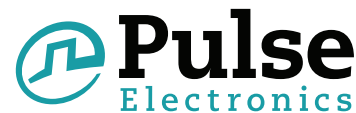


# SMT Power Inductors

Power Beads - PA3790.XXXHL Series



- Current Rating:** Over 98 Apk
- Inductance Range:** 150nH to 220nH
- Height:** 8.0 mm Max
- Footprint:** 12.5mm x 8.0mm Max
- Halogen Free**

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

| Part Number  | Inductance <sup>1</sup><br>@ 0A <sub>DC</sub><br>(nH +/- 15%) | Inductance <sup>2</sup><br>@ I <sub>rated</sub><br>(nH TYP) | I <sub>rated</sub> <sup>3</sup><br>(ADC) | DCR <sup>4</sup><br>(mΩ nominal) | Saturation Current <sup>5</sup><br>(A TYP) |       | Heating Current <sup>6</sup><br>(A TYP) |
|--------------|---|---|--|----------------------------------|--|-------|---|
|              |   |   |  |                                  | 25°C                                       | 100°C |   |
| PA3790.151HL | 150   | 148   | 57                                       | 0.29 +/- 5%                      | 98   | 80    | 57                                      |
| PA3790.181HL | 180   | 175   | 57                                       |                                  | 84   | 70    |   |
| PA3790.201HL | 200   | 195   | 57                                       |                                  | 73   | 61    |   |
| PA3790.221HL | 220   | 200   | 55                                       |                                  | 63   | 55    |   |

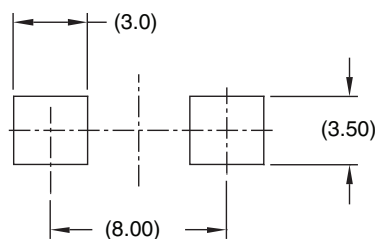
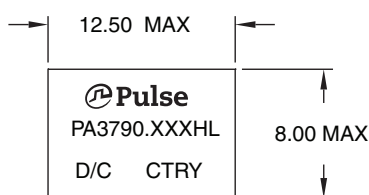
### NOTES:

- Inductance measured at 100kHz, 100mVrms.
- Inductance at I<sub>rated</sub> is the value of the inductance at 25°C at the listed rated current.
- The rated current as listed is either the saturation current (25°C or 100°C) or the heating current depending on which value is lower.
- The nominal DCR is measured from point Ⓐ to point Ⓑ, as shown below on the mechanical drawing.
- The saturation current is the typical current which causes the inductance to drop by 20% at the stated ambient temperatures (25°C, 100°C and 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.
- The heating current is the DC current which causes the part temperature to increase by approximately 40°C when used in a typical application.
- 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 coreless 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. PA3790.151HL becomes PA3790.151HLT). Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=24mm), pitch (Po=16.0mm) and depth (Ko=8.7mm).
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

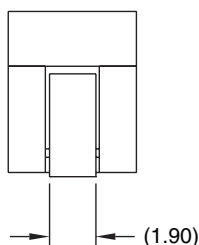
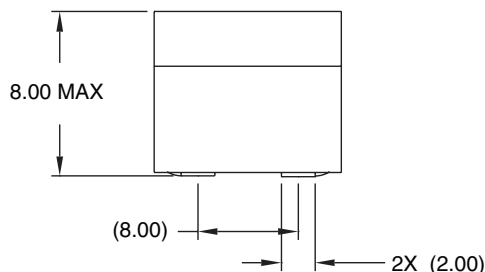
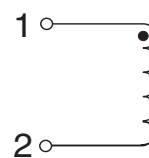
## Mechanical

## Schematics

### PA3790.XXXHL



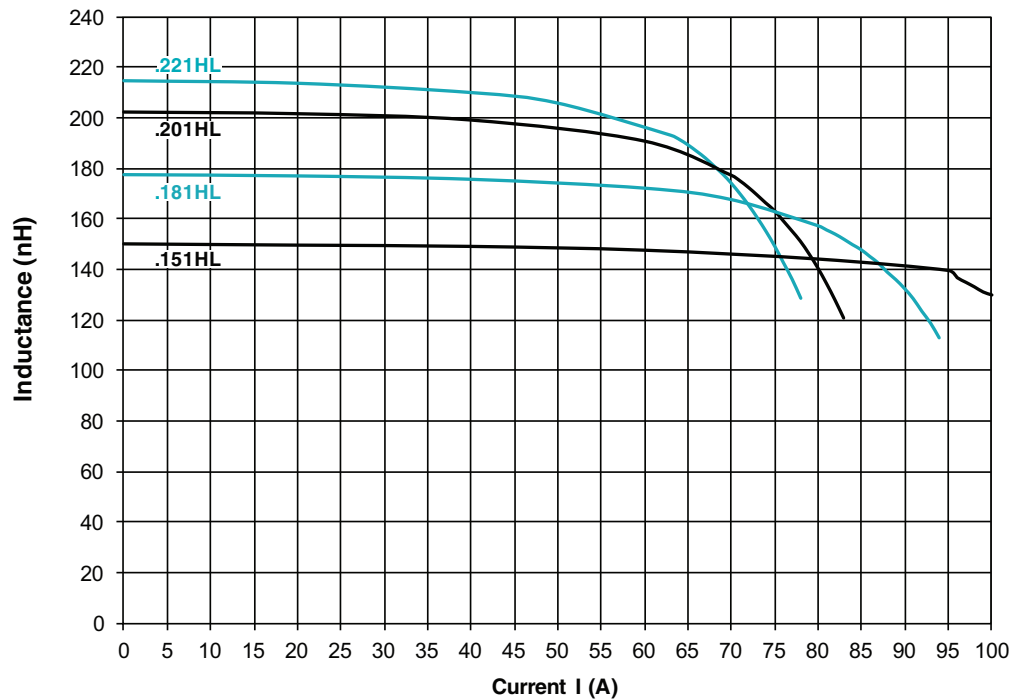
SUGGESTED LAND PATTERN



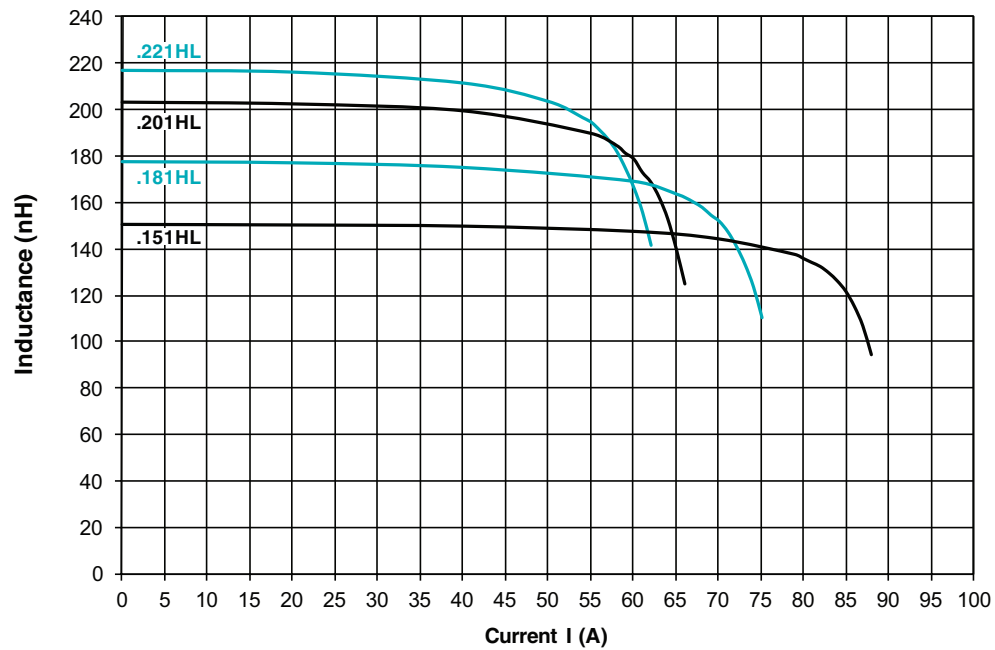
Weight ..... 3.4 grams  
Tape & Reel ..... 400/reel

Dimensions: mm  
Unless otherwise specified,  
all tolerances are ± 0.25

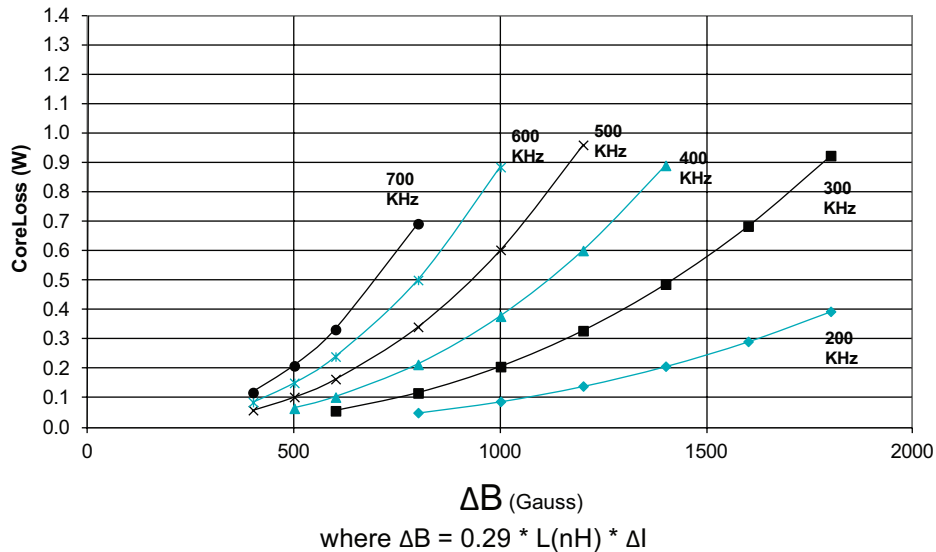
### PA3790.XXXHL, L vs I curve at 25C



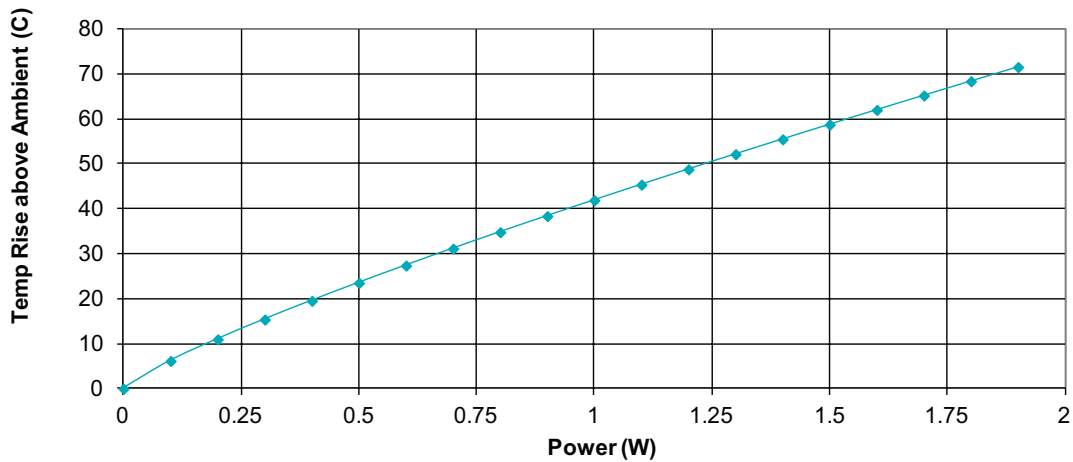
### PA3790.XXXHL, L vs I curve at 100C



## PA3790.XXXHL CoreLoss (W)



## PA3790.XXXHL Temp Rise vs Power Dissipation



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

### For More Information

#### Pulse Worldwide Headquarters

12220 World Trade Drive  
San Diego, CA 92128  
U.S.A.

Tel: 858 674 8100  
Fax: 858 674 8262

#### Pulse Europe

Zeppelinstrasse 15  
71083 Herrenberg  
Germany

Tel: 49 7032 7806 0  
Fax: 49 7032 7806 12

#### Pulse China Headquarters

B402, Shenzhen Academy of  
Aerospace Technology Bldg.  
10th Kejinan Road  
High-Tech Zone  
Nanshan District  
Shenzhen, PR China 518057

Tel: 86 755 33966678  
Fax: 86 755 33966700

#### Pulse North China

Room 2704/2705  
Super Ocean Finance Ctr.  
2067 Yan An Road West  
Shanghai 200336  
China

Tel: 86 21 62787060  
Fax: 86 2162786973

#### Pulse South Asia

135 Joo Seng Road  
#03-02  
PM Industrial Bldg.  
Singapore 368363

Tel: 65 6287 8998  
Fax: 65 6287 8998

#### Pulse North Asia

3F, No. 198  
Zhongyuan Road  
Zhongli City  
Taoyuan County 320  
Taiwan R. O. C.

Tel: 886 3 4356768  
Fax: 886 3 4356823 (Pulse)  
Fax: 886 3 4356820 (FRE)

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2013. Pulse Electronics, Inc. All rights reserved.