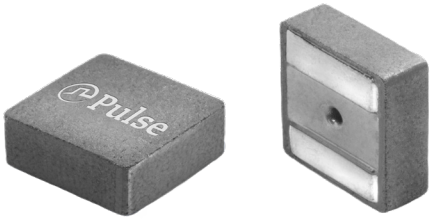
# SMT Power Inductors

*Molded powder - PA/PM2242-2243-2244.XXXNLT series*

Pulse a YAGEO company







- ***Height:*** *10.0mm Max*
- ***Footprint:*** *12.2mm x 11.3mm Max*
- ***Current Rating:*** *up to 40 Apk*
- ***Inductance Range****: 0.28 uH to 15 uH*
- ***Rated Voltage between Terminals:*** *50V*
- *High current, low DCR, and high efficiency*
- *Minimized acoustic noise and minimized leakage flux noise*
- *Available in Commercial (PA224X) and Automotive (PM224X) grades*

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

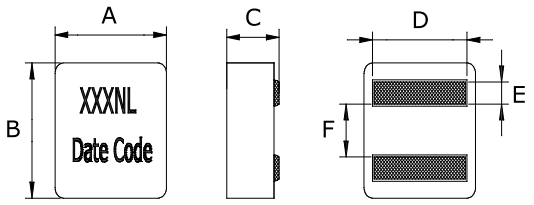
| Part Number | | Inductance[6] 100KHz, 0.1V | Rated[3] Current | DC Resistance MAX. | Saturation[2] Current | K Factor for Core Loss |
|---|---|---|---|---|---|---|
| Commerical (-55°C to 125°C) | Automotive[4,5] (-55°C to 155°C) | uH±20% | A | mΩ | A | |
| PA2242.281NLT | PM2242.281NLT | 0.28 | 35.0 | 1.60 | 58.0 | 114.6 |
| PA2242.561NLT | PM2242.561NLT | 0.56 | 32.0 | 2.75 | 39.0 | 72.9 |
| PA2242.821NLT | PM2242.821NLT | 0.82 | 25.0 | 4.10 | 32.0 | 53.5 |
| PA2242.901NLT | PM2242.901NLT | 0.90 | 24.0 | 4.20 | 31.0 | 53.5 |
| PA2242.102NLT | PM2242.102NLT | 1.00 | 23.0 | 4.95 | 30.0 | 52.2 |
| PA2242.152NLT | PM2242.152NLT | 1.50 | 18.0 | 6.60 | 25.0 | 42.2 |
| PA2243.681NLT | PM2243.681NLT | 0.68 | 34.0 | 1.50 | 50.0 | 53.5 |
| PA2243.102NLT | PM2243.102NLT | 1.00 | 28.5 | 2.32 | 44.0 | 52.3 |
| PA2243.122NLT | PM2243.122NLT | 1.20 | 26.5 | 2.64 | 40.0 | 42.2 |
| PA2243.152NLT | PM2243.152NLT | 1.50 | 24.5 | 3.30 | 36.0 | 42.2 |
| PA2243.222NLT | PM2243.222NLT | 2.20 | 20.0 | 4.84 | 30.0 | 34.9 |
| PA2243.332NLT | PM2243.332NLT | 3.30 | 16.8 | 7.70 | 25.0 | 29.7 |
| PA2243.472NLT | PM2243.472NLT | 4.70 | 14.0 | 10.72 | 22.0 | 22.9 |
| PA2244.102NLT | PM2244.102NLT | 1.00 | 40.0 | 1.20 | 42.0 | 53.5 |
| PA2244.152NLT | PM2244.152NLT | 1.50 | 35.5 | 1.76 | 31.0 | 42.3 |
| PA2244.222NLT | PM2244.222NLT | 2.20 | 32.0 | 2.80 | 29.0 | 34.9 |
| PA2244.332NLT | PM2244.332NLT | 3.30 | 25.0 | 4.10 | 23.4 | 27.9 |
| PA2244.472NLT | PM2244.472NLT | 4.70 | 24.0 | 5.70 | 21.4 | 23.6 |
| PA2244.562NLT | PM2244.562NLT | 5.60 | 21.2 | 7.20 | 19.6 | 21.2 |
| PA2244.682NLT | PM2244.682NLT | 6.80 | 18.5 | 8.90 | 18.5 | 19.1 |
| PA2244.822NLT | PM2244.822NLT | 8.20 | 17.1 | 12.40 | 16.3 | 16.0 |
| PA2244.103NLT | PM2244.103NLT | 10.0 | 15.5 | 13.75 | 14.6 | 13.6 |
| PA2244.153NLT | PM2244.153NLT | 15.0 | 13.8 | 19.30 | 12.5 | 11.9 |

**Notes:**

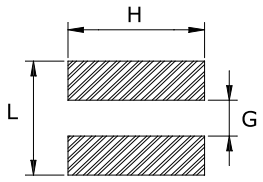
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. The saturation current is the current at which the initial inductance is guaranteed to drop by no more than 40%. The typical inductance at a specified current 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 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. PM224X.XXXNL series are AEC-Q200 certified and IATF 16949 compliance, but the resistance to solvents test is waived. The inductance and mechanical dimensions will do 100% test in mass production due to the Cpk <1.33.
6. Special Characteristics ▽ for PM224X.XXXNLT.

## Mechanical

### PA/PM224X.XXXNLT




FINAL LAYOUT

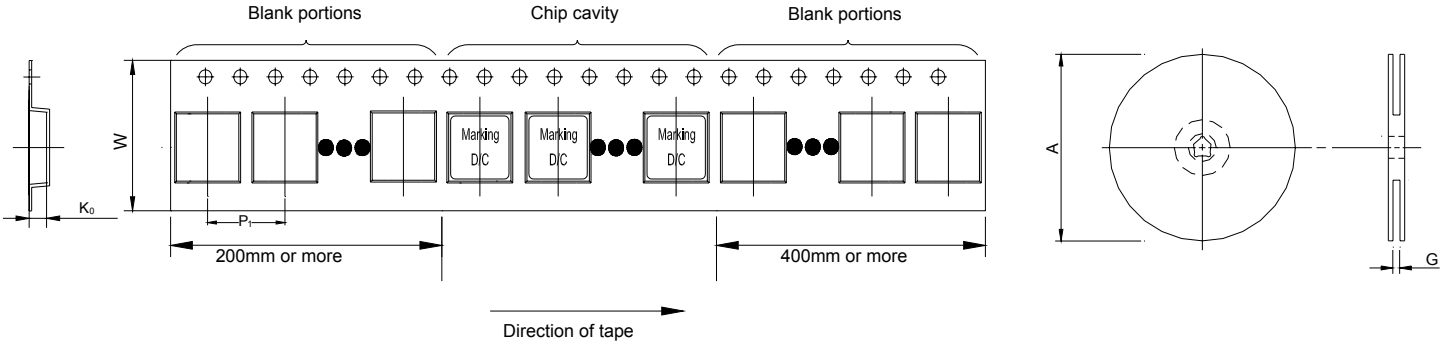



SUGGESTED PAD LAYOUT

| Series | A | B | C | D | E | F | L | G | H |
|---|---|---|---|---|---|---|---|---|---|
| PA/PM2242.XXXNLT | 11.9±0.3 | 11.0±0.3 | 2.9±0.2 | 9.0±0.5 | 2.4±0.2 | 4.4±0.3 | 10.5(REF) | 3.7(REF) | 11.0(REF) |
| PA/PM2243.XXXNLT | 11.9±0.3 | 11.0±0.3 | 5.7±0.3 | $9.0^{+1.0}_{-0.5}$ | 2.4±0.2 | 4.4±0.3 | 10.5(REF) | 3.7(REF) | 11.0(REF) |
| PA/PM2244.XXXNLT | 11.9±0.3 | 11.0±0.3 | 9.7±0.3 | 9.0(REF) | 2.4±0.2 | 4.4±0.3 | 10.5(REF) | 3.7 (REF) | 11.0(REF) |

All Dimensions in mm.

## TAPE & REEL INFO

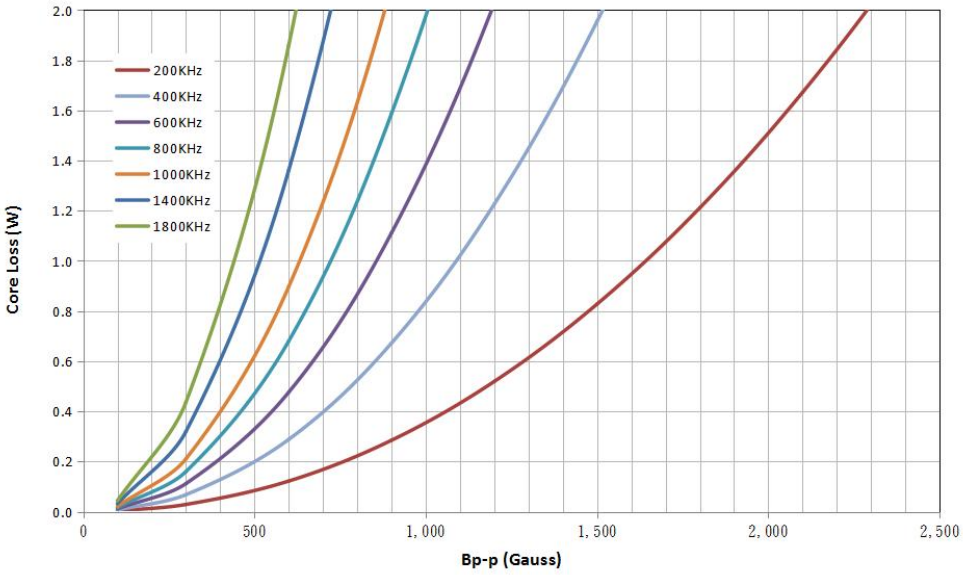



| SURFACE MOUNTING TYPE, REEL/TAPE LIST | | | | | | |
|---|---|---|---|---|---|---|
| PART NUMBER | REEL SIZE (mm) | | TAPE SIZE (mm) | | | QTY |
| | A | G | $P_1$ | W | $K_0$ | PCS/REEL |
| PA/PM2242.XXXNLT | Ø330 | 24.4 | 16 | 24 | 3.4 | 1000 |
| PA/PM2243.XXXNLT | Ø330 | 24.4 | 16 | 24 | 6.3 | 500 |
| PA/PM2244.XXXNLT | Ø330 | 24.4 | 16 | 24 | 10.3 | 300 |

## CORE LOSS vs FLUX DENSITY

# CORE LOSS vs FLUX DENSITY

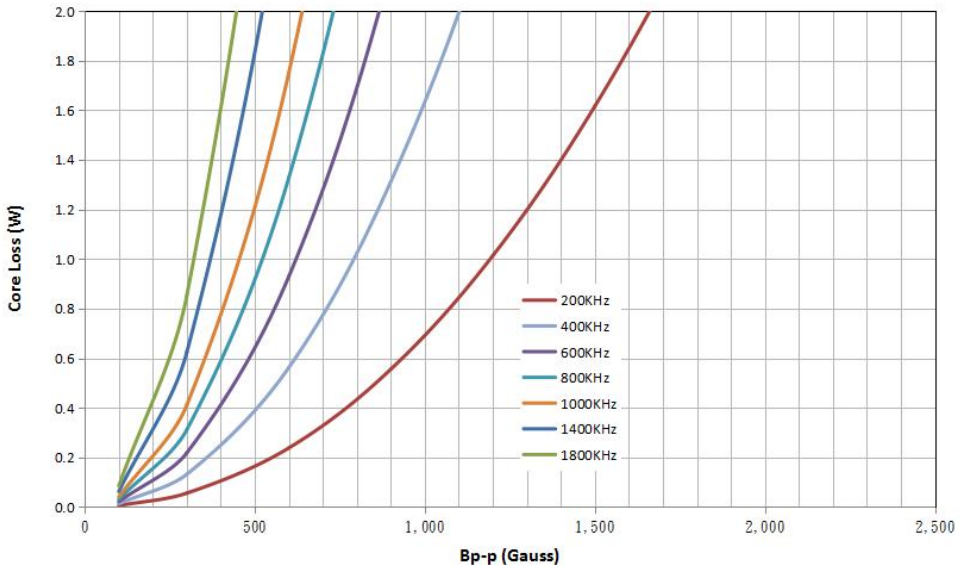
PA/PM2242.XXXNLT




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

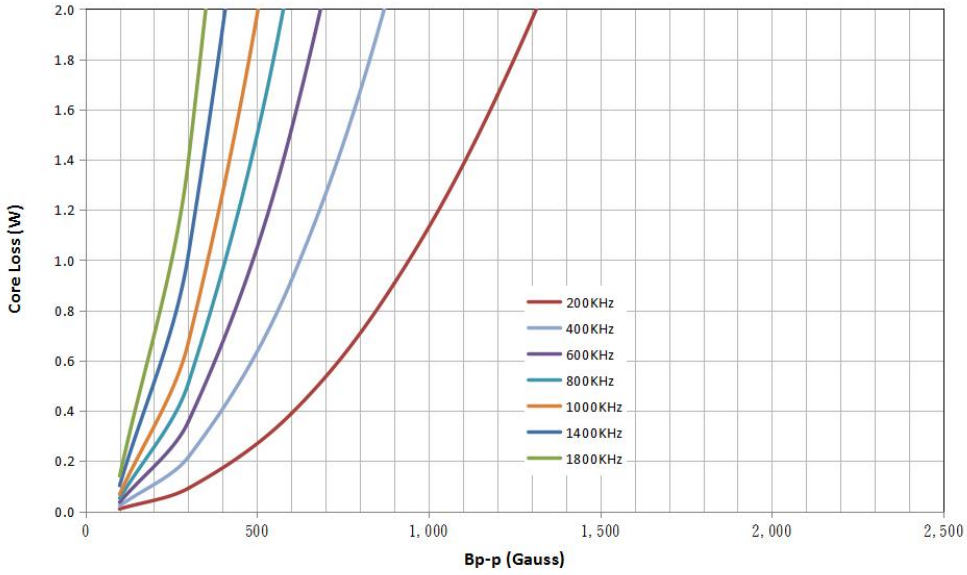
## CORE LOSS vs FLUX DENSITY

PA/PM2243.XXXNLT




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

PA/PM2244.XXXNLT




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

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Pulse:

PA2243.102NLT PA2243.152NLT PA2243.222NLT PA2243.681NLT PA2243.122NLT PA2243.472NLT PA2243.332NLT