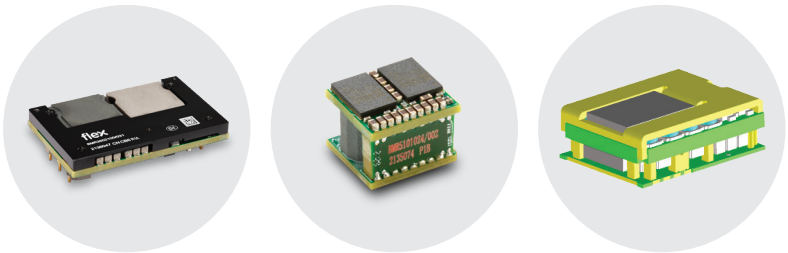
flex

Power Modules

DC/DC Converters for AI Applications



POWERING ARTIFICIAL INTELLIGENCE INNOVATION

Artificial Intelligence (AI) is evolving rapidly and has surpassed human decision-making capabilities in several instances. It is already producing some of the most effective and impactful results seen in today's businesses.

Many new AI-based products and services rely heavily on the cloud. AI can be extremely compute-intensive where local or edge devices struggle to manage everything independently. As such, power delivery and power efficiency have become key concerns in large scale computing systems. The industry is experiencing a dramatic increase in power consumption through processors with ASICs and GPUs that process complex AI functions.

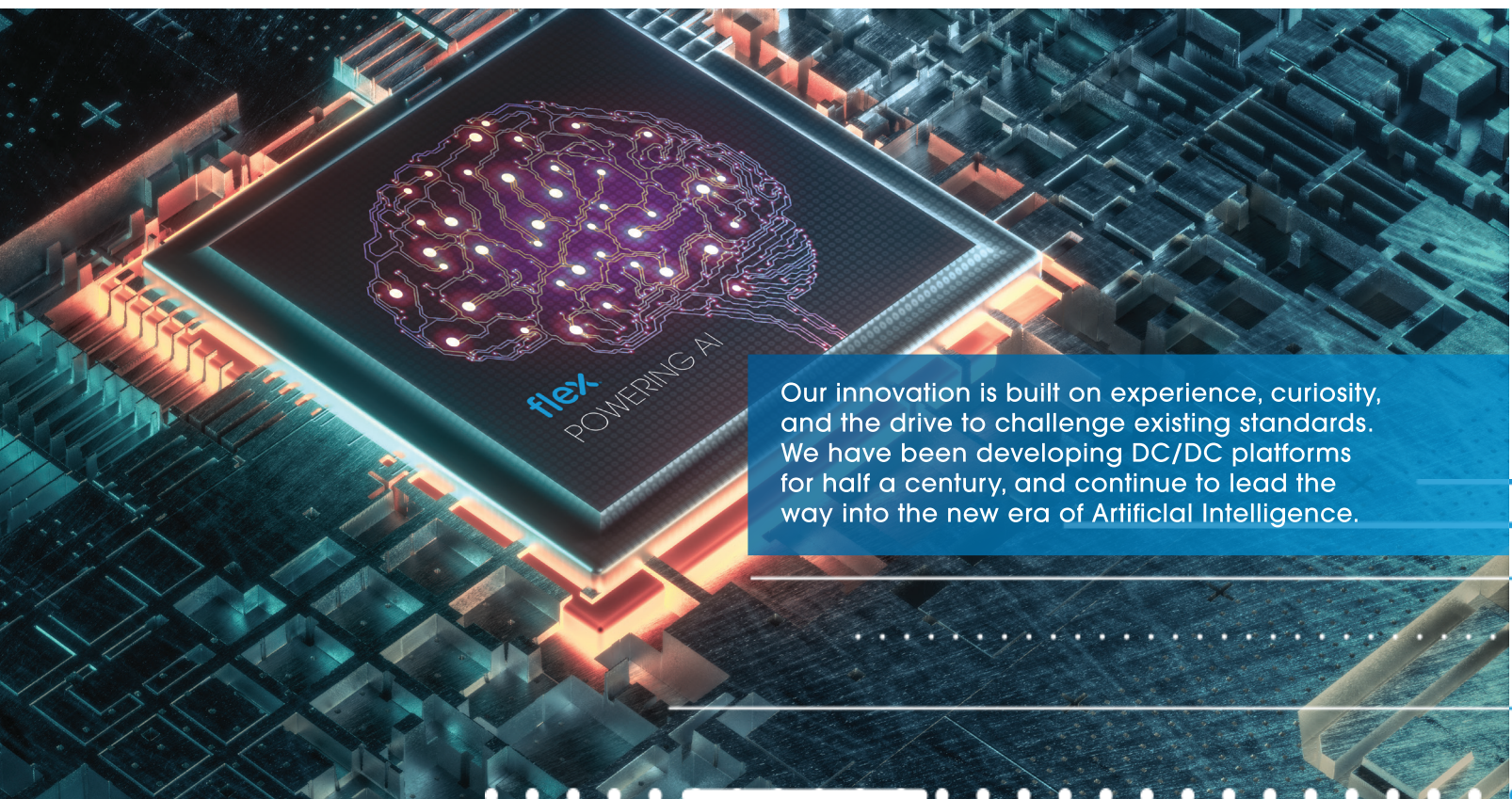
Rack power is also increasing with the deployment of AI applications. In most cases, power delivery is now a limiting factor in computing performance with new CPUs consuming ever increasing currents. Power delivery impacts not only the distribution of power but also the efficiency, size, cost and thermal performance.

SPECIFIC APPLICATIONS

There is an increasing demand for power density – rack power levels previously needing less than 10 kW now require more than 30 kW to power intensive AI applications. There is also an increase in preferred rack voltage from 12 V to 48 V for improved DC distribution.

Additionally, an emerging trend is to reduce power system loss through eliminating isolation at the board level, which opens the market for non-isolated topologies.

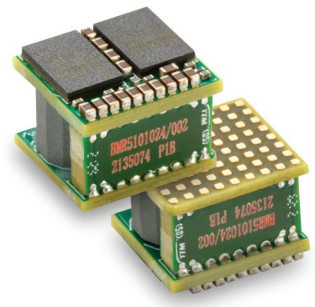
Our innovative products are designed to match all these criteria.



LATEST POWER MODULES FOR AI APPLICATIONS

BMR510 – 2 phase Voltage Regulator Module (VRM)

- Optimized for top-side cooling
- Current and temperature sense
- Accepts tri-state PWM signals
- Over-temperature and current limit protection
- LGA mount version
- Halogen-free



Dimensions: 10.1 x 9.1 x 7.6 mm / 0.39 x 0.35 x 0.29 in

PRODUCT NUMBER	V_{in}	V_{out}	I_{out}	I_{out_peak}	P_{out}	η
BMR5101024/002	4.5-16 V	0.5-1.3 V	40 A (TDC)* per phase 80 A (TDC)* total	70 A per phase 140 A total	64 W at V_{in} 13.5 V and V_{out} 0.8 V	88% at V_{in} 13.5 V and V_{out} 0.8 V

* Thermal Design Current

BMR350 – Digital Quarter Brick Intermediate Bus Converter

- Fully regulated output
- Digital interface compatible with 7-pin industry standard
- Non-isolated
- Black box function (event data recorder)
- Parallelable

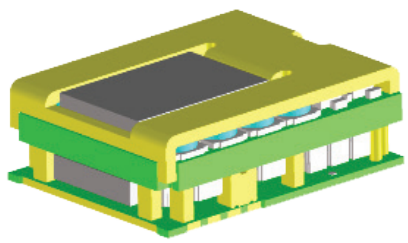
Dimensions: 58.4 x 36.8 x 12.5 mm / 2.3 x 1.45 x 0.54 in

PRODUCT NUMBER	V_{in}	V_{out}	I_{out}	P_{out}	P_{out_peak}	η
BMR3502100/031	40-60 V	12 V	100 A	860 W	1200 W	97.7%

BMR313 – Ultra-small Intermediate Bus Converter

(under development, planned release in Q2, 2022)

- Compact non-isolated DC/DC converter
- High density IBC up to 14.875 W/in^3 (908 W/cm^3)
- Digital PMBus interface
- LGA industry standard footprint and pinout
- Halogen-free
- Optimized thermal design for cold wall mounting



Dimensions: 23.4 x 17.8 x 7.6 mm / 0.92 x 0.7 x 0.29 in

PRODUCT NUMBER	V_{in}	V_{out}	P_{out}	P_{out_peak}	η
BMR3131011/001C	40-60 V	10-15 V	1000 W	3000 W	>98%

FLEX POWER MODULES

EMEA (Headquarters)
Torshamnsgatan 28 A
16440 Kista, Sweden

APAC
33 Fuhua Road, Jiading District
Shanghai, China 201818

Americas
6201 America Center Drive
San Jose, CA 95002, USA

pm.info@flex.com

flexpowermodules.com

flexpowerdesigner.com

linkedin.com/showcase/flex-power-modules/