SMT Power Inductors

High Current Composite Inductor - PA2248XXXNLT and PM2248.XXXNLT















Height: 13.0mm Max

Pootprint: 17.8mm x 16.8mm Max

Current Rating: up to 31Arms

Inductance Range: 4.7uH to 33uH

High current, low DCR, and high efficiency Pated Voltage between Terminals: 100V

Minimized acoustic noise and minimized leakage flux noise

Available in Commercial (PA2248) and Automotive

(PM2248) grades

Electrical Specifications @ 25°C, Operating Temperature Range per Below ^{4,5}												
Part N	umber	□Inductance	Rated³ Current	DC Resistance		Saturation ²	K Factor					
Commerical	Automotive ⁶	100KHz, 0.1V		TYP.	MAX.	Current (25°C)	for Core Loss					
(-40°C to 125°C)	(-55°C to 155°C)	uH±20%	A	mΩ	mΩ	Α	COLG FO22					
PA2248.472NLT	PM2248.472NLT	4.7	31.0	3.0	3.3	44.0	10.9					
PA2248.562NLT	PM2248.562NLT	5.6	29.0	3.5	3.9	40.0	9.6					
PA2248.682NLT	PM2248.682NLT	6.8	27.0	3.8	4.2	37.0	8.6					
PA2248.822NLT	PM2248.822NLT	8.2	26.0	5.1	5.7	33.0	7.8					
PA2248.103NLT	PM2248.103NLT	10.0	25.0	6.3	7.0	30.0	7.2					
PA2248.153NLT	PM2248.153NLT	15.0	22.0	6.8	7.5	25.5	5.7					
PA2248.223NLT	PM2248.223NLT	22.0	17.0	12.6	13.86	22.0	4.7					
PA2248.333NLT	PM2248.333NLT	33.0	14.0	18.5	22.2	19.0	3.7					

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 drops by approximately 30% at the stated ambient temperature. The maximum allowable drop at this stated current is 40% of the initial inductance. This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effect) to the component.
- 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.
- 5. 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 (

PulseElectronics.com P865. B (05/21) 3. Very low acoustic noise and very low leakage flux noise

4. High reliability.

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

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

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Recommend Politics C HYAGEO company

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Halogen

Halogen-free

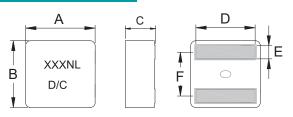
Note PC power system $\,^{,}$ incl. IMVP-6

DC/DC converter .

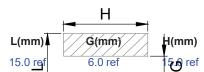
Mechanical $ext{ width}$

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PA2248.XXXNLT and PM2248.XXXNLT



FINAL LAYOUT



Note: 1. The above PCB layout reference only.

2. Recommend solder paste thickness at

0.15mm and above.
SUGGESTED PAD I AYOUT

· · · · · · · · · · · · · · · · · · ·					JOUGESTED THE ENTOUT				
Series Series	A (mr	n) B (mm)	(mm)	(mm)	(mm)	(mm) F	Inductance	G	Н
PA2248/PM2248 ^{13A**} .472/.56 2/\d8 27.8 2 2\N97 ^A **	-D 16.5± -AB <mark>1</mark> 6.5±0 ₁ 3 _{7.5±}		3 12.7±0.3	13.2±0.5 13.2±0.5		10.4±0.3 10	OuH and below		15 0/055
PA2248/PM2248 .103/.153/.223/.333NLT	17.5±0.3	16.5±0.3	12.7±0.3	13.2±0.5	3.2±0.2	10.4±0.3	15.0 (REF)	6.0(REF)	15.0(REF)
All Discouncions in seco									

All Dimensions in mm.

TMPF 1513 A - 220 MN - PA - ABD

A B C D E F G

nsion BxC TAPE & REEL BNPO Material. D: Inductance Blank portions Chip cavity Blank portions 220=22.0uH DCR_ Test E: Inductance Tolerance M=±20% Philse PA\$24\$ XXXNbT ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ Harking, Black.223NL and 1942(19 YY, 42 WW,follow production date). F: Code⊕ ⊕ \oplus G: Date Code Marking Marking > DC DIC Isat (A) DCR DCR Inductance (mΩ)**–** Part Number 200mm or more (uH) ±20% $(m\Omega)$ Marking 20℃ **40**℃ 400 maxor more Тур G G @ 0 A Max. Тур. rise Rise Direction of tape 31.0 TMPF1513A-4R7MN-PA-D 44.0 40.0 3.3 472NL 4.70 3.0 TMPF1513A-5R6MN-PA-D 5.60 40.0 35.0 3.9 22.0 29.0 3.5 562NL SURFACE MOUNTING TYPE, REEL/TAPE LIST TMPF1513A-6R8MN-PA-D 682NL TMPF1513A-8R2MN-PA-D 8.20 20.0 29.0 TAPE SIZE (m/m) 822NL R26.SIZE (mph)3.0 5. QTY **25.0** $W^{6.3}$ TMPF1513A-100MN-PA-ABD 10.0 19.0 30.0 103NL 27.0 PCS/REEL 32^{6.8} 21.0 7.500 $0330^{-22.0}$ TMPF1513A-150MN-PA-ABD 25.5 32.4 153NL PA2248/PM2248 13.6 TMPF1513A-220MN-PA-ABD 223NL 13.86 TMPF1513A-330MN-PA-ABD 33.0 9.0 14.0 19.0 16.0 18.5 22.2 333NL

Note:

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- 1. Test frequency: L: 100KHz /0.1V.
- 2. All test data referenced to 25 $^{\circ}\!\mathbb{C}$ $\,$ ambient.
- $3. \ \ \text{Testing Instrument}: L: HP4284A, HP4395A, CH11025, CH3302, CH1320S, LCR \ \text{METER} / \ Rdc: CH16502, Agilent 33420A \ \text{MICRO} \ OHMMETER, or EQU.$
- 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.

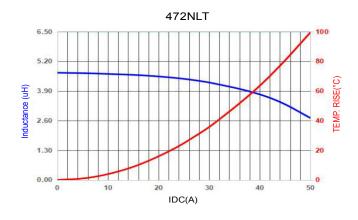
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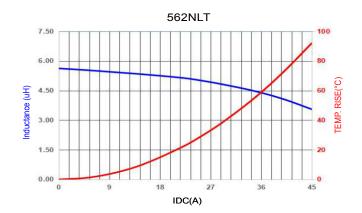
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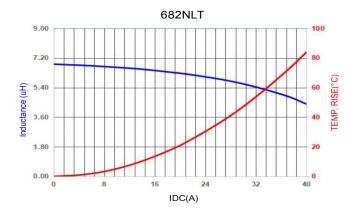
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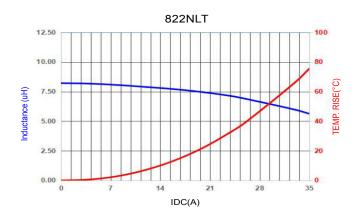


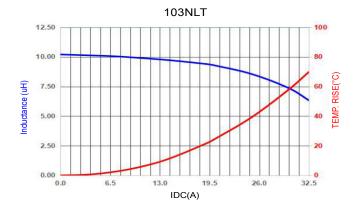
Typical Performance Curves

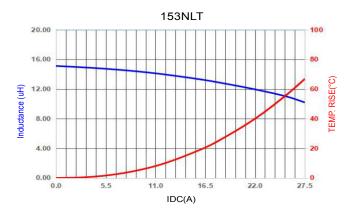




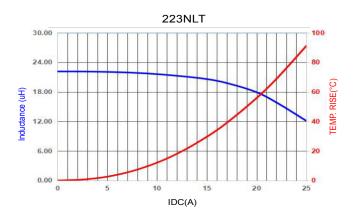


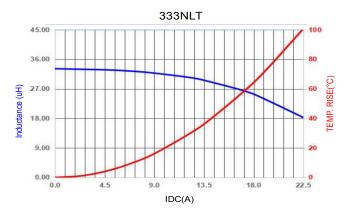




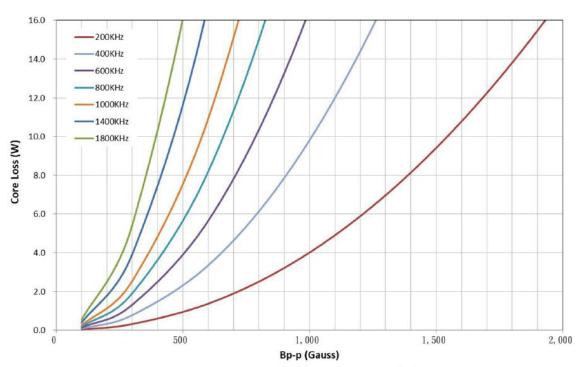


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CORE LOSS vs FLUX DENSITY



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

For More Information:

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