PMT-NPV100X70 300 A DC-Bias Inductor Reference

Product Design Reference | PMT-PR-2026-1112-03 | Rev A/0 | 2026-11-12

This reference reproduces published product information and its stated evidence status. Final project specifications require an approved drawing and sample acceptance record.

Published Parameters and Conditions

Parameter	Published value / interpretation
15 A	180 µH | 100%
100 A	173 µH | 96.1%
200 A	163 µH | 90.6%
300 A	139 µH | 77.2%
320 A	107 µH | 59.4%
Zero-bias inductance, L0	Approximately 338 µH | Calculated; single-circuit DC-bias model
Inductance at +300 A, nominal	Approximately 158 µH | Calculated; not measured
Inductance at +300 A, worst case	At least 137 µH | Calculated with material tolerance and temperature derating
DCR at 100 °C	Approximately 4.4 mΩ | Calculated from MLT estimate; not measured
Copper loss	177 W at 200 Arms / 399 W at 300 A peak | Calculated; cooling and waveform dependent
Input confirmation	Confirm 300 A circuit current, 16 kHz carrier and acceptance of measured NPV-40-I material curve | Open
Calculation / FEA	Predict loaded inductance and center-leg flux density over temperature | Calculation included
A-sample at 25 °C	Measure L at +300 A and record temperature rise or abnormal noise | Not provided
Hot-condition DVP	Verify hot loaded inductance, hi-pot and temperature rise | Not provided
Production control	Approved control plan including L0, DCR, L at +300 A and hot-condition data | Not released
338 µH at zero bias	Calculated for the 28-turn V1.0 design
158 µH nominal / 137 µH minimum at 300 A	Calculated nominal and derated design results for the 28-turn drawing
180 µH at 15 A / 139 µH at 300 A	Single-sample DPG-10 pulse Linc test report; construction and drawing revision are not established in that report
Comparison boundary	The pulse test is a separate model-family record. It cannot validate or replace the 28-turn design calculation without sample-to-drawing traceability

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Application and Validation

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Measured with a DPG-10 pulse inductance (saturation) tester . The large-signal pulse method records incremental inductance Linc against instantaneous current: 100 V pulse, 320 A peak and 796 µs pulse width.

The 300 A test point is 139 µH, or 77.2% retention; the 320 A point is 107 µH. This single-sample report includes no DCR, temperature-rise or dielectric test. It does not establish a continuous 300 A rating. Pulse-method Linc is not directly equivalent to a small-signal LCR reading with DC bias.

Relationship to the design drawing: the report identifies PMT-NPV100X70-300 A but does not state a 28-turn construction or drawing revision. It is a separate model-family test record, not verification of the calculated PMT-NPV100X70-300 A–28T-IND V1.0 values. Sample-to-drawing traceability, hot-condition DVP and production release remain open.

The design drawing does not prove measured performance of the 28-turn construction, a 120 µH production rating, universal temperature rise, reliability lifetime, customer approval, delivery history or production release. Those conclusions require the named prototype, the approved test conditions and signed project records.

Four-page A4 landscape PDF translated and formatted for international engineering review. The calculation, measurement and release boundaries are repeated on the document.

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Project Review and Contact

Send voltage, topology, frequency, RMS and peak current, loaded inductance or turns ratio, thermal boundary, insulation and available mounting dimensions. Sample fees and delivery schedule are confirmed in the project quotation.

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Product page: https://www.promagtech.com/products/pmt-npv100x70-300a-design-review.html

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