SMT Power Inductors

High Current Molded Power Inductor - PA4546.XXXNLT & PM4546.XXXNLT Series

Pulse
a YAGEO company

- ***Height:*** *1.2mm Max*
- ***Footprint:*** *4.7mm x 4.31mm Max*
- ***Current Rating:*** *up to 11.5A*
- ***Inductance Range:*** *0.10uH to 22uH*
- *High current, low DCR, and high efficiency*
- *High reliability*
- *Minimized acoustic noise and minimized leakage flux noise*

Electrical Specifications @ 25°C - Operating Temperature -55°C to +125°C

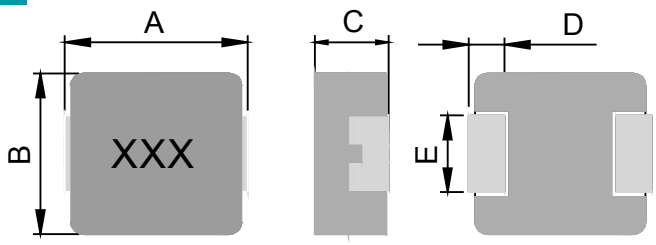
Commercial[6,7]	Automotive[6,7]	Inductance[5] 100KHz, 1.0V	Rated[3] Current	DC Resistance		Saturation[2] Current	K Factor for CoreLoss
				TYP.	MAX.		
		uH±20%	A	mΩ	mΩ	A	
PA4546.101NLT	PM4546.101NLT	**0.10***	**11.5**	**4.3**	**5.5**	**25**	**707.4**
PA4546.121NLT	PA4546.121NLT	0.12*	10.5	4.8	6.2	23	866.2
PA4546.151NLT	PM4546.151NLT	**0.15***	**10.0**	**5.5**	**6.8**	**21.5**	**1004.5**
PA4546.221NLT	PM4546.221NLT	**0.22**	**8.5**	**6.6**	**8.0**	**20**	**717.5**
PA4546.251NLT	PA4546.251NLT	0.25	8.2	8	10	16	618.7
PA4546.331NLT	PM4546.331NLT	**0.33**	**7.0**	**13.6**	**16**	**11**	**655.0**
PA4546.361NLT	PM4546.361NLT	**0.36**	**6.5**	**15.5**	**18**	**8.5**	**448.6**
PA4546.471NLT	PM4546.471NLT	**0.47**	**6.0**	**18.0**	**20**	**6.5**	**535.9**
PA4546.601NLT	PM4546.601NLT	**0.60**	**5.3**	**22.5**	**26**	**6.0**	**493.7**
PA4546.681NLT	PM4546.681NLT	**0.68**	**5.0**	**32**	**37**	**6.0**	**235.8**
PA4546.821NLT	PM4546.821NLT	0.82	4.5	38	44	6.0	192.9
PA4546.102NLT	PM4546.102NLT	**1.00**	**4.0**	**41**	**47**	**6.0**	**269.2**
PA4546.122NLT	PM4546.122NLT	**1.20**	**3.5**	**48**	**56**	**5.0**	**195.8**
PA4546.152NLT	PM4546.152NLT	**1.50**	**3.0**	**55**	**63.3**	**4.0**	**198.6**
PA4546.222NLT	PM4546.222NLT	**2.20**	**2.8**	**69.2**	**80**	**3.5**	**164.0**
PA4546.332NLT	PM4546.332NLT	**3.30**	**2.3**	**84**	**97**	**3.0**	**187.3**
PA4546.472NLT	PM4546.472NLT	**4.70**	**2.0**	**128**	**145**	**2.5**	**122.3**
PA4546.562NLT	PM4546.562NLT	**5.60**	**1.7**	**180**	**208**	**2.3**	**89.0**
PA4546.682NLT	PM4546.682NLT	**6.80**	**1.5**	**300**	**360**	**1.7**	**87.7**
PA4546.822NLT	PM4546.822NLT	**8.20**	**1.4**	**313**	**376**	**1.6**	**60.6**
PA4546.103NLT	PM4546.103NLT	**10**	**1.3**	**410**	**463**	**1.4**	**69.3**
PA4546.153NLT	PM4546.153NLT	15	1.05	550	610	1.2	60.3
PA4546.183NLT	PM4546.183NLT	**18**	**0.9**	**860**	**960**	**1.1**	**58.5**
PA4546.223NLT	PM4546.223NLT	22	0.8	950	1050	1.0	52.4

Notes:

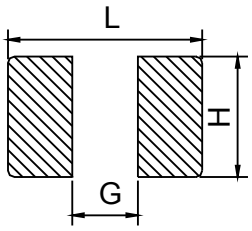
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. The saturation current is the current at which the initial inductance drops approximately 30% at the stated ambient temperature. This current is determined by placing the compnent 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. The PA4546.XXXNLT and PM4546.XXXNLT are both AEC-Q200 qualified. The PM4546.XXXNLT part numbers are also IATF16949 certified. The mechanical dimensions are 100% tested in production but do not necessarily meet a product capability index (Cpk) 1.33 and therefore the PM4546.XXXNLT may not strictly conform to PPAP
8. See Characteristics

Mechanical

PA4546/PM4546



FINAL LAYOUT

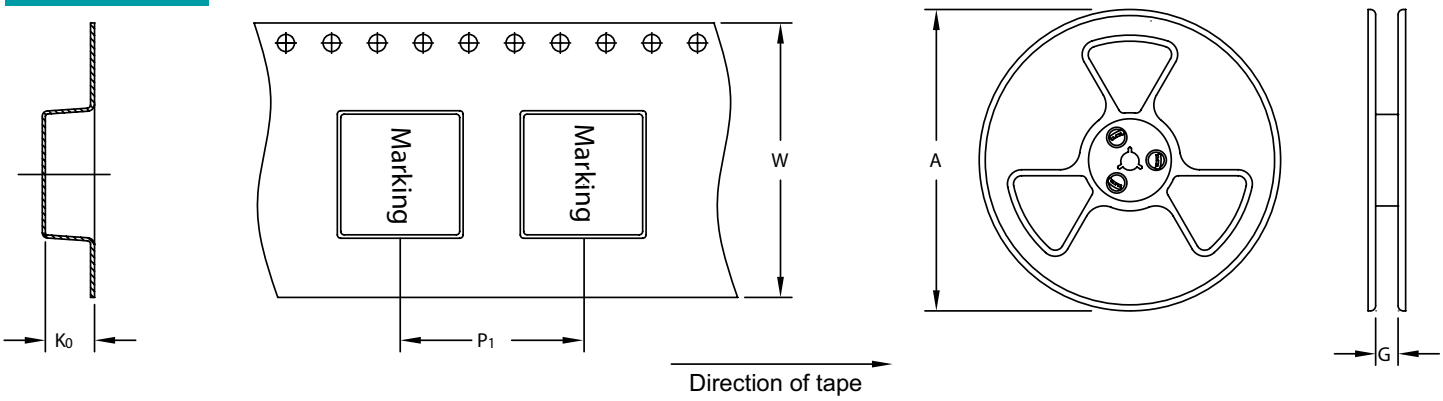


SUGGESTED PAD LAYOUT

Series	A	B	C	D	E	L	G	H
PA4546/PM4546	4.45±0.25	4.06±0.25	1.0±0.2	0.76±0.30	2.0±0.20	5.2	2.2	2.3

All Dimensions in mm.

TAPE & REEL INFO

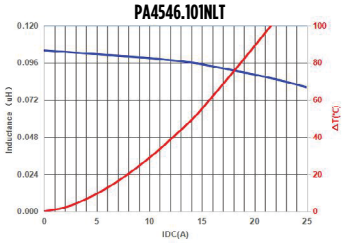


SURFACE MOUNTING TYPE, REEL/TAPE LIST						
	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA4546/PM4546	Ø330	12.4	8	12	1.5	4000

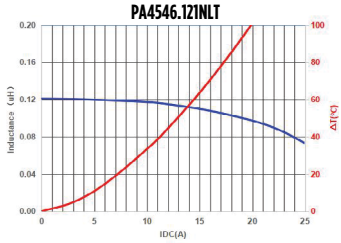
Typical Performance Curves

PA4546.XXXNLT

PA4546.101NLT



PA4546.121NLT



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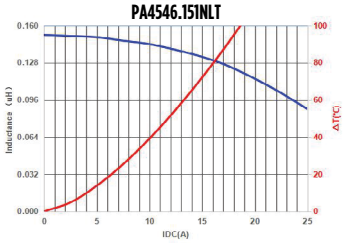

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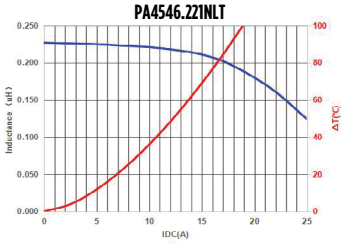
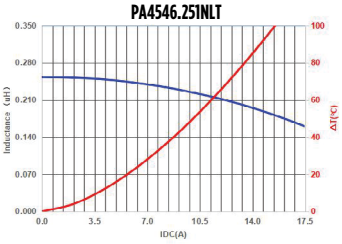


PA4546.251NLT



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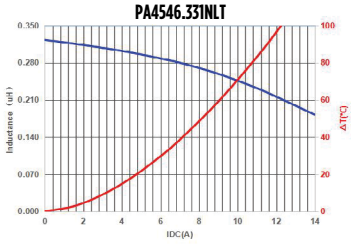

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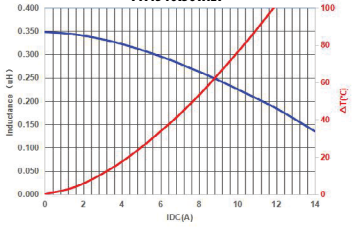

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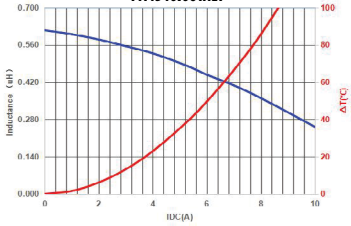

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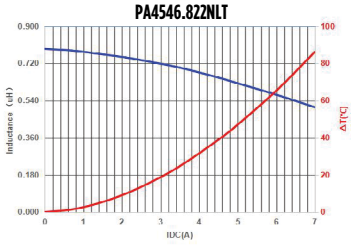

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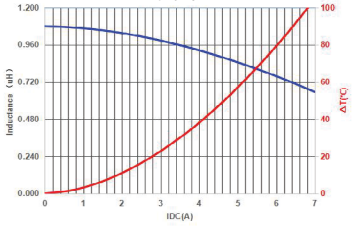

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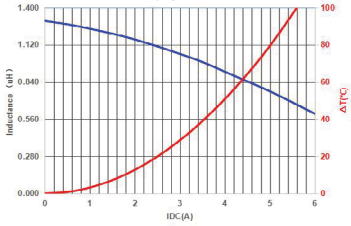

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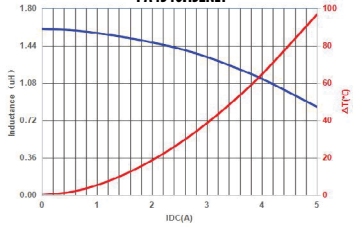

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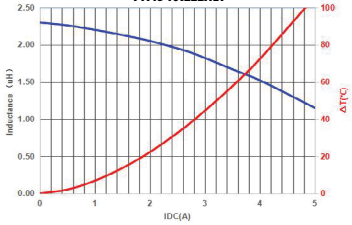

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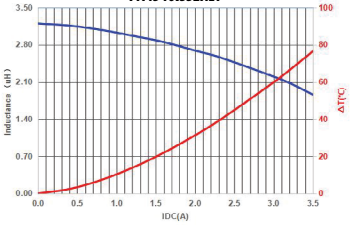
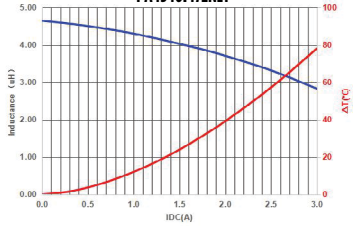
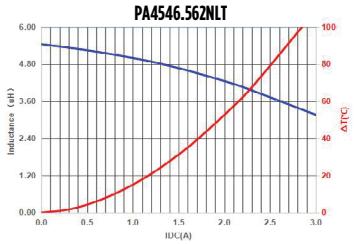
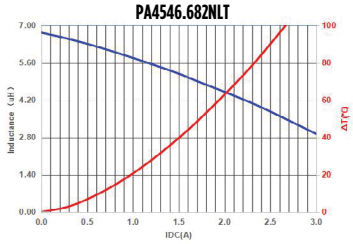
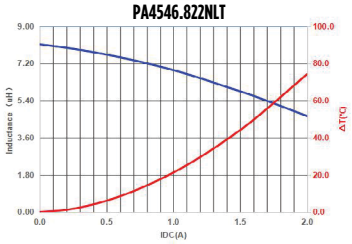


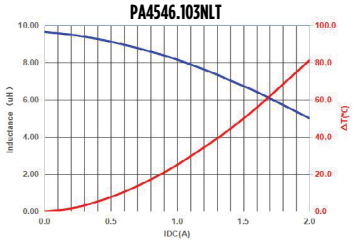
PA4546.472NLT

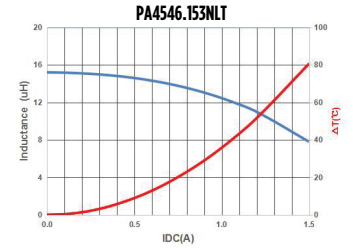


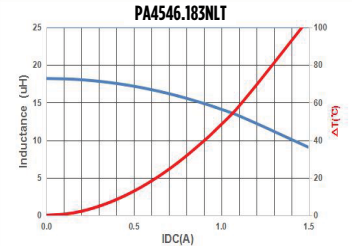

PA4546.562NLT
Inductance (uH)
ΔT(°C)
IDC(A)


PA4546.682NLT
Inductance (uH)
ΔT(°C)
IDC(A)


PA4546.822NLT
Inductance (uH)
ΔT(°C)
IDC(A)


PA4546.103NLT
Inductance (uH)
ΔT(°C)
IDC(A)


PA4546.153NLT
Inductance (uH)
ΔT(°C)
IDC(A)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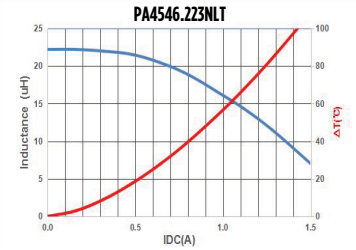
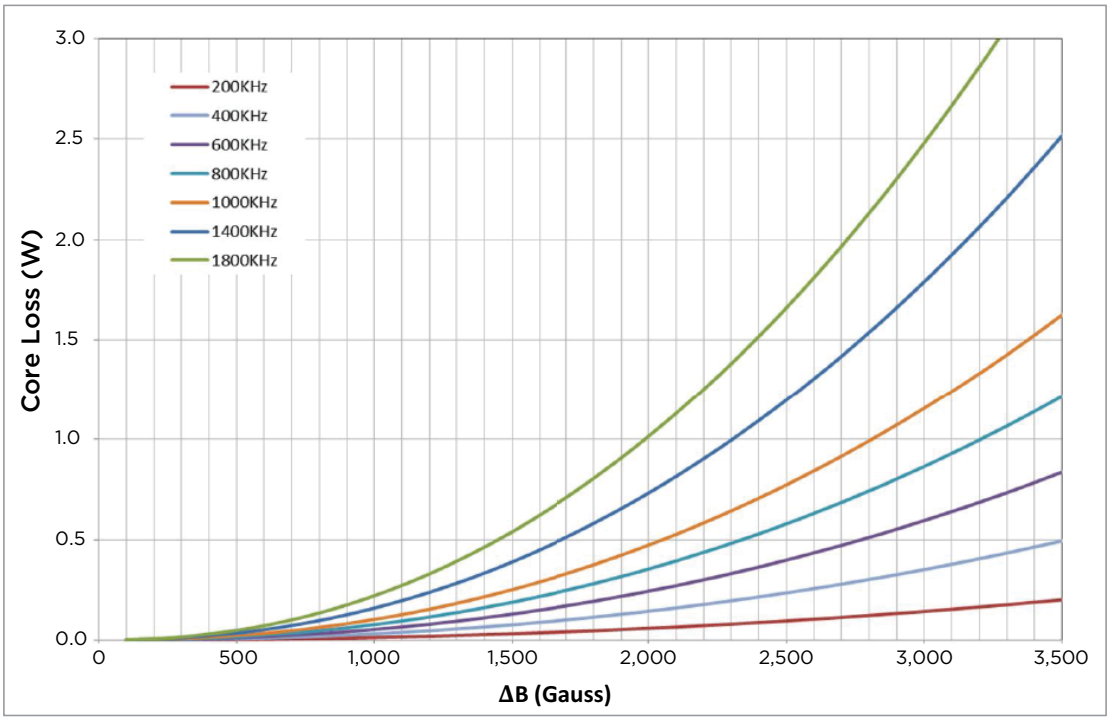
Inductance (uH)
ΔT(°C)
IDC(A)


PA4546.223NLT
Inductance (uH)
ΔT(°C)
IDC(A)

CoreLoss versus Flux Density



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

For More Information:

Americas - prodinfo_power@pulseelectronics.com | **Europe -** power-apps-europe@pulseelectronics.com | **Asia -** power-apps-asia@pulseelectronics.com

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