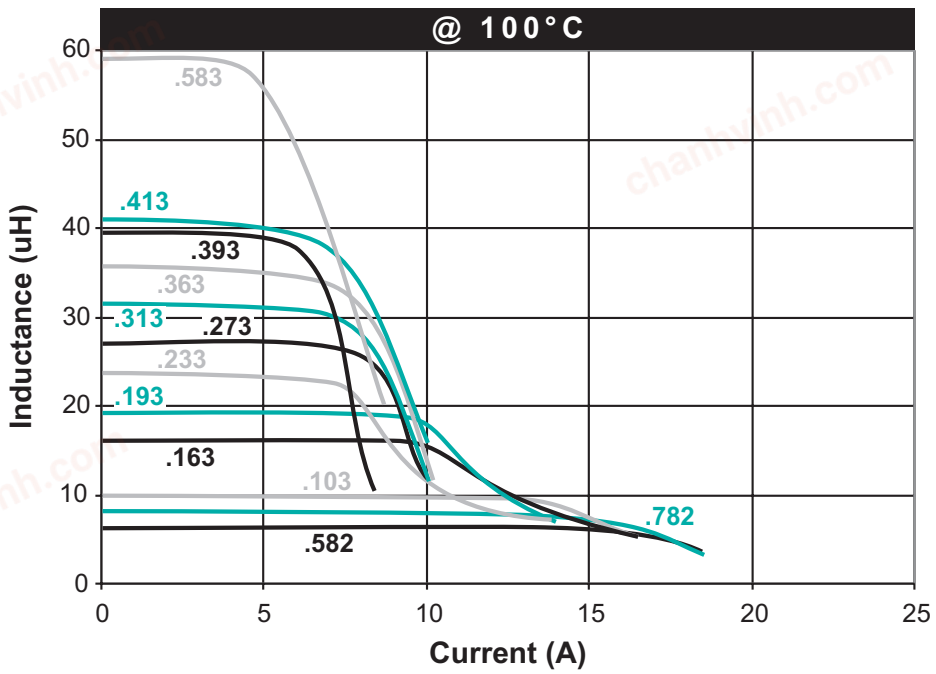

## Inductance vs Current Characteristics



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## Inductance vs Current Characteristics *(continued)*




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