



Trans-Inductor Voltage Regulator (TLVR) Inductors

Power & Magnetics

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Power delivery for next-generation CPU/GPU/SoC/ASIC/FPGA/Memory rails witnesses a significant leap with the introduction of the Trans-Inductor Voltage Regulator (TLVR) topology. As the demands for higher data rates and smaller form factors continue to push boundaries, power supplies are being pushed to meet higher current requirements in a more efficient and more reliable manner. For the last decade, traditional topologies have struggled with transient load responses however the TLVR topology provides a novel solution.

Abracon ATL TLVR inductors, designed with a specialized high-frequency magnetic composition, are crafted to support TLVR multistage power supply designs. Specifically, they enable multiphase Voltage Regulator Modules (VRM) to achieve faster transient load responses with near negligible voltage droop, increasing control bandwidth and reducing costs by minimizing output capacitors, surpassing conventional designs.

FEATURES

- Ferrite based TLVR inductor
- Low DCR
- Inductance Range: 70 - 220 nH
- Saturation Currents: Up to 160 A
- Operating Frequency: Up to 5.0 MHz
- Operating Temperature Range: -40°C to +125°C
- Low inter-winding capacitance

APPLICATIONS

- Data Centers
- Electric Vehicles (EVs)
- Cloud Computing
- Crypto Mining
- Artificial Intelligence (AI) Servers
- Cloud Storage
- Industrial Control



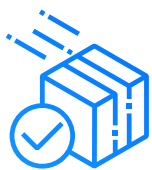
Key advantages of switching to a TLVR architecture and utilizing Abracon's ATL family of inductors are:

- Rapid response to transient loads ensures high bandwidth, minimal latency, and high throughput.
- Reduce system impedance, simplifying power system design and cutting costs.
- Increases energy efficiency, as less power is dissipated as heat.

PRODUCTS

Series	Inductance	DCR	Saturation Current	Temperature Rise Current	Operating Temperature	Length (mm)	Width (mm)	Height (mm)
ATL-1Z090610S	100 - 220 nh	0.125 mΩ	50 - 98 A	75 A	-40°C ~ +125°C	9.3	6.1	10.2
ATL-1Z100512S	70 - 170 nh	0.125 mΩ	52 - 127 A	75 A	-40°C ~ +125°C	10.0	5.0	12.0
ATL-1Z110611S	70 - 200 nh	0.125 mΩ	58 - 160 A	77 A	-40°C ~ +125°C	11.7	5.7	11.0
ATL-1Z120612S	100 - 170 nh	0.125 mΩ	70 - 125 A	70 A	-40°C ~ +125°C	12.0	6.2	12.0

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