# **SMT Power Inductors**

Power Beads - PA3136.XXXHL Series





• Current Rating: Over 90Apk

Inductance Range: 110nH to 235nH

Height: 4.0mm Max

Footprint: 13.8mm x 8.0mm Max

💶 Halogen Free

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C <sup>8</sup>									
Part Number	Inductance <sup>1</sup> @ OAdc (nH ±15%)	Inductance @ Irated (nH TYP)	<b>Irated</b> <sup>2</sup> (ADC)	$\begin{array}{c} \textbf{DCR}^{3} \\ \text{(m}\Omega \text{ nominal)} \end{array}$	Saturation Current <sup>4</sup> (A TYP)		Heating Current <sup>5</sup>		
					25 °C	100°C	(A TYP)		
PA3136.101HL	110	88	49	0.23 +/- 10%	60	49	50		
PA3136.121HL	120	96	46		53	46			
PA3136.141HL	140	112	38		45	38			
PA3136.161HL	160	128	34		40	34			
PA3136.181HL	180	144	29		34	29			
PA3136.211HL	210	168	25		30	25			
PA3136.241HL	235	188	22.5		26	22.5			

### Notes:

PA3136.XXHL

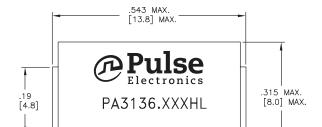
1. Inductance measured at 100kHz, 100mArms.

- 2. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
- 3. The nominal DCR is measured from point (a) to point (b), as shown below on the mechanical drawing.
- 4. 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.
- 5. The heating current is the DC current which causes the part temperature to increase by approximately 40°C.

- 6. 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 curves can be used.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA3136.121HL becomes PA3136.121HLT).
  - Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=24mm), pitch (Po=12.0mm) and depth (Ko=3.80mm).
- 8. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

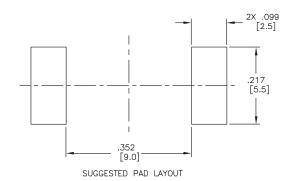
### Mechanicals

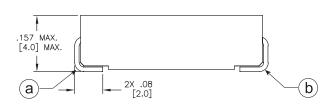
## Schematics



**CTRY** 

D/C





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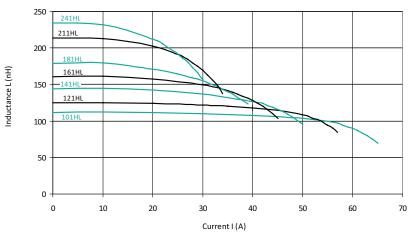
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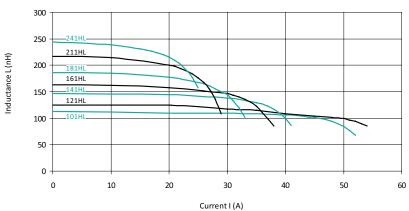
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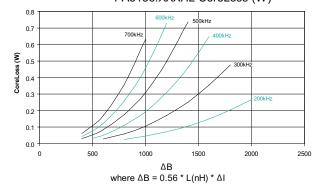




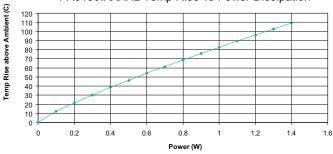
#### PA3136.XXXHL L vs I curve at 100C



## PA3136.XXXHL CoreLoss (W)



### PA3136.XXXHL Temp Rise vs Power Dissipation



Total Power Dissipation (W) = CopperLoss + CoreLoss CopperLoss = Irms^2 \* Rdc(mOhms) / 1000 CoreLoss = (from table)

## For More Information

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