High Current Composite Inductor - PA5433.XXXNLT and PM5433.XXXNLT

















@ Height: 8.0mm Max

Footprint: 16.8mm x 15.8mm Max @ Current Rating: up to 40Arms

Inductance Range: 2.0uH to 22uH

Migh current, low DCR, and high efficiency Rated Voltage between Terminals: 100V

Minimized acoustic noise and minimized leakage flux noise

Available in Commercial (PA5433) and Automotive

(PM5433) grades

Electrical Specifications @ 25°C, Operating Temperature Range -55°C to +155°C							
Part Number		⊘Inductance	Rated <sup>3</sup>	DC Resistance		Saturation <sup>2</sup>	K Factor
Commerical	Automotive <sup>6</sup>	100KHz, 0.1V	Current	TYP.	MAX.	Current (25°C)	for Core Loss
		uH±20%	A	mΩ	mΩ	Α	
PA5433.202NLT	PM5433.202NLT	2.00	40.0	1.92	2.21	52.0	17.7
PA5433.222NLT	PM5433.222NLT	2.20	37.0	2.15	2.48	49.0	17.7
PA5433.302NLT	PM5433.302NLT	3.00	34.5	2.50	3.00	41.0	14.6
PA5433.422NLT	PM5433.422NLT	4.20	27.0	3.90	4.68	33.0	12.5
PA5433.532NLT	PM5433.532NLT	5.30	26.0	4.45	5.34	31.0	10.9
PA5433.622NLT	PM5433.622NLT	6.20	23.0	5.40	6.50	31.0	9.6
PA5433.722NLT	PM5433.722NLT	7.20	21.0	6.00	7.20	29.0	8.6
PA5433.822NLT	PM5433.822NLT	8.20	19.0	6.60	7.92	25.0	8.6
PA5433.103NLT	PM5433.103NLT	10.0	16.0	8.00	9.60	21.0	7.8
PA5433.153NLT	PM5433.153NLT	15.0	13.0	12.50	15.00	18.0	6.1
PA5433.223NLT	PM5433.223NLT	22.0	12.0	19.30	23.20	16.0	4.7

#### Notes:

- Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
- 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.
- 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.
- The part temperature (ambient+temp rise) should not exceed the upper operating temperature range 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.
- The PMxxxx.XXXNLT part numbers are AEC-Q200 and IATF16949 certified. The inductance and 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.

Special Characteristics . 6.

PulseElectronics.com P896. A. (04/21) 3. Very low acoustic noise and very low leakage flux noise

4. High reliability.

TMPE 1513A PA5433/PM5433

All Dimensions in mm.

5. 100% Lead(Pb)-Free and RoHS compliant.

### 6. Operating temperature -55~+125°C (Including self - temperature rise)

# **SMT Power Inductors** High Current Composite Inductor - PA5433.XXXNLT and PM5433.XXXNLT

Halogen-free

10.4±0.3 10.4±0.3 8.2 uH and belo 15.0 (REF)

Halogen



6.0(REF)

15.0(REF)

Note PC power system, incl. IMVP-6

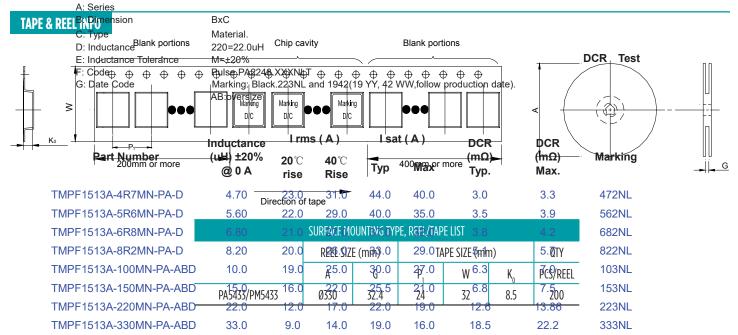
DC/DC converter . Mechanical Ш Ů PA5433.XXXNLT and PM5433.XXXNLT Ш  $\Box$ Η L(mm) G(mm) H(mm) XXXNL 6.0 ref 5.6 ref 15.0 ref В F D/C Note: 1. The above PCB layout reference only. 2. Recommend solder paste thickness at 0.15mm and above. FINAL LAYOUT SUGGESTED PAD I AYOUT (mm) **B** (mm) (mm) (mm) (mm) (mm) Series 16.5±0.3

3.2±0.5 13.2±0.5

3.2±0.2 3.2±0.2

**TMPF** 1513 220 **ABD** Α PA В С D Ε F G

12.7±0.3 7.7±0.3



Note:

2

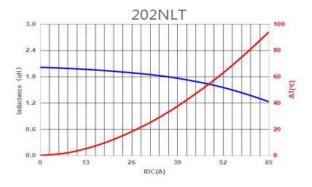
- 1. Test frequency: L: 100KHz /0.1V
- 2. All test data referenced to 25°C ambient.
- 3. Testing Instrument: L: HP4284A,HP4395A,CH11025,CH3302,CH1320, CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
- 4. Current that causes the specified temperature rise from 25°C ambient.
- 5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
- 6. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
- 7. Special inquiries besides the above common used types can be met on your requirement.
- 8. Rated operating voltage(across inductor) 40V ref.

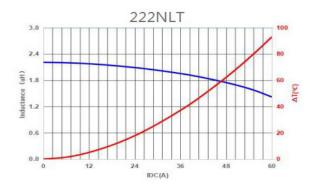
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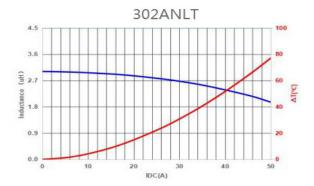
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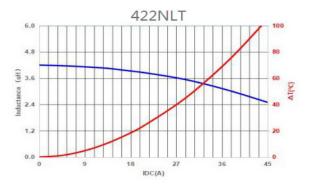


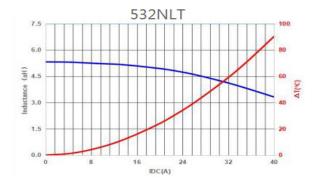
### **Typical Performance Curves**

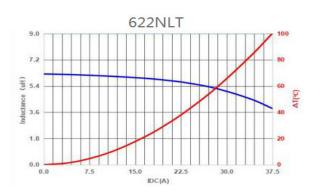








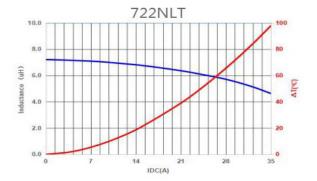


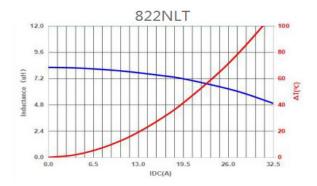


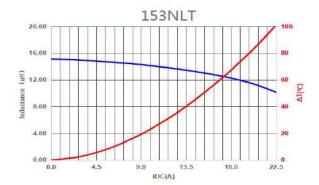
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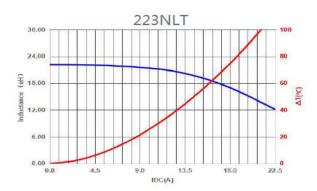
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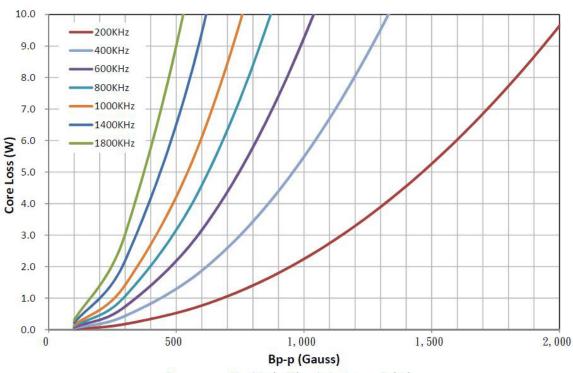




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## **CORE LOSS vs FLUX DENSITY**



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

#### For More Information:

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