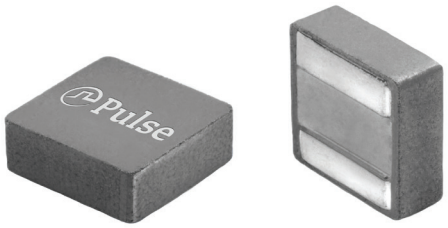
SMT Power Inductors

High Current Composite Inductor - PA5005.XXXNLT and PM2205.XXXNLT

Pulse Electronics POWER



- ***Height:*** *5.0mm Max*
- ***Footprint:*** *6.8mm x 6.6mm Max*
- ***Current Rating:*** *up to 24Apk*
- ***Inductance Range****: 0.82uH to 8.2uH*
- *High current, low DCR, and high efficiency*
- *High reliability*
- *Minimized acoustic noise and minimized leakage flux noise*
- *Available in Commercial (PA5005) and Automotive (PM2205) grades*

Electrical Specifications @ 25°C, Operating Temperature Range per Below[4]

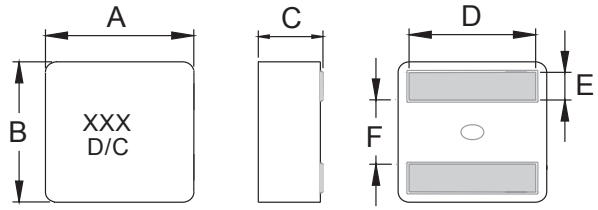
Part Number		Inductance 100KHz, 0.1V	Rated[3] Current	DC Resistance		Saturation[2] Current (25°C)	K Factor for Core Loss	Mechanical D
Commerical	Automotive[6]			TYP.	MAX.			
(-40°C to 125°C)	(-55°C to 155°C)	uH±20%	A	mΩ	mΩ	A		±0.3
PA5005.821NLT	PM2205.821NLT	0.82	21	3.8	4.18	24	132.2	5.3
PA5005.102NLT	PM2205.102NLT	1	20	4.1	4.52	23	132.2	5.3
PA5005.122NLT	PM2205.122NLT	1.2	18	5.3	5.83	22	109.2	5.3
PA5005.152NLT	PM2205.152NLT	1.5	17	5.7	6.3	19.5	93	5.3
PA5005.182NLT	PM2205.182NLT	1.8	16	6.4	7.1	18.5	93	5.3
PA5005.222NLT	PM2205.222NLT	2.2	13	7.7	8.5	16	81	5.2
PA5005.332NLT	PM2205.332NLT	3.3	11	11.2	12.5	12.5	64.4	5.2
PA5005.432NLT	PM2205.432NLT	4.3	9	15.1	16.2	11	53.4	5.2
PA5005.472NLT	PM2205.472NLT	4.7	8.5	16.7	18.4	10.5	49.2	5.2

Notes:

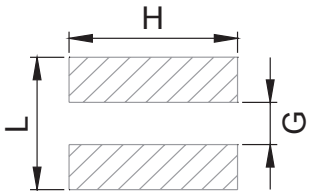
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. The saturation current is the current at which the initial inductance drops approximately 30% at the stated ambient temperature. This current is determined by 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. The PM2205.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.

Mechanical

PA5005.XXXNLT and PM2205.XXXNLT



FINAL LAYOUT

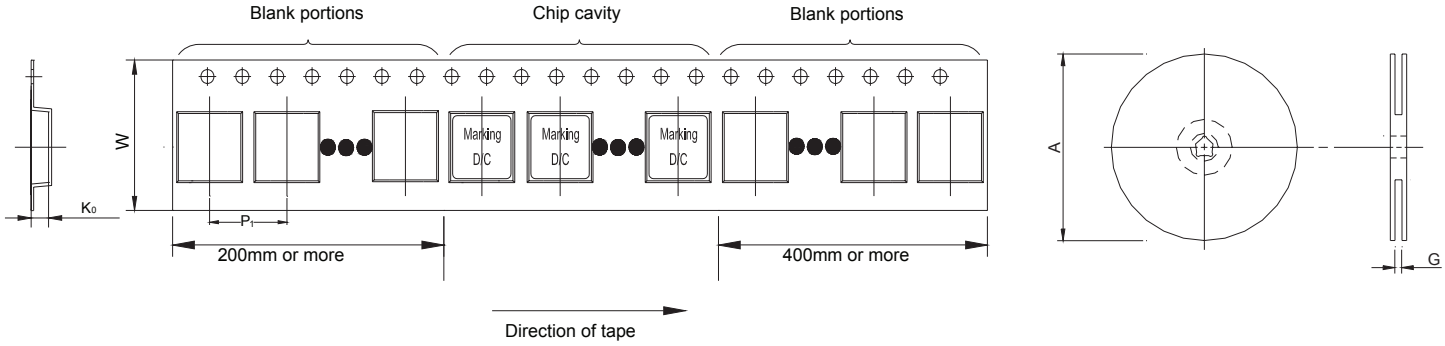


SUGGESTED PAD LAYOUT

Series	A	B	C	D	E	F	L	G	H
PA5005/PM2205	6.6±0.2	6.4±0.2	4.8±0.2	SEE SPEC TABLE	1.4±0.2	2.6±0.25	5.6 (REF)	2.5 (REF)	5.6 (REF)

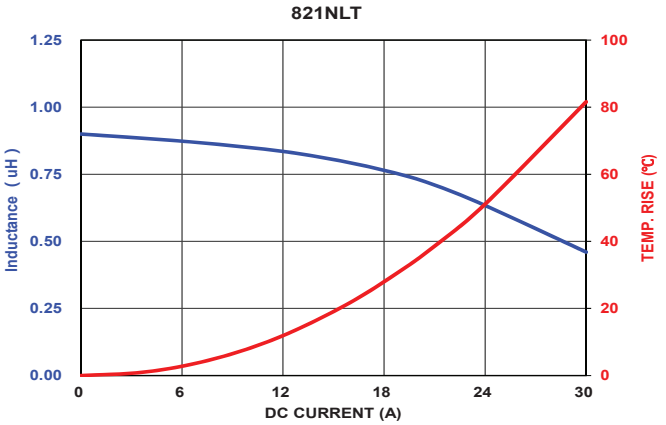
All Dimensions in mm.

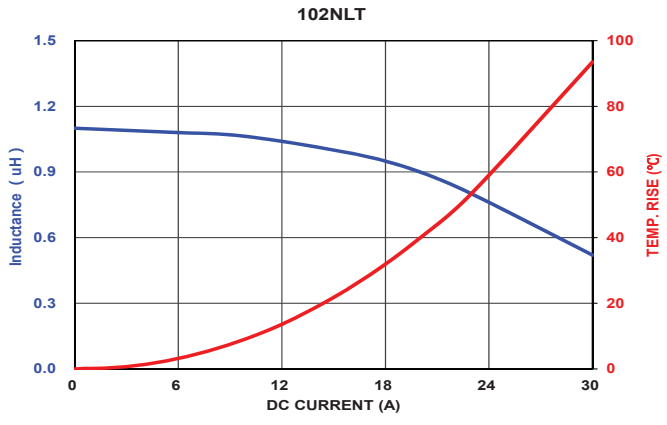
TAPE & REEL INFO

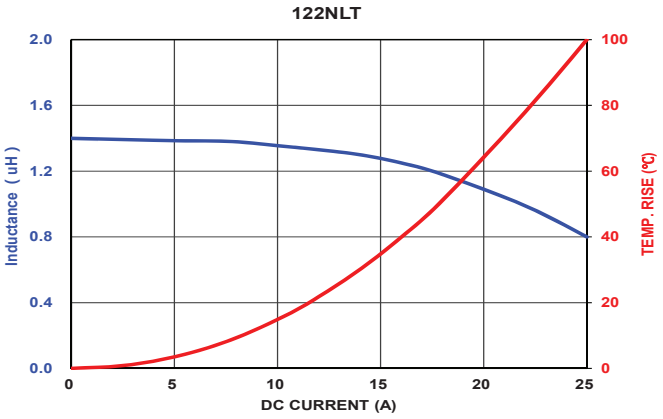


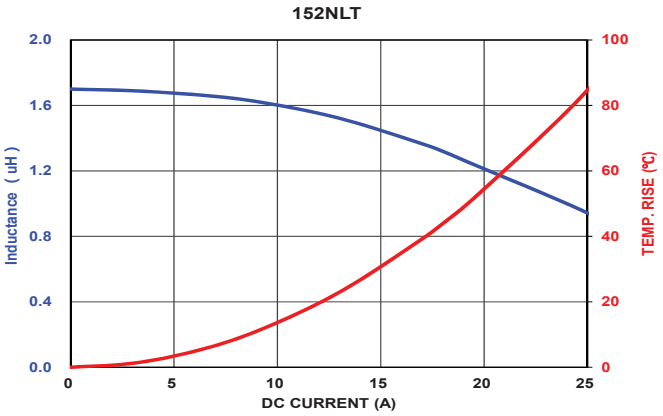
SURFACE MOUNTING TYPE, REEL/TAPE LIST						
	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA5005/PM2205	Ø330	16.4	12	16	5.3	800

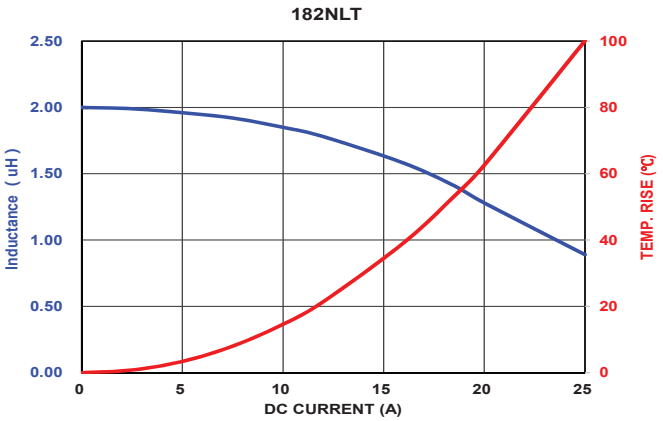
Typical Performance Curves

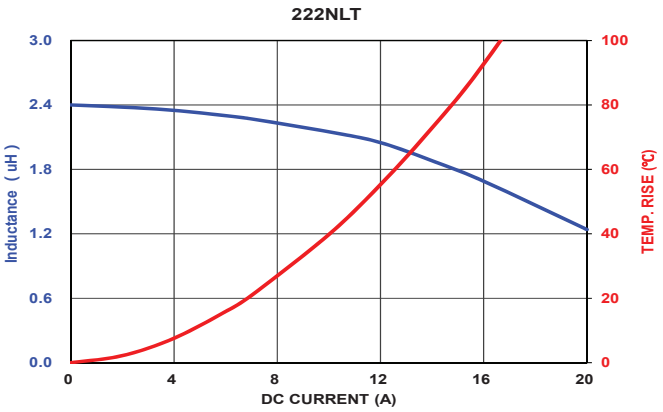


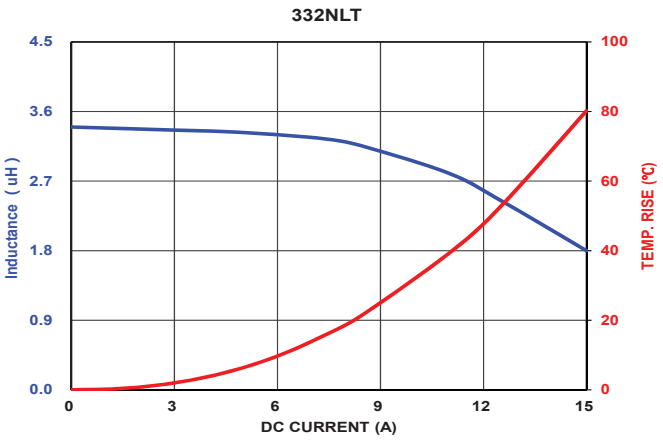


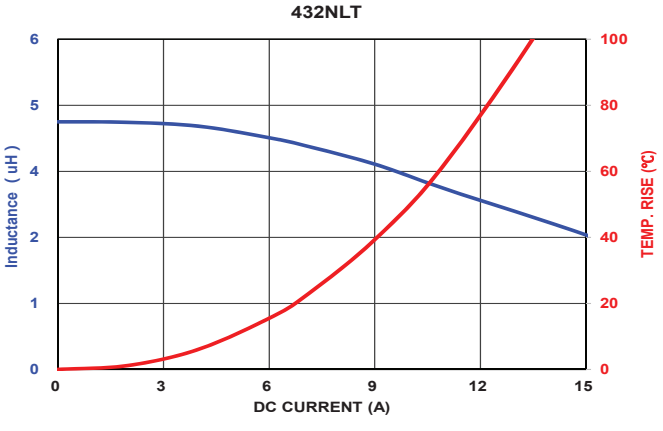

122NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
2.0
1.6
1.2
0.8
0.4
0.0
100
80
60
40
20
0
0
5
10
15
20
25

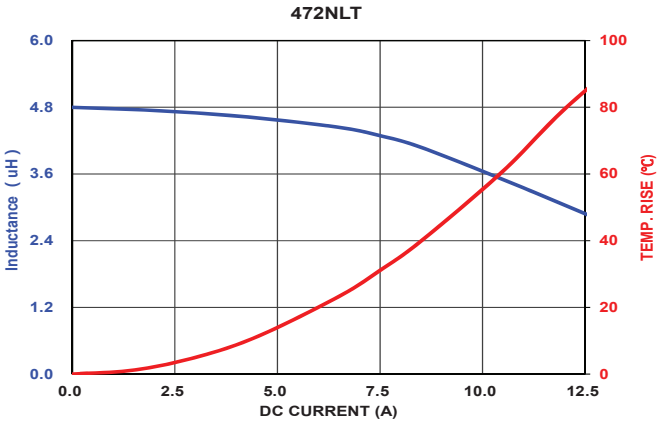

152NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
2.0
1.6
1.2
0.8
0.4
0.0
100
80
60
40
20
0
0
5
10
15
20
25


182NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
2.50
2.00
1.50
1.00
0.50
0.00
100
80
60
40
20
0
0
5
10
15
20
25

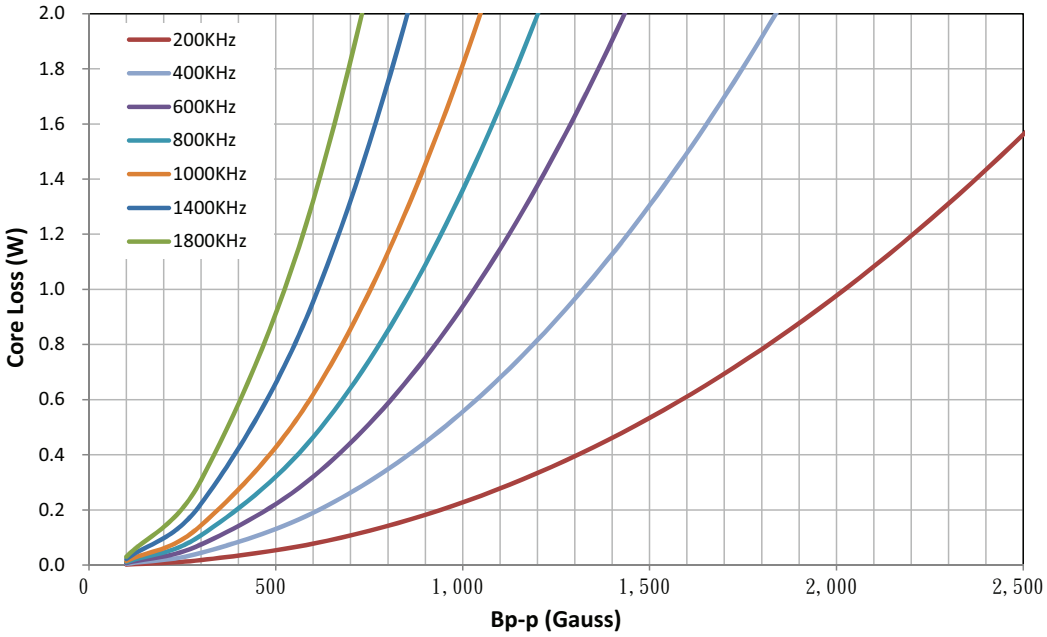

222NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
3.0
2.4
1.8
1.2
0.6
0.0
100
80
60
40
20
0
0
4
8
12
16
20


332NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
4.5
3.6
2.7
1.8
0.9
0.0
100
80
60
40
20
0
0
3
6
9
12
15


432NLT
Inductance (uH)
TEMP. RISE (°C)
DC CURRENT (A)
6
5
4
2
1
0
100
80
60
40
20
0
0
3
6
9
12
15



CORE LOSS vs FLUX DENSITY



Bp-p = K *L(uH) *delta I(A)

For More Information

Pulse Worldwide Headquarters
15255 Innovation Drive Ste 100
San Diego, CA 92128
U.S.A.

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe
Pulse Electronics GmbH
Am Rottland 12
58540 Meinerzhagen
Germany

Tel: 49 2354 777 100
Fax: 49 2354 777 168

Pulse China Headquarters
Pulse Electronics (ShenZhen) CO., LTD
D708, Shenzhen Academy of
Aerospace Technology,
The 10th Keji South Road,
Nanshan District, Shenzhen,
P.R. China 518057

Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China
Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Road West
Shanghai 200336
China

Tel: 86 21 62787060
Fax: 86 2162786973

Pulse South Asia
3 Fraser Street
0428 DUO Tower
Singapore 189352

Tel: 65 6287 8998
Fax: 65 6280 0080

Pulse North Asia
1F., No.111 Xiyuan Rd
Zhongli City
Taoyuan City 32057
Taiwan (R.O.C)

Tel: 886 3 4356768
Fax: 886 3 4356820

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