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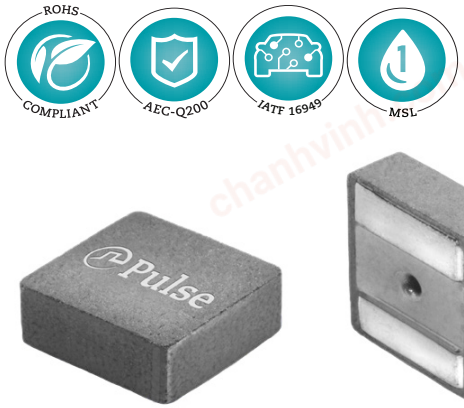
SMT Power Inductors

High Current Composite Inductor - PA5004.XXXNLT and PM2204.XXXNLT



- ***Height:*** *3.0mm Max*
- ***Footprint:*** *6.8mm x 6.6mm Max*
- ***Current Rating:*** *up to 40Apk*
- ***Inductance Range****: 0.18uH to 4.5uH*
- *High current, low DCR, and high efficiency*
- *High reliability*
- *Minimized acoustic noise and minimized leakage flux noise*
- *Available in Commercial (PA5004) and Automotive (PM2204) grades*

Electrical Specifications @ 25°C, Operating Temperature Range -55°C to +155°C

Part Number		▽ Inductance 100KHz, 0.1V	Rated[3] Current	DC Resistance		Saturation[2] Current	K Factor for Core Loss	Mechanical D
Commerical	Automotive[6]			TYP.	MAX.			
		uH±20%	A	mΩ	mΩ	A		±0.3
PA5004.181NLT	**PM2204.181NLT**	**0.18**	**32**	**1.6**	**1.75**	**36**	**358.8**	**5.30**
PA5004.331NLT	**PM2204.331NLT**	**0.33**	**25**	**2.25**	**2.5**	**28**	**228.3**	**5.55**
PA5004.561NLT	**PM2204.561NLT**	**0.56**	**22**	**3**	**3.31**	**25**	**167.4**	**5.30**
PA5004.681NLT	PM2204.681NLT	0.68	20	4.7	5.17	21	-	5.30
PA5004.102NLT	**PM2204.102NLT**	**1**	**18**	**5.5**	**6.05**	**18**	**132.2**	**5.20**
PA5004.122NLT	**PM2204.122NLT**	**1.2**	**16**	**6.7**	**7.4**	**16**	**109.2**	**5.15**
PA5004.152NLT	PM2204.152NLT	1.5	15	8.3	9.13	15.5	-	5.15
PA5004.182NLT	**PM2204.182NLT**	**1.8**	**14**	**9.2**	**10.2**	**13**	**93**	**5.10**
PA5004.222NLT	**PM2204.222NLT**	**2.2**	**10**	**11**	**12.2**	**11**	**81**	**5.05**
PA5004.332NLT	**PM2204.332NLT**	**3.3**	**8**	**18.8**	**20.8**	**9**	**64.4**	**5.00**
PA5004.452NLT	**PM2204.452NLT**	**4.5**	**7**	**23**	**25.3**	**8**	**49.2**	**5.00**

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 is guaranteed to drop by no more than 40%. The typical inductance at a specified current can be found on the typical performance curves.
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 155 ° 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. 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.
6. The PM2204.XXXNLT part numbers are AEC-Q200 and IATF16949 certified. The mechanical 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.
7. Special Characteristics ▽

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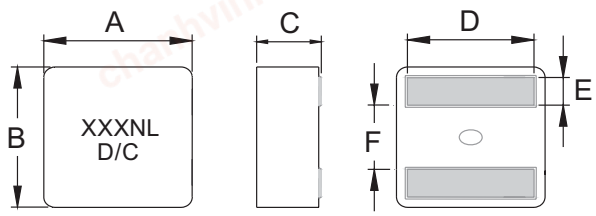
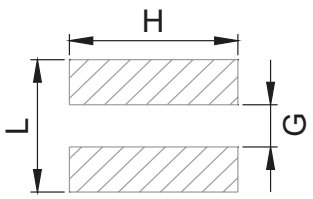
Mechanical

PA5004.XXXNLT and PM2204.XXXNLT



FINAL LAYOUT

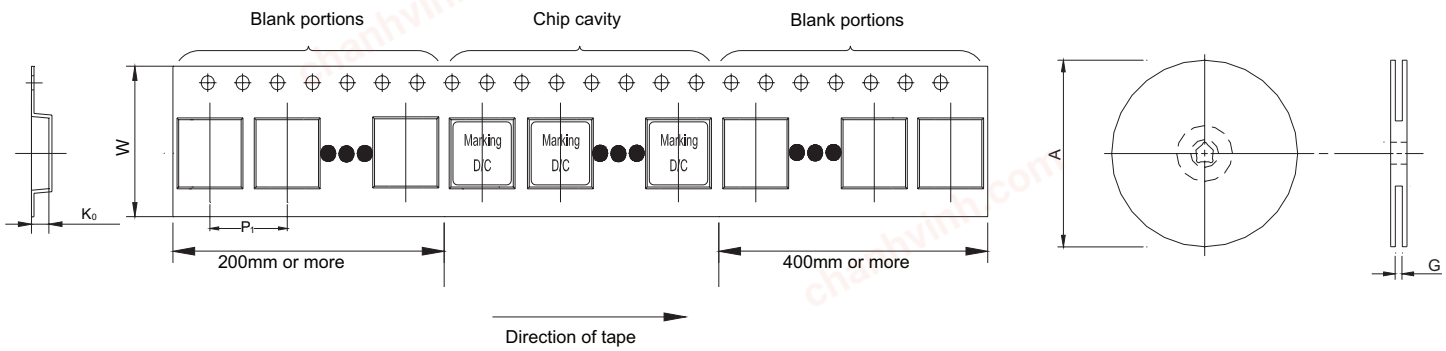


SUGGESTED PAD LAYOUT

Series	Mechanical	A	B	C	D	E	F	L	G	H
PA5004/PM2204	1.2uH & below	6.6±0.2	6.4±0.2	2.8±0.2	SEE SPEC TABLE	1.4±0.2	2.6±0.25	5.6 (REF)	2.5 (REF)	5.6 (REF)
	1.5uH & above			2.9±0.2						

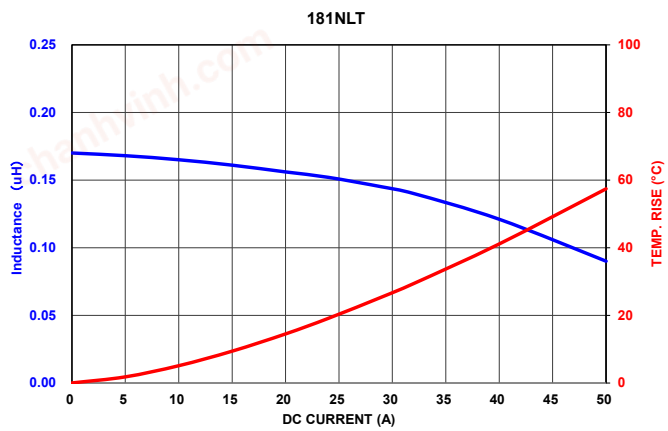
All Dimensions in mm.

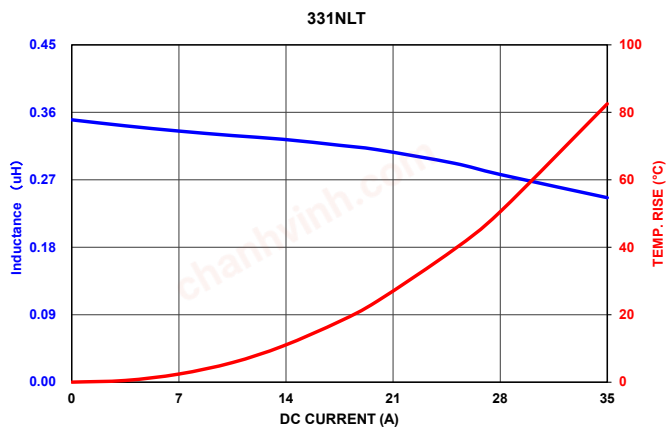
TAPE & REEL INFO



SURFACE MOUNTING TYPE, REEL/TAPE LIST						
	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA5004/PM2204	Ø330	16.4	12	16	3.3	1000

Typical Performance Curves





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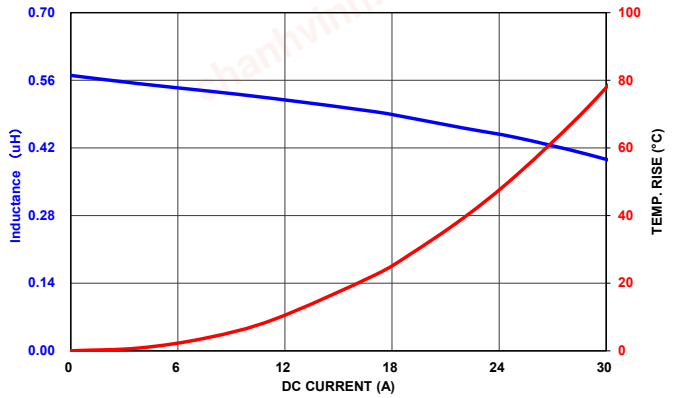
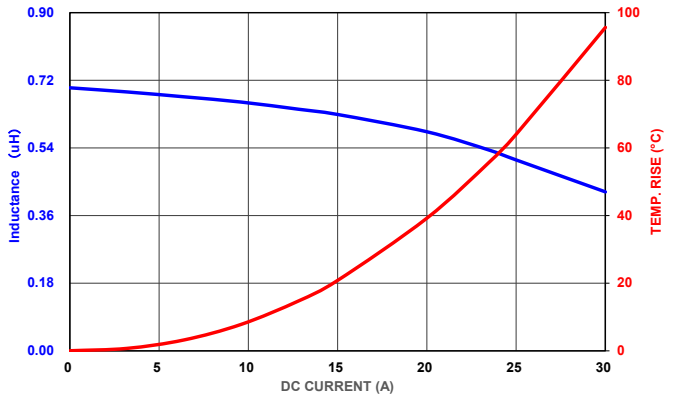
YAGEO GROUP PULSE

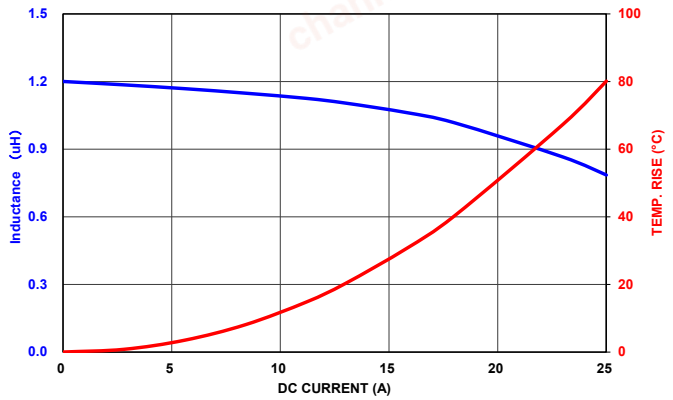
561NLT



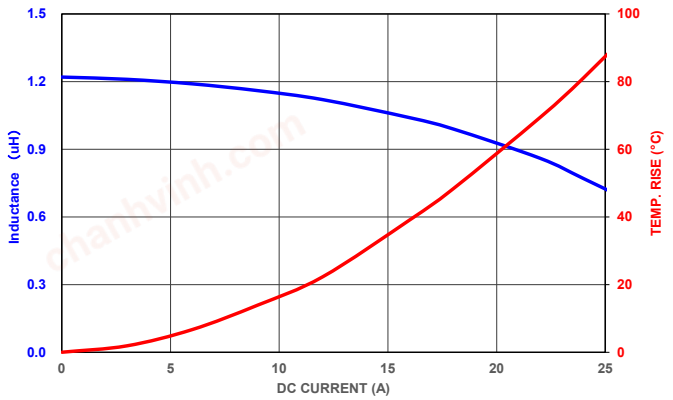
681NLT



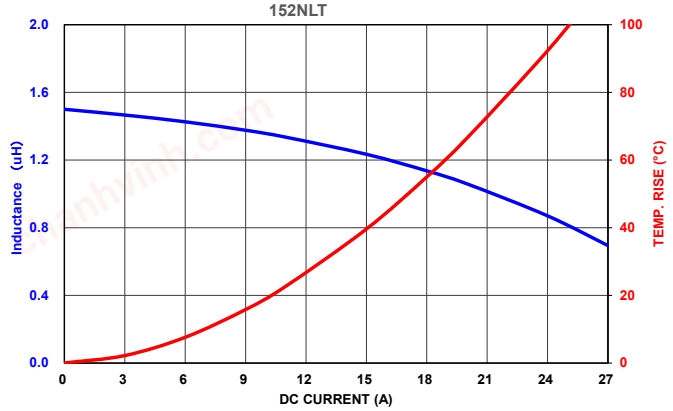
102NLT



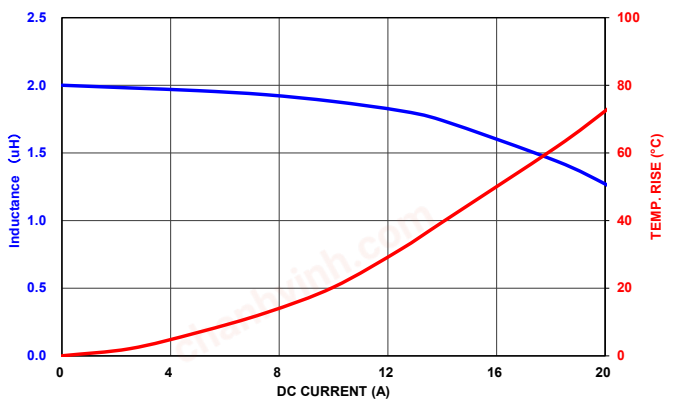
122NLT



152NLT



182NLT



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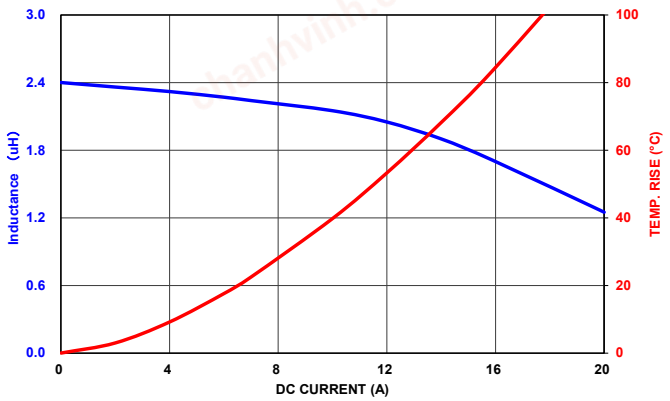
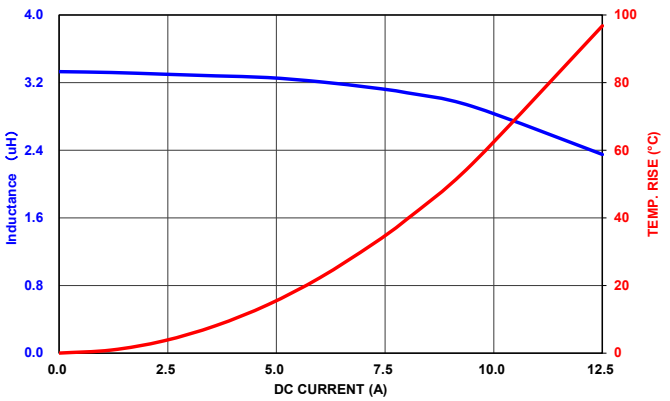
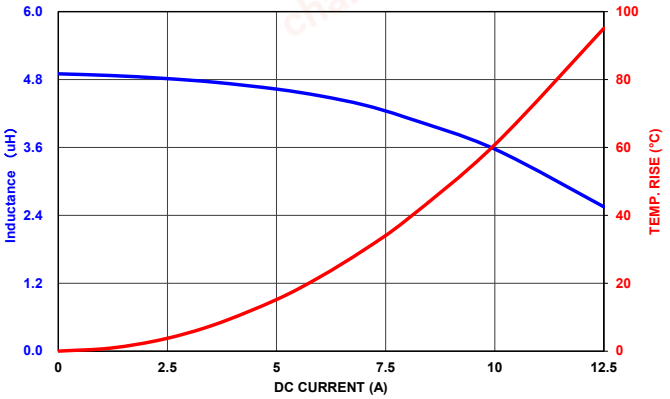
222NLT



332NLT



452NLT



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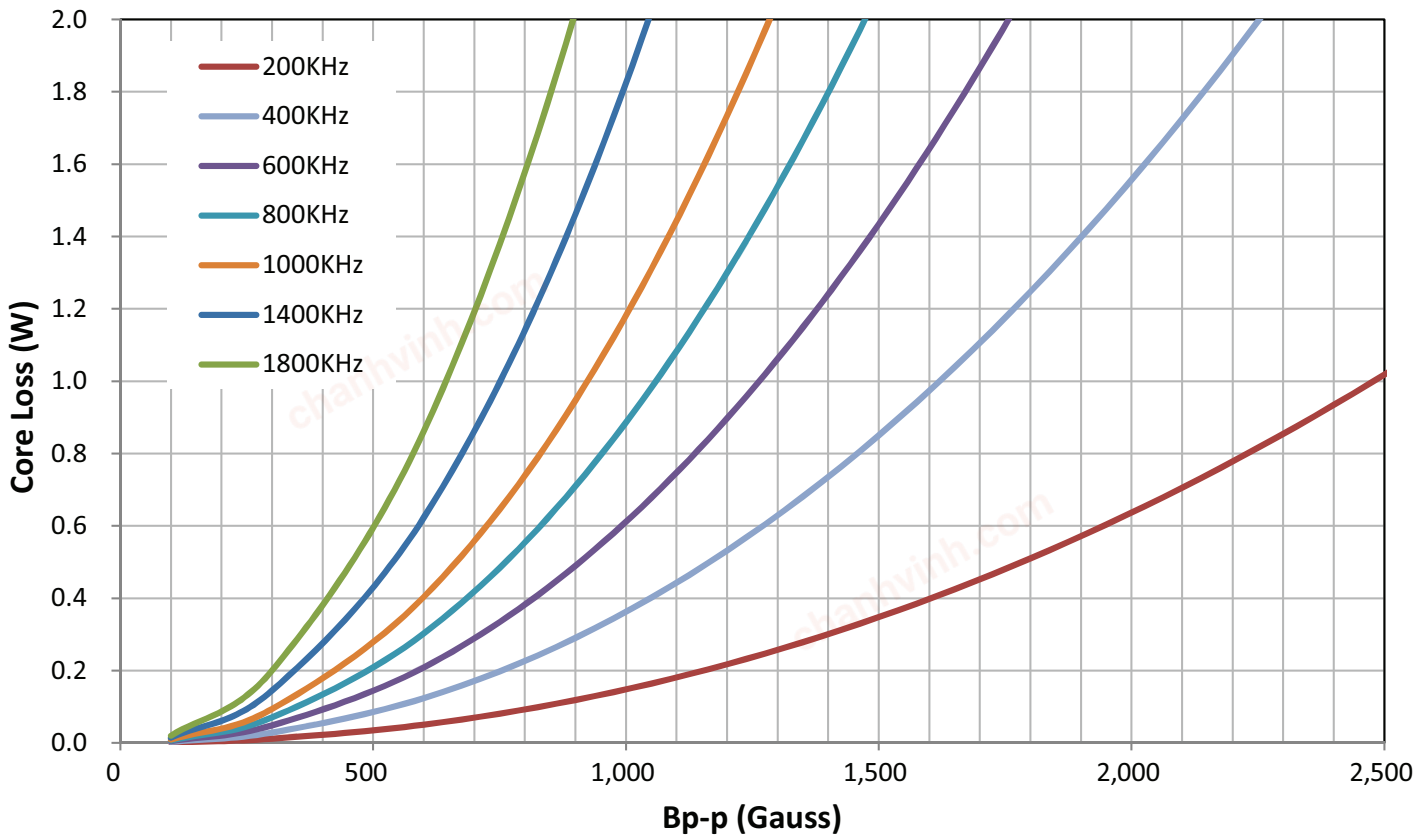
CORE LOSS vs FLUX DENSITY



$$Bp\text{-}p = K * L(uH) * \text{delta } I(A)$$

For More Information:

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

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