

# 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> @ 0A <sub>DC</sub> (nH +/- 15%)	Inductance <sup>2</sup> @ I <sub>rated</sub> (nH TYP)	I <sub>rated</sub> <sup>3</sup> (ADC)	DCR <sup>4</sup> (mΩ nominal)	Saturation Current <sup>5</sup> (A TYP)		Heating Current <sup>6</sup> (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	

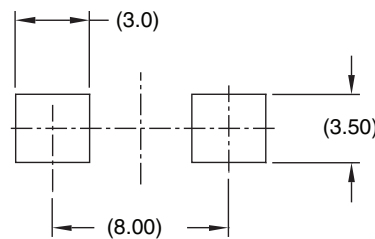
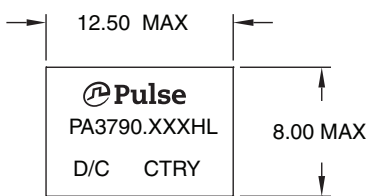
### NOTES:

- 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.

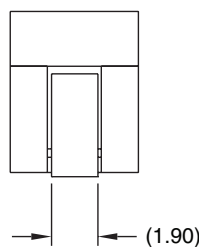
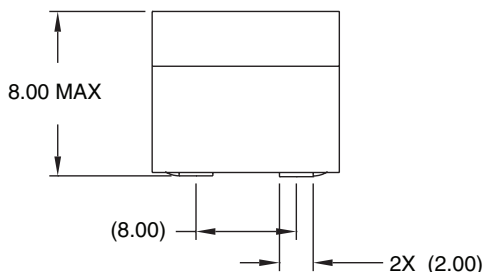
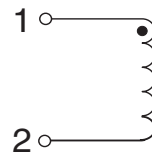
## Mechanical

## Schematics

### PA3790.XXXHL



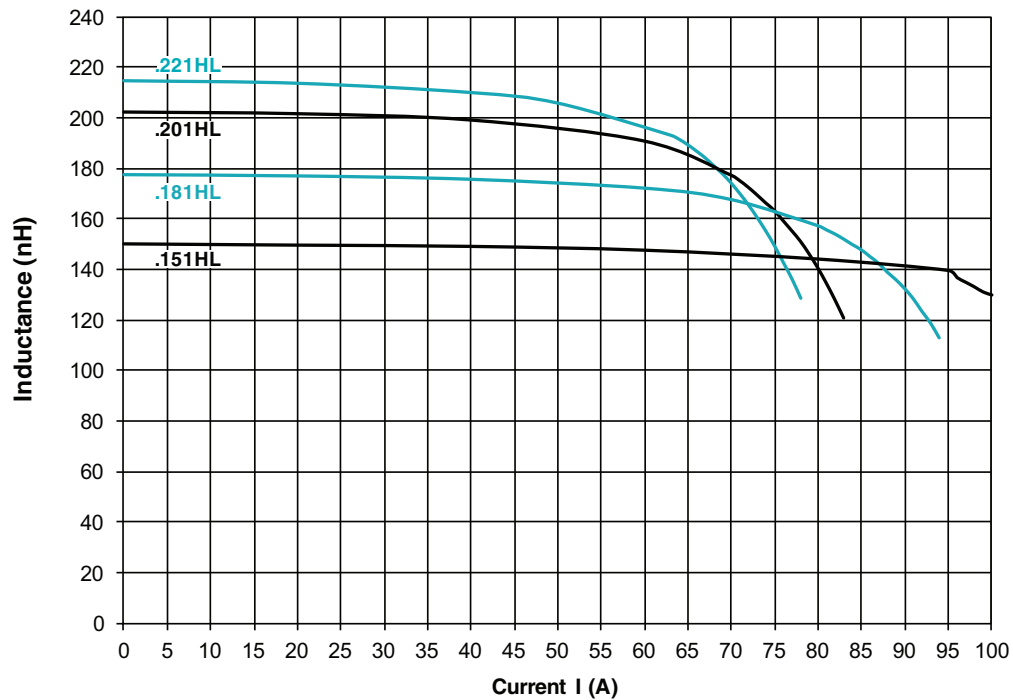
SUGGESTED LAND PATTERN



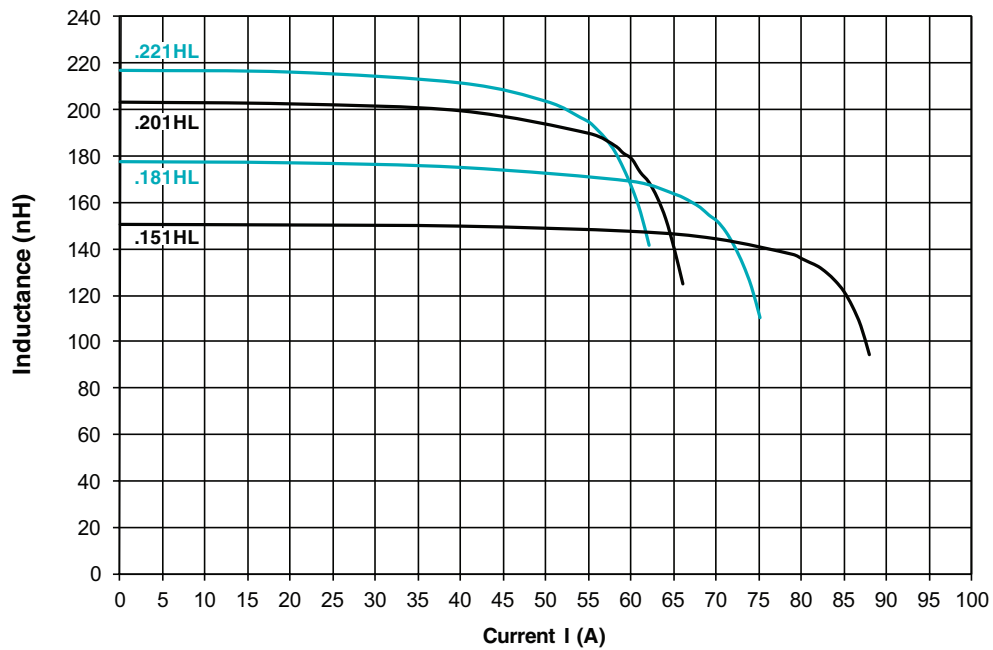
Weight ..... 3.4 grams  
Tape & Reel ..... 400/reel

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

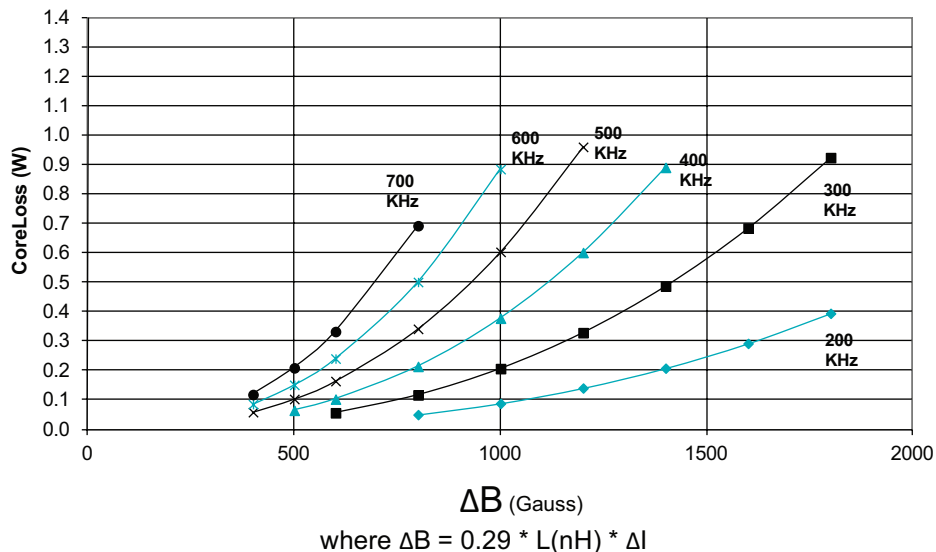
**PA3790.XXXHL, L vs I curve at 25C**



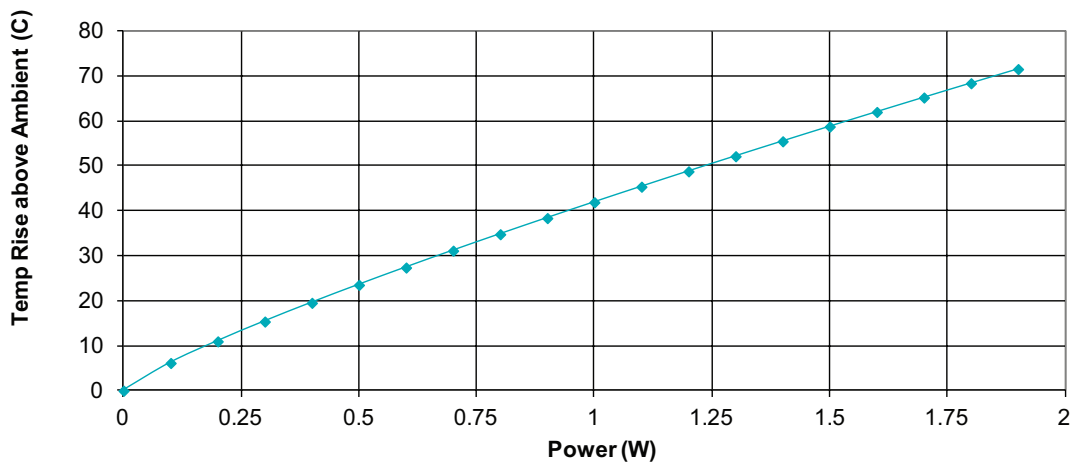
**PA3790.XXXHL, L vs I curve at 100C**



## 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)**

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