PHD6581 — 120 µH / 300 A Flat Wire Inductor for Solar Energy Storage PCS

Product Design Reference | PMT-PR-2026-1112-04 | 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
Part Number	PHD6581
Inductance	120 µH
Rated Current	300 A
Winding Technology	Flat copper wire winding
Application	Solar energy storage PCS
Topology	Bidirectional DC-DC converter
DCR (measured)	6 mΩ
Copper loss calculation example	P = I² × DCR. Final loss depends on confirmed RMS current and measured DCR.
Copper loss at rated current	(300 A)² × 6 mΩ = 540 W

Application and Validation

The PHD6581 is a custom flat wire inductor designed and delivered for solar energy storage PCS applications. At 120 µH inductance and 300 A rated current, this product represents PROMAGTECH's high-current flat wire winding capability for bidirectional DC-DC converter stages in utility-scale and commercial energy storage systems.

For a 300 A RMS current and 6 mΩ measured DCR, the I²R copper-loss calculation is 540 W at that resistance. The operating winding resistance and total loss depend on temperature, current waveform and AC effects. A round-wire comparison requires matched core, winding window, turns and cooling, with measured sample results.

Solar energy storage PCS systems require inductors that maintain stable inductance under large DC bias, survive thermal cycling from charge and discharge cycles, and meet insulation requirements for high-voltage DC bus isolation.

To request a custom inductor design review based on PCS topology, operating voltage, switching frequency, inductance target and current waveform, use the contact form below. PROMAGTECH provides initial engineering proposals after parameter review.

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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/phd6581-120uh-300a-flat-wire-inductor.html