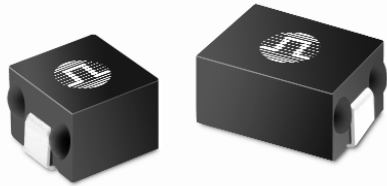








# SMT POWER INDUCTORS

## Power Beads - PA1512 Series



-  High frequency VRM10.0 applications
-  **Current Rating:** Over 50A<sub>pk</sub>
-  **Inductance Range:** 72nH to 150nH
-  **Footprint:** 7.0 x 7.0mm Max
-  **Height:** 4.96mm Max
-  **Frequency Range:** up to 2MHz

### Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

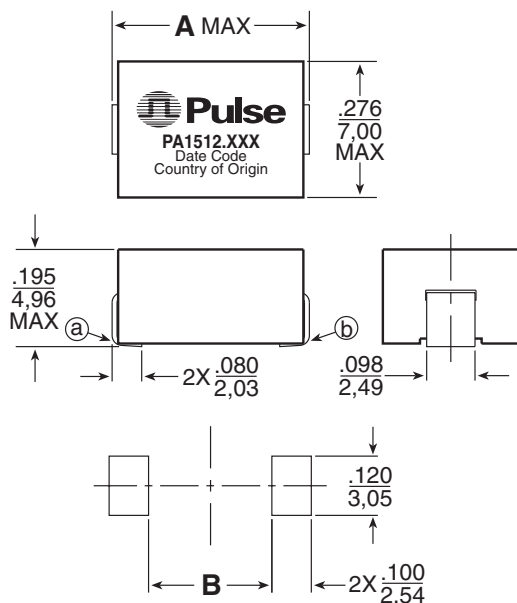
Part Number	Inductance @ I <sub>rated</sub> (nH ±20%)	I <sub>rated</sub> <sup>4</sup> (A <sub>DC</sub> )	DCR <sup>1,2</sup> (mΩ ±6%)	Inductance <sup>3</sup> @ 0A <sub>DC</sub> (nH ±20%)	Saturation Current <sup>5</sup> (A <sub>DC</sub> )		Heating <sup>6</sup> Current (A)
					25°C	100°C	
<b>PA1512 SERIES - 7.0MM X 7.0MM X 5.0MM</b>							
PA1512.700T	72	31	0.27	72	50+	50+	31
PA1512.101T	102	31	0.27	105	48	42	31
PA1512.151T	134	28	0.27	150	32	28	31

#### NOTES:

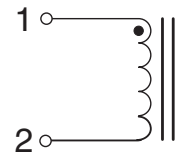
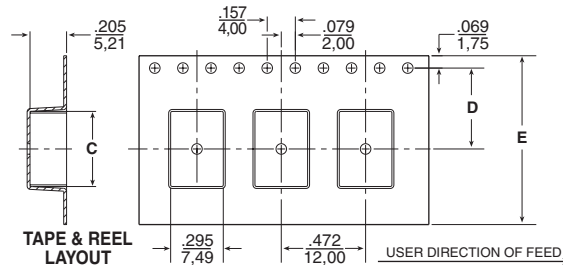
- The nominal DCR has a tolerance of ±6%. This tolerance is guaranteed by design, but is not a manufacturing production test. The nominal DCR is measured from point (a) to point (b), as shown below on the mechanical drawing.
- For manufacturing production test, a maximum DCR value of 0.5mΩ is used.
- The inductance has a tolerance of ±9%. This tolerance is guaranteed by design, but is not a manufacturing production test. For manufacturing production test, a tolerance of ±20% is used.
- The rated current as listed is either the saturation current or the heating current depending on which value is lower.
- The saturation current is the 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. This current is determined by soldering the component on a typical application PCB, and then applying the current to the device for 30 minutes without any forced air cooling.
- 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 coreloss and temperature rise curves can be used.
- Pulse complies with industry standard tape and reel specification EIA481.

## Mechanical

## Schematic



SUGGESTED PAD LAYOUT



Dim.	inches/mm
A	.276/7,00
B	.091/2,30
C	.300/7,62
D	.295/7,49
E	.630*/16,00**

\* ±.012 inches

\*\* ±0,30 mm

Weight 0.94 grams  
Tape & Reel .....1000/reel

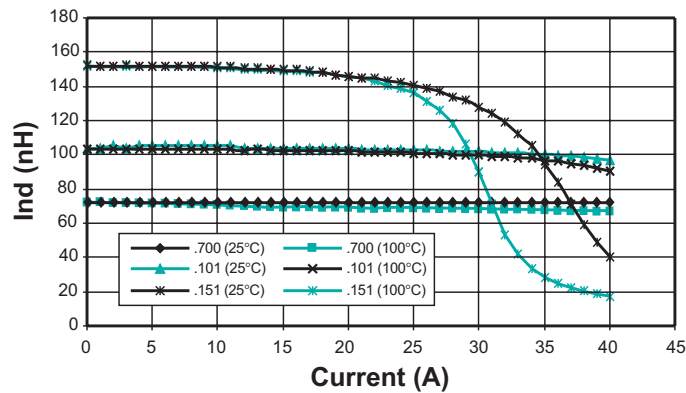
Dimensions: Inches/mm  
Unless otherwise specified,  
all tolerances are ± .010  
0,25

# SMT POWER INDUCTORS

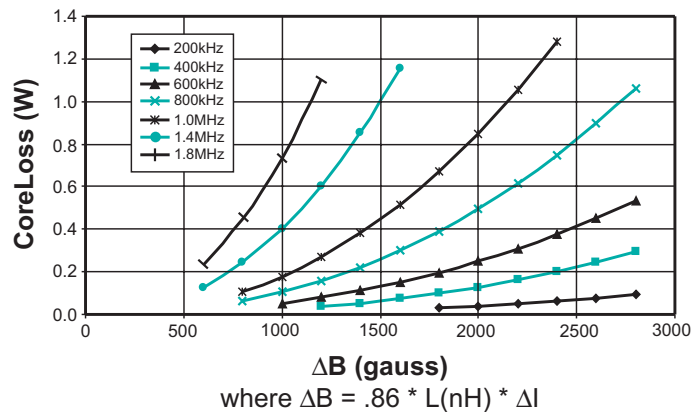
## Power Beads - PA1512 Series



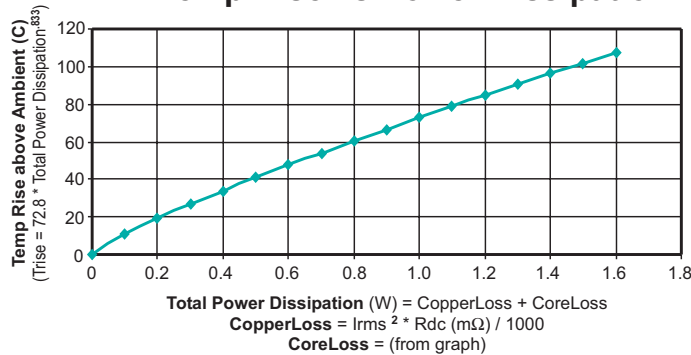
### Inductance vs Current



### CoreLoss vs Flux Density



### Temp Rise vs Power Dissipation



### For More Information:

UNITED STATES (Worldwide)	UNITED KINGDOM (Northern Europe)	FRANCE (Southern Europe)	SINGAPORE (Southern Asia)	TAIWAN, R.O.C. (Northern Asia)	HONG KONG (China/Hong Kong)	DISTRIBUTOR
12220 World Trade Drive San Diego, CA 92128 U.S.A. <a href="http://www.pulseeng.com">http://www.pulseeng.com</a> TEL: 858 674 8100 FAX: 858 674 8262	3 Huxley Road Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	3F-4, No. 81, Sec. 1 HsinTai Wu Road Hsi-Chih, Taipei Hsien Taiwan, R.O.C. Tel: 886 2 2698 0228 FAX: 886 2 2698 0948	Unit 11, 11/F Wah Lai Industrial Centre 10-14 Kwei Tei Street, Fotan, Shatin, Hong Kong TEL: 852 2788 6588 FAX: 852 2776 1055	

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.