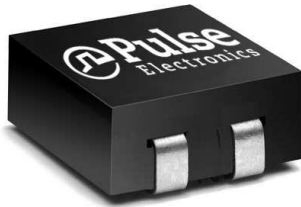


# SMT Power Inductors

Power Beads - PA3146.XXXHL Series



- Ⓜ Two non-coupled inductors integrated into a single package
- Ⓜ Less board space and lower cost than two separate inductors
- Ⓜ **Current Rating:** Over 94A<sub>pk</sub>
- Ⓜ **Inductance Range:** 115μH to 300μH
- Ⓜ **Height:** 7.6mm Max
- Ⓜ **Footprint:** 13.7mm x 10.5mm
- Ⓜ Halogen Free

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

Part Number	Inductance @ 0A <sub>DC</sub> (nH ±15%)	Inductance @ I <sub>rated</sub> (nH TYP)	I <sub>rated</sub> <sup>1</sup> (A <sub>DC</sub> )	DCR <sup>2</sup> (mΩ nominal)	Saturation Current <sup>3</sup> (A TYP)		Heating Current (A TYP)
					25°C	100°C	
PA3146.121HL	115	115	30	0.29 ± 10% (per phase)	94	78	30A/phase
PA3146.151HL	150	150	30		72	60	
PA3146.181HL	175	175	30		62	52	
PA3146.211HL	215	215	30		48	43	
PA3146.231HL	230	230	30		43	39	
PA3146.271HL	270	270	30		37	33	
PA3146.301HL	300	240	28		32	28	

### Notes:

- The rated current as listed is either the saturation current 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 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.
- The heating current is the DC current which causes the part temperature to increase by approximately 40°C.
- 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 core loss and temperature rise curves can be used.
- Optional Tape & Reel package can be ordered by adding a "T" suffix to the part number (i.e. PA3146.211HL becomes PA3146.211HLT). 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=7.8mm).
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

USA 858 674 8100

Germany 49 7032 7806 0

Singapore 65 6287 8998

Shanghai 86 21 62787060

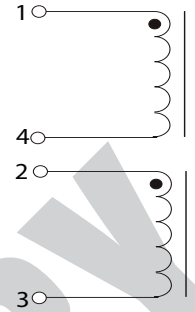
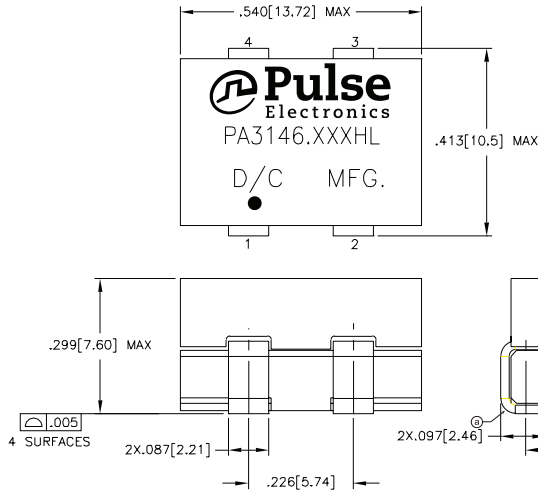
China 86 755 33966678

Taiwan 886 3 4356768

## Mechanical

## Schematics

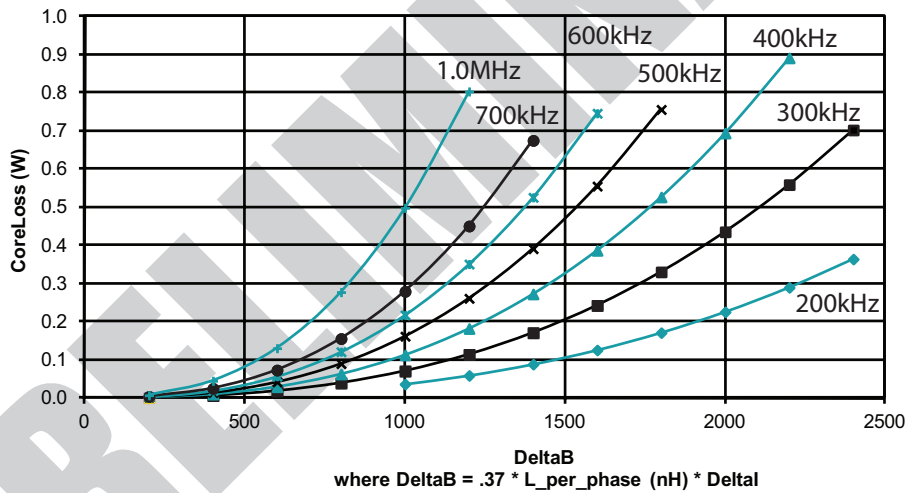
PA3146.XXXHL



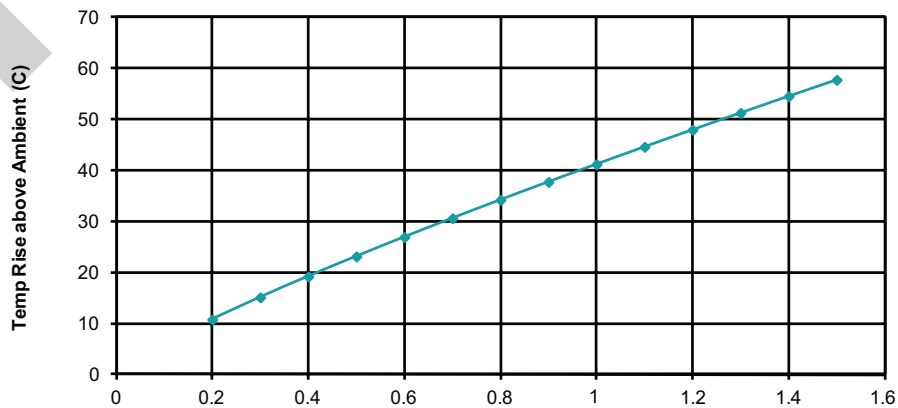
Weight .....4.1grams  
 Tape & Reel .....400/reel  
 Dimensions: Inches  
 mm

Unless otherwise specified,  
 all tolerances are  $\pm \frac{.010}{0,25}$

PA3146.XXXNL CoreLoss (W)



PA3146.xxxNL Temp Rise vs Power Dissipation



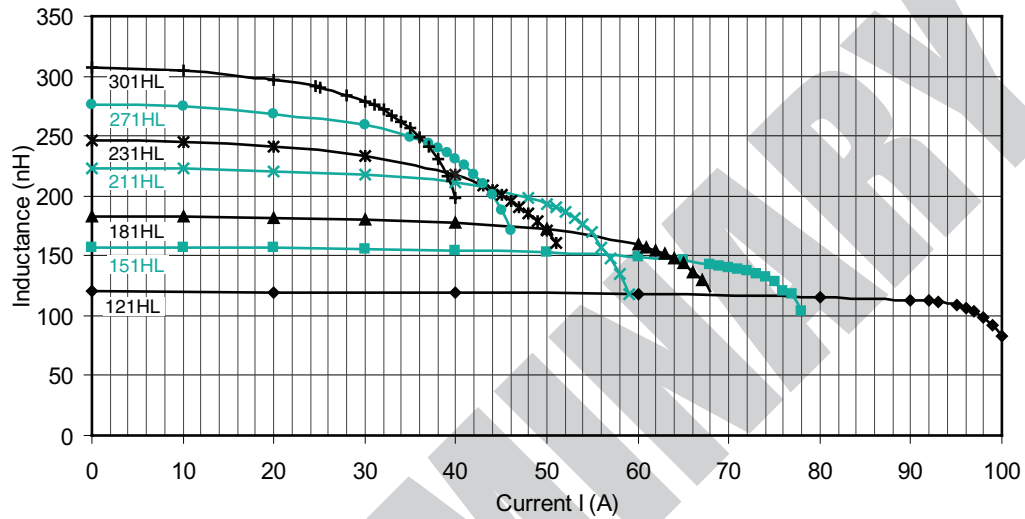
Total Power Dissipation (W) = CopperLoss + CoreLoss  
 CopperLoss =  $2 * (I_{\text{rms\_per\_phase}})^2 * (R_{\text{dc(mOhms)\_per\_phase}}) / 1000$   
 CoreLoss = (from table)

# SMT Power Inductors

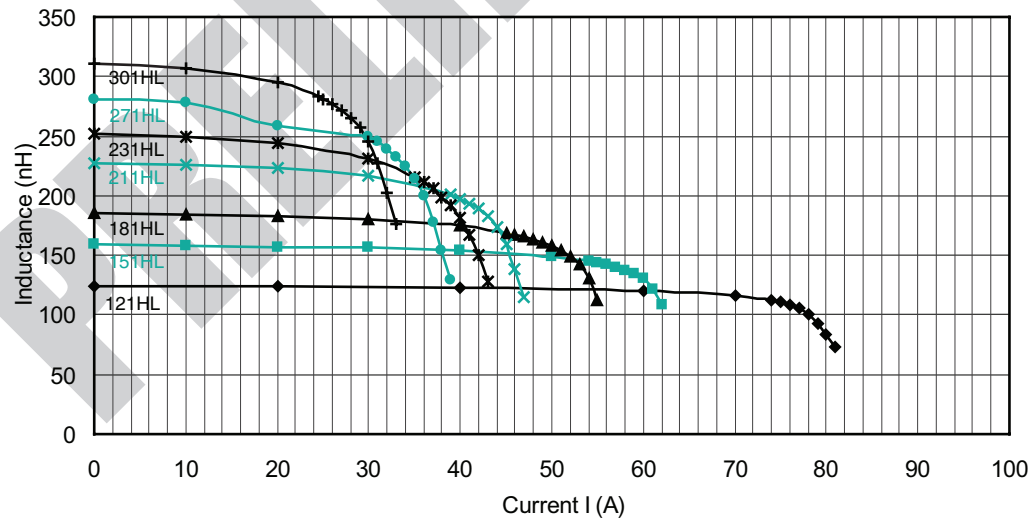
Power Beads - PA3146.XXXHL Series

## Typical Inductance vs DC Bias @ 25°C

PA3146.XXXHL L vs I curve at 25C



PA3146.XXXHL L vs I curve at 100C



## For More Information

**Pulse Worldwide Headquarters**  
12220 World Trade Drive  
San Diego, CA  
92128  
U.S.A.

**Pulse Europe**  
Einsteinstrasse 1  
D-71083 Herrenberg  
Germany

**Pulse China Headquarters**  
B402, Shenzhen Academy of  
Aerospace Technol-  
ogy 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)

Tel: 858 674 8100  
Fax: 858 674 8262

Tel: 49 7032 78060  
Fax: 49 7032 7806 135

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, 2011. Pulse Electronics, Inc. All rights reserved.