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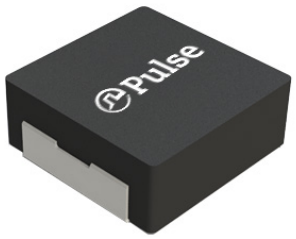
SMT Power Inductor

High Current Molded Power Inductor - PA4344.XXXNLT & PM4344.XXXNLT Series





- ***Height:*** *7.0mm Max*
- ***Footprint****: 17.7mm x 17.2mm Max*
- ***Current Rating:*** *up to 52.0A*
- ***Inductance Range:*** *1.0uH to 100uH*
- *Shielded construction and compact design*
- *High current, low DCR, and high efficiency*
- *Minimized acoustic noise and minimized leakage flux*
- *75 Vdc Voltage Rating between terminals*
- *Available in Commercial (PA) and Automotive (PM) grades*

Electrical Specifications @ 25°C - Operating Temperature -55°C to +125°C							
Commercial[6,7]	Automotive[6,7]	Inductance[5] 100KHz, 1V	Rated[3] Current	DC Resistance		Saturation[2] Current	Core loss for K factor
				TYP.	MAX.		
		uH±20%	A	mΩ	mΩ	A	
PA4344.102NLT	PM4344.102NLT	1.0	52	1.6	2	60	48.5
PA4344.132NLT	PM4344.132NLT	1.3	49	1.7	2.3	54	37.7
PA4344.152NLT	PM4344.152NLT	1.5	47	2	2.5	52	34.9
PA4344.222NLT	PM4344.222NLT	2.2	43.5	2.4	2.7	47	28.5
PA4344.332NLT	PM4344.332NLT	3.3	28	3.5	3.9	45	14.1
PA4344.472NLT	PM4344.472NLT	4.7	25	4.8	5.5	41	11.5
PA4344.562NLT	PM4344.562NLT	5.6	21	5.8	7.05	40	10.1
PA4344.682NLT	PM4344.682NLT	6.8	19	8.4	9.2	32	8.4
PA4344.822NLT	PM4344.822NLT	8.2	18	9.6	10.8	25	7.2
PA4344.103NLT	PM4344.103NLT	10	16.5	11.8	13	24	6.6
PA4344.153NLT	PM4344.153NLT	15	12.5	17.8	20.5	23	5.5
PA4344.223NLT	PM4344.223NLT	22	12	25.1	26.5	18	4.8
PA4344.333NLT	PM4344.333NLT	33	10.7	38	44	15	3.8
PA4344.393NLT	PM4344.393NLT	39	9.2	40	48	11	4.8
PA4344.473NLT	PM4344.473NLT	47	8.7	48	55	9.5	3
PA4344.563NLT	PM4344.563NLT	56	7.8	54	62	9	3
PA4344.683NLT	PM4344.683NLT	68	7	68	80	8	2.7
PA4344.104NLT	PM4344.104NLT	100	5.3	102	118	6.5	2.2

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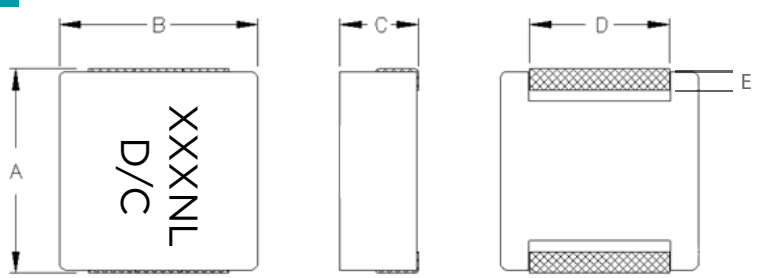
Notes:

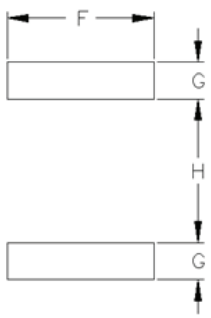
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. The saturation current 1 is the current at which the initial inductance drops approximately 30% at the stated ambient temperature. This current is determined by placingthe component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effect) to the component.
3. The rated current is the DC current required to raise the component temperature by approximately 40 ˚ C. Take note that the components' performanc varies depending on the system condition. It is suggested that the component be tested at the system level, to verify the temperature rise of the component during system operation.
4. The part temperature (ambient+temp rise) should not exceed 125 ˚ C under worst case operating conditions. Circuit design, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
5. Please note that the inductance tolerance of all parts are +/-20% except those indicated with a * which are +/-30%.
6. Parts shown in bold are standard catalog parts and are available through sample stock and distribution. Parts in lighter font are available but are not necessarily held in sample stock or distribution and lead times may be longer. Please contact Pulse for availablity.
7. Both the PA and PM part numbers are AEC-Q200 qualified parts. The PM part numbers have full automotive IATF16949 certification. The PM part number dimensions are 100% tested in production but do not necessarily meet a product capability index (Cpk) > 1.33 and therefore may not strictly conform to PPAP.
8. Special characteristics

Mechanical

PA4344/PM4344



Final Layout

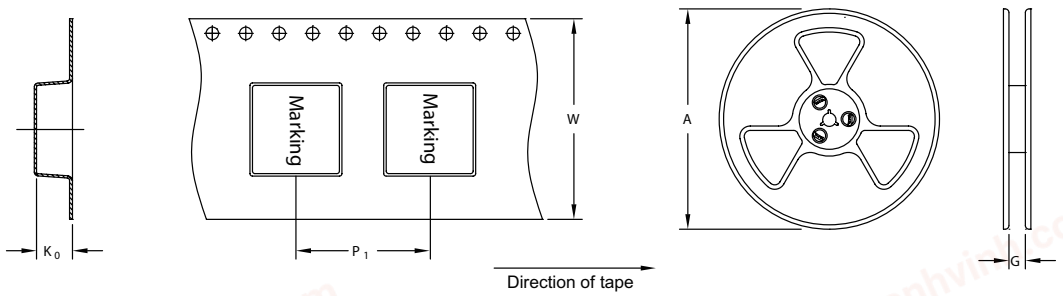


SUGGESTED PAD LAYOUT

Series	A	B	C	D	E	F	G	H
PA4344/PM4344	17.3 +/- 0.4	17.2 max	7 max	11.9 +/- 0.3	2.1 +/- 0.3	12.8 typ	3.5 typ	11.2 typ

All Dimensions in mm.

TAPE & REEL INFO



SURFACE MOUNTING TYPE, REEL/TAPE LIST						
	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA4344/PM4344	Ø330	32	24	32	7.5	200

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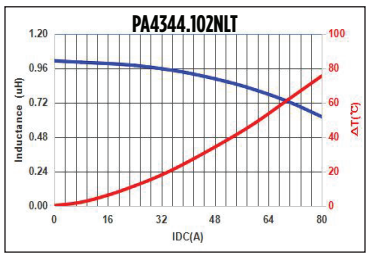

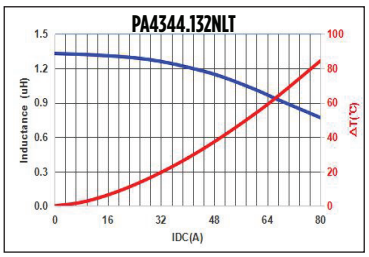

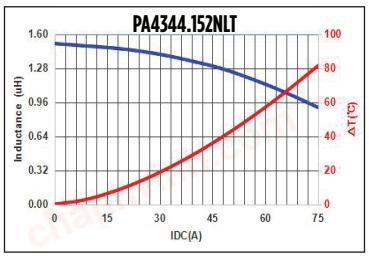

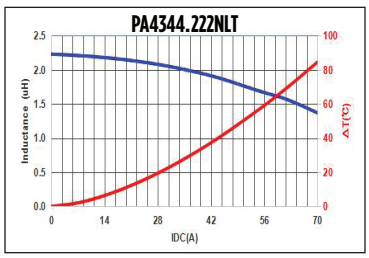

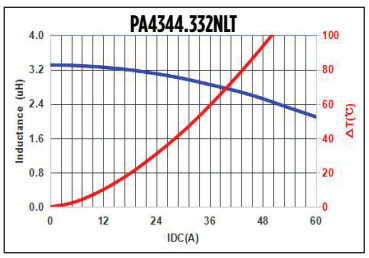

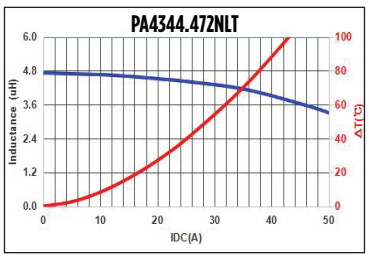

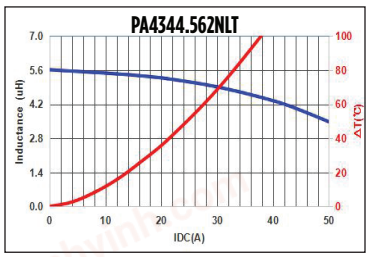

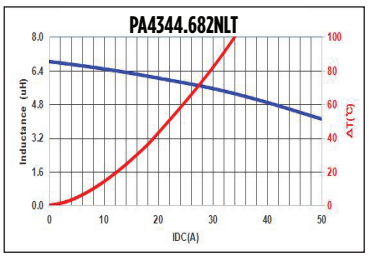

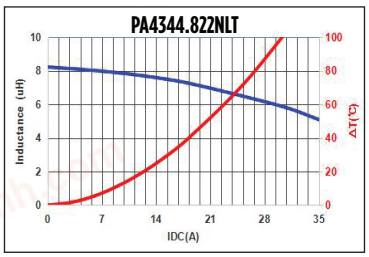

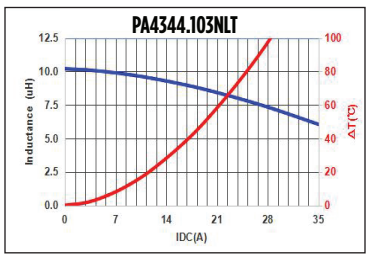

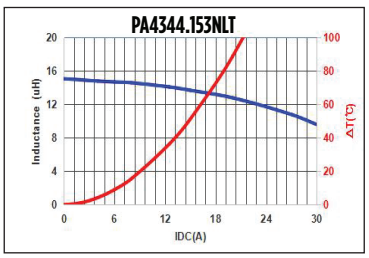

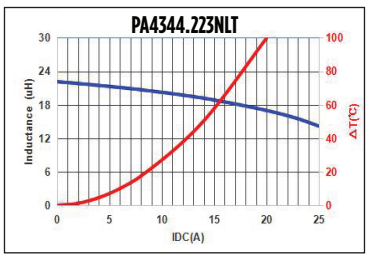

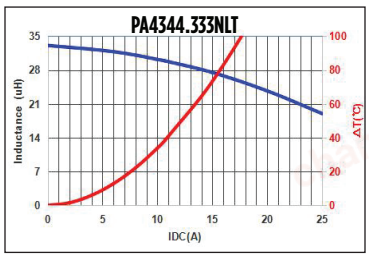

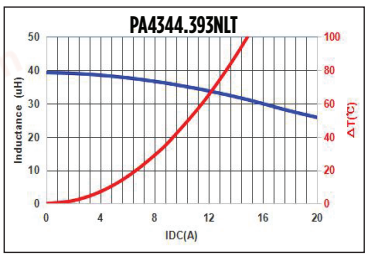

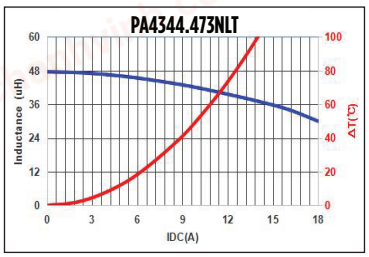

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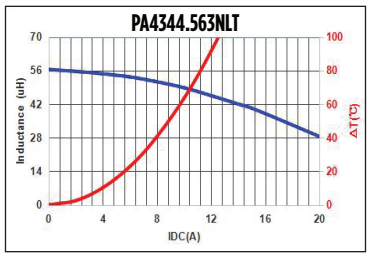
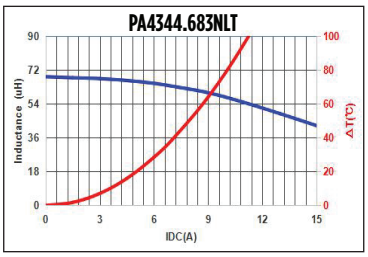
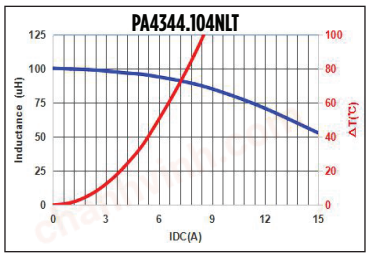
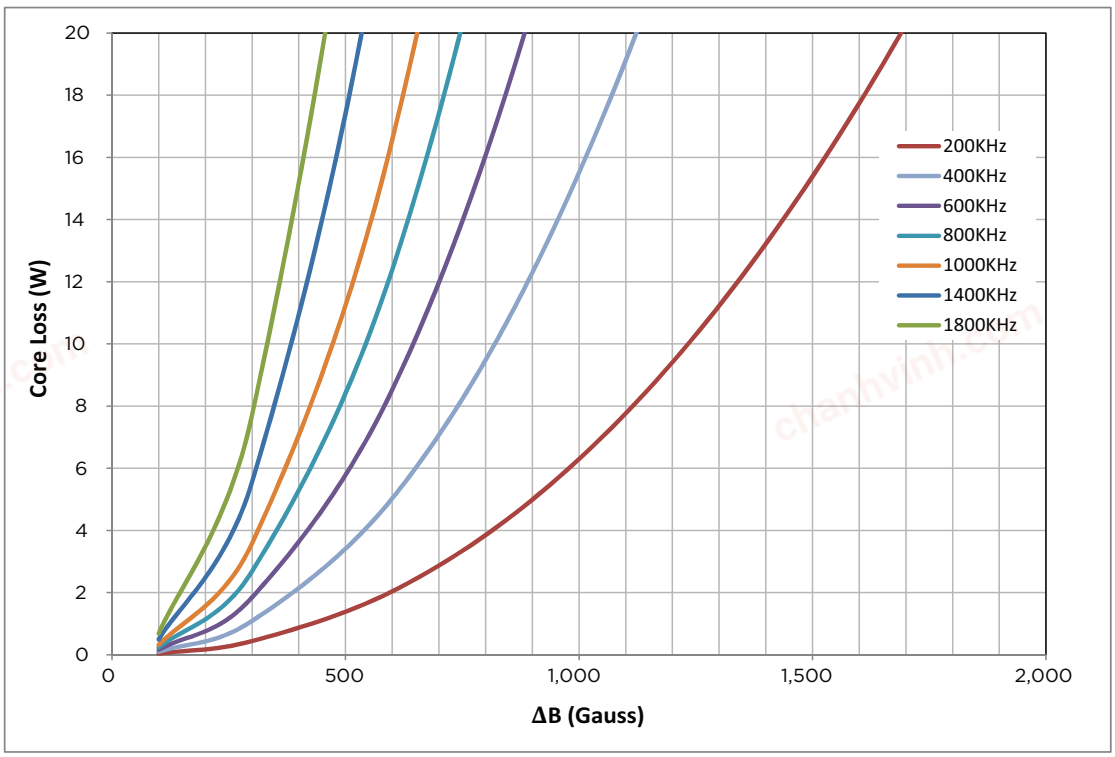






CoreLoss versus Flux Density



$$\Delta B = K * L(uH) * \Delta I(A)$$