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SMT Power Inductors

Power Beads - PA3784.XXXHL Series

Pulse a YAGEO company



- ***Current Rating:*** *Over 94 Apk*
- ***Inductance Range:*** *120nH to 180nH*
- ***Height:*** *8.0 mm Max*
- ***Footprint:*** *10.0mm x 8.0mm Max*

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C[7]

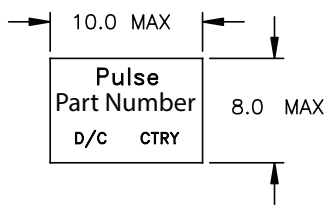
Part Number Commerical	Inductance[1] @ 0ADC (nH +/- 10%)	Inductance[2] @Irated (nH TYP)	Irated[3] (ADC)	DCR[4] (mΩ nominal)	Saturation Current[5] (A TYP) 25°C	Saturation Current[5] (A TYP) 100°C	Heating Current[6] (A TYP)
PA3784.121HL	120	120	84	0.18 +/- 5%	94	84	70
PA3784.151HL	150	150	67		83	67	
PA3784.181HL	180	165	55		67	55	

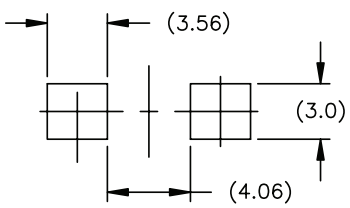
NOTES:

1. Inductance measured at 100kHz, 100mVrms.
2. Inductance at Irated is the value of the inductance at 25°C at the listed rated current.
3. 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.
4. The nominal DCR is measured from point ⓐ to point ⓑ, as shown below on the mechanical drawing.
5. 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.
6. The heating current is the DC current which causes the part temperature to increase by approximately 40°C when used in a typical application.
7. 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.
8. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA3784.121HL becomes PA3784.121HLT).
   Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=24mm), pitch (Po=16.0mm) and depth (Ko=8.2mm).
9. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

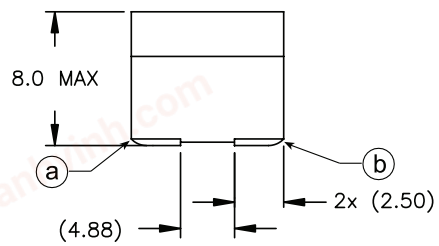
Mechanical

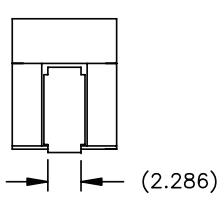
PA3784.XXXHL



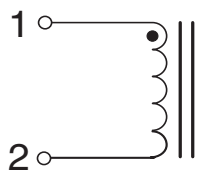


SUGGESTED LAND PATTERN





Schematics

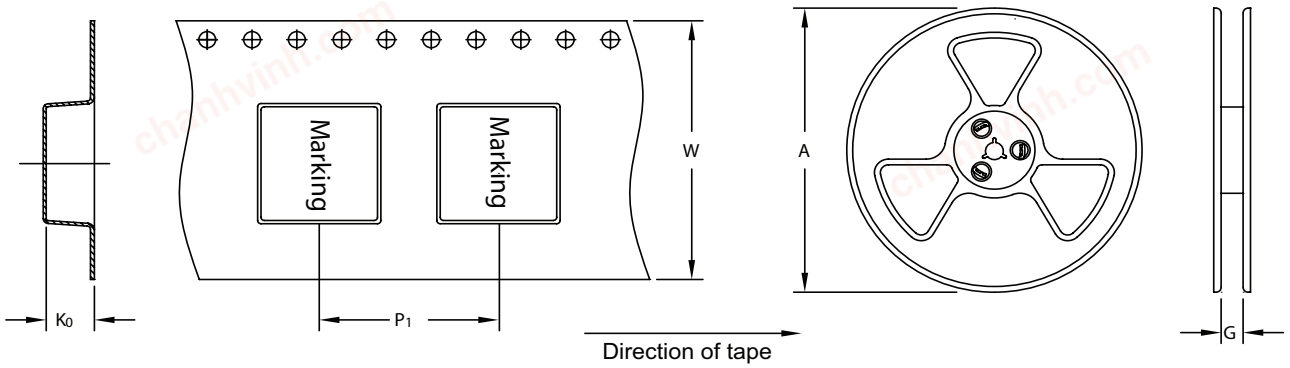


Weight 2.75grams
Tape & Reel 450/reel

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

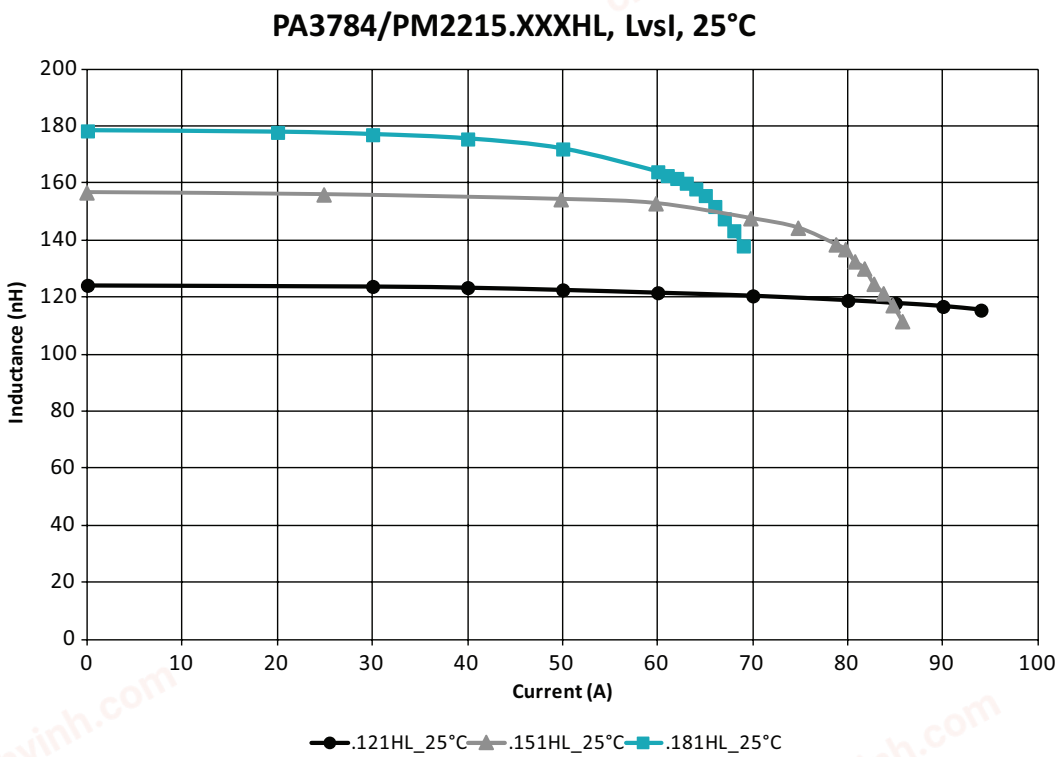
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TAPE & REEL INFO



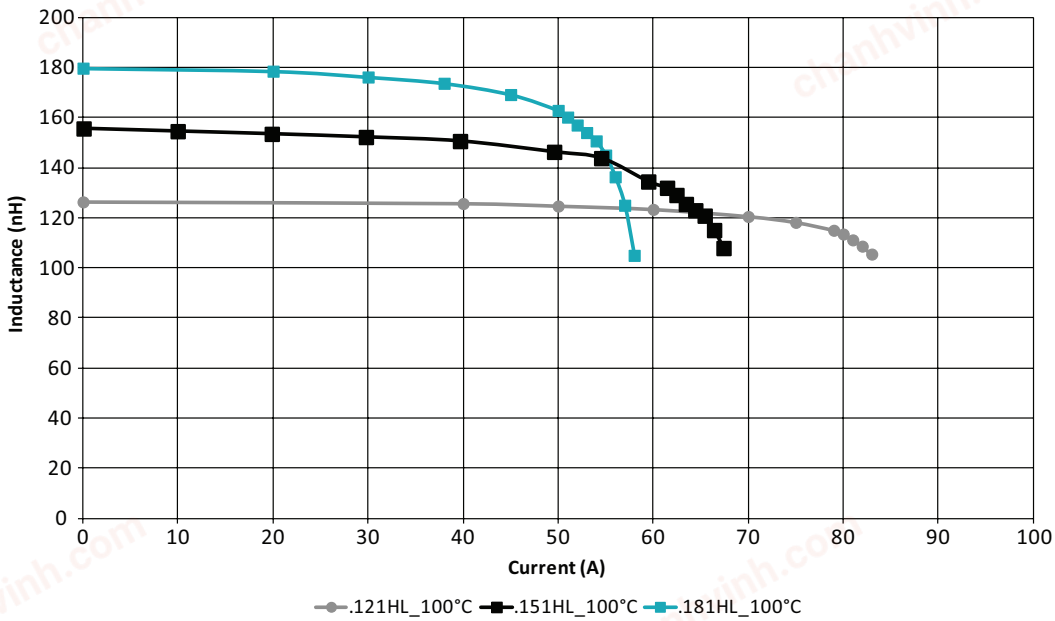
SURFACE MOUNTING TYPE, REEL/TAPE LIST						
PART NUMBER	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P1	W	K0	PCS/REEL
PA3784.XXXHLT	Ø330	24.4	16.0	24.0	8.20	450

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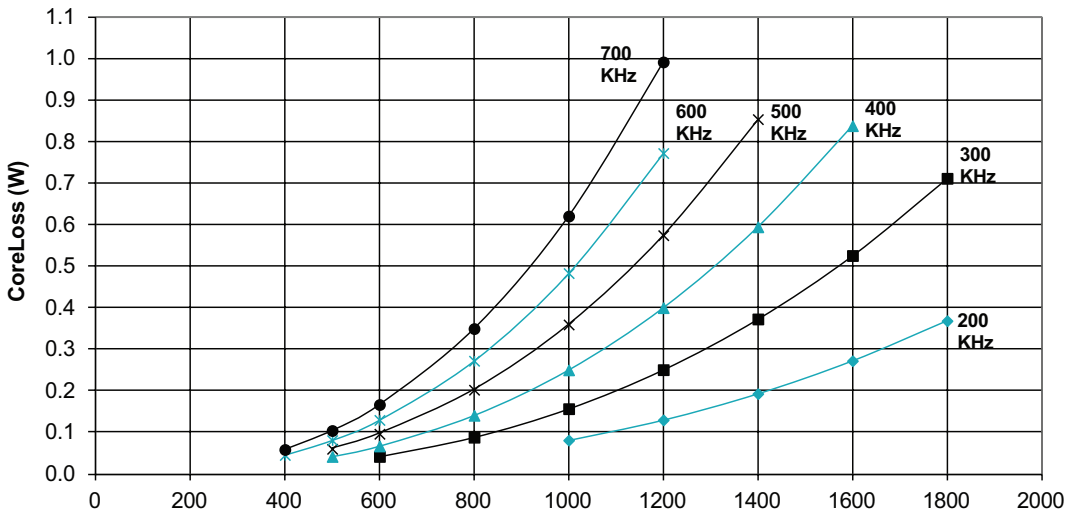


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PA3784/PM2215.XXXHL, Lvsl, 100°C



PA3784/PM2215.XXXHL CoreLoss (W)



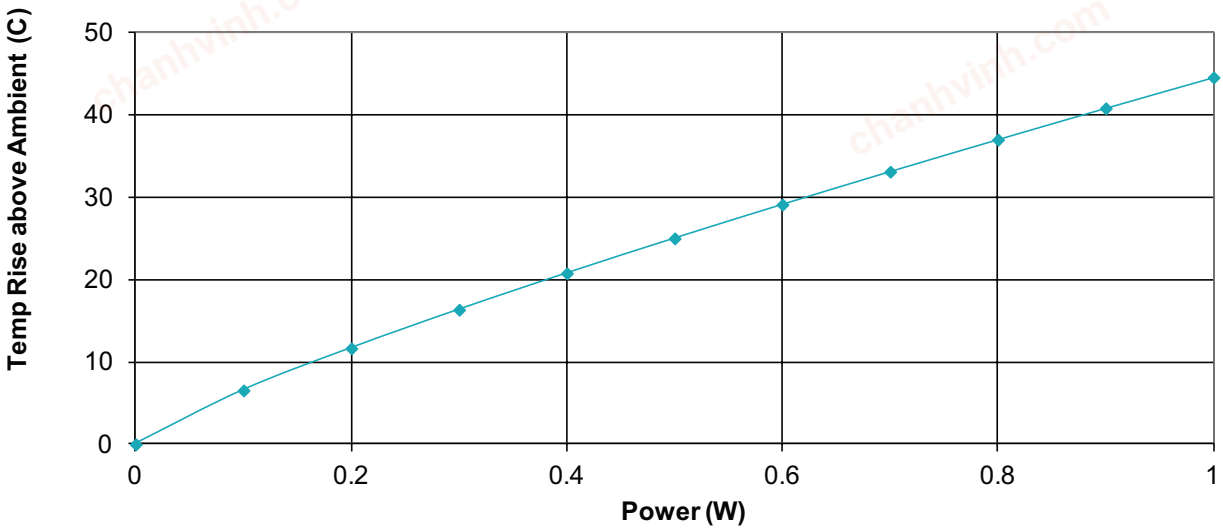
$$\Delta B$$

where $\Delta B = 0.36 * L(nH) * \Delta I$

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

For More Information:

Americas - prodinfo_power_americas@yageo.com | **Europe -** prodinfo_power_emea@yageo.com | **Asia -** prodinfo_power_asia@yageo.com

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