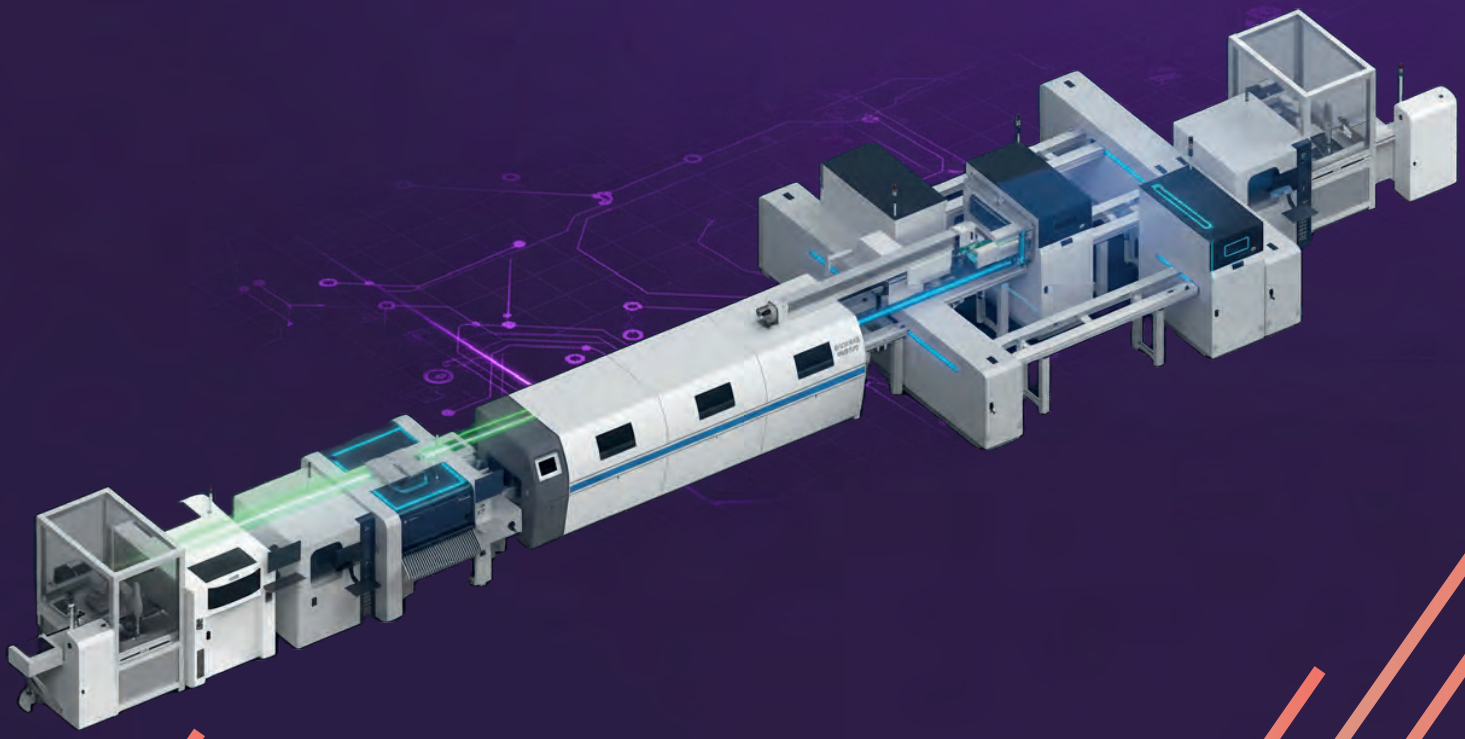
Integrated power electronics solutions

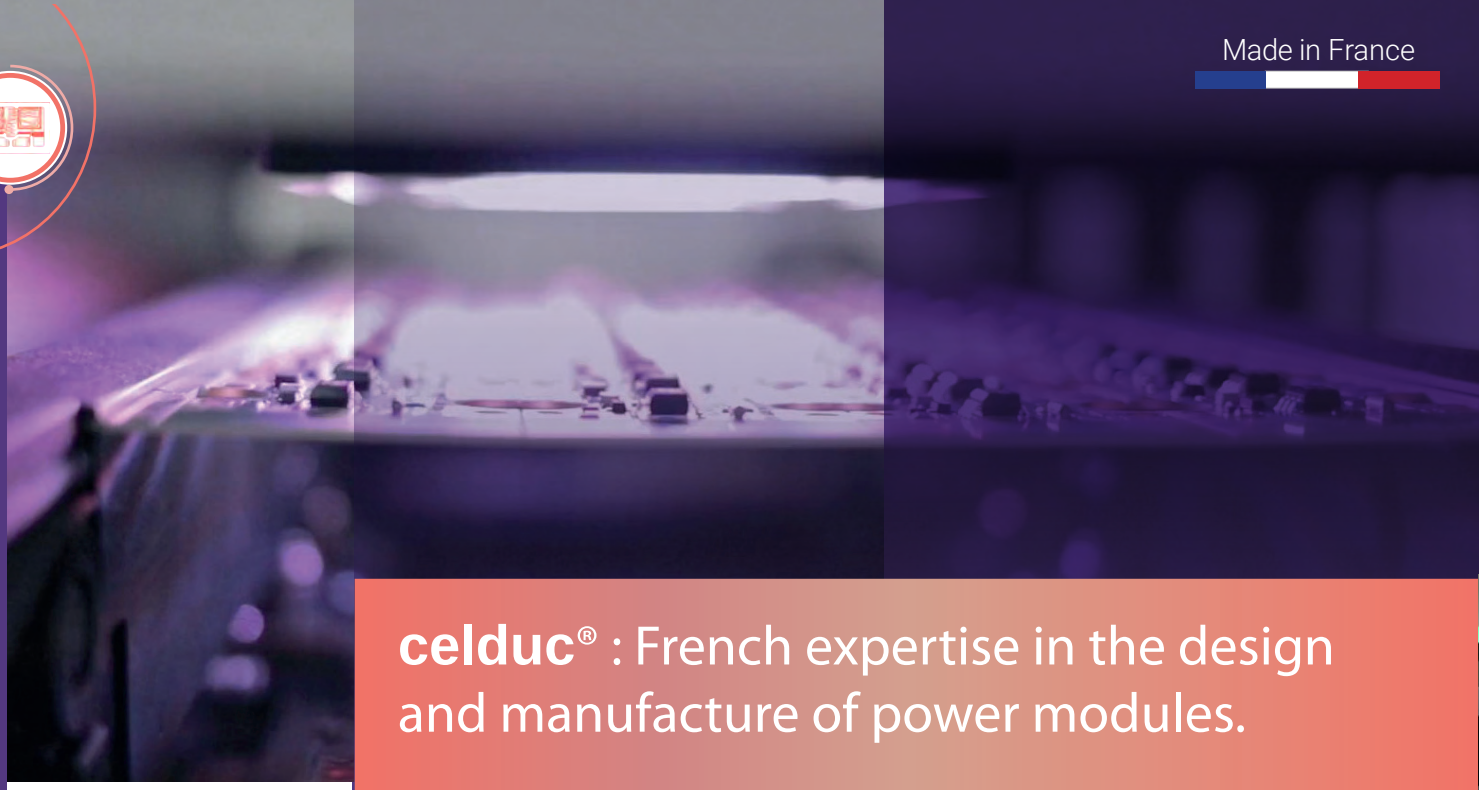
We can transform your industrial constraints into fully integrated power electronics solutions.

- 100% automated production with state-of-the-art equipment,
- Over 30 years of expertise in power electronics integration, semiconductor assembly, and surface-mount devices (SMDs),
- Integrated testing, prototyping, and qualification to secure your developments,
- Recognized expertise in the most demanding industries,
- Compliance with international standards: UL, CE, VDE.



celduc® relais

Made in France



celduc® : French expertise in the design and manufacture of power modules.

With over 30 years of experience in power electronics integration, **celduc®** is now expanding its expertise by offering customized design and manufacturing services (ODM – Original Design Manufacturer) for power modules. With state-of-the-art industrial facilities, 100% French production, and comprehensive prototyping, industrialization, and qualification capabilities, celduc® is positioned as a leading technology partner in the field of power semiconductors.

Advanced integration technologies

celduc® has mastered the integration of the main semiconductor technologies currently used in the power industry:

- **SiC (Silicon Carbide):** for higher efficiency, reduced losses, and better temperature resistance, ideal for demanding applications (energy conversion, electric mobility, etc.).
- **GaN (Gallium Nitride):** for very high switching frequency and compact modules, suitable for switching power supplies or fast chargers.
- **IGBT (Insulated Gate Bipolar Transistor):** proven technology for high-power industrial and energy applications.
- **MOSFET:** key component for modules requiring speed and energy efficiency.

These different technologies enable **celduc®** to address a wide range of applications—from electromobility to renewable energies and industrial automation.

celduc® relais

A fully automated and modernized production line

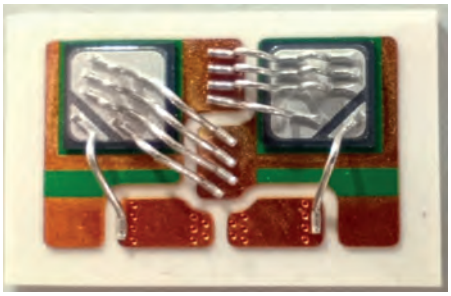
celduc® has a fully automated production line equipped with state-of-the-art machinery. This automation ensures perfect reproducibility of assemblies, consistent quality across volumes, and flexibility for both prototype and industrial series manufacturing.
All of the equipment, installed in France, reflects **celduc**®'s commitment to maintaining local, efficient, and sustainable production.

Four-phase vapor reflow oven with vacuum and cooling

Advanced manufacturing processes

The performance of a power module depends not only on the choice of semiconductors, but also on the quality of the substrate and the assembly process. **celduc**® uses several integration processes recognized for their reliability:
• **IMS (Insulated Metal Substrate):** technology promoting excellent heat dissipation and high mechanical robustness, ideal for applications requiring high power density.
• **COB (Chips On Board):** direct integration of chips onto the board to minimize parasitic inductance and improve electrical performance.
• **DCB (Direct Copper Bonded):** copper-bonded ceramic substrate ensuring excellent electrical insulation and optimal thermal conduction for high-power modules.

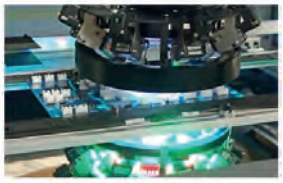
These processes are carried out in a highly controlled environment, with complete traceability of production batches and components.



Our production line features the latest wirebonding technology.

AOI - Automated Optical Inspection

Using automated optical inspection (AOI), we guarantee high-precision control of the positioning and bonding wire integrity, while automatically detecting contamination, component defects, and critical anomalies.
Our advanced failure analysis capabilities enable us to identify unknown particles and study material-substrate interactions, ensuring quality, traceability, and reliability in line with Industry 4.0 standards.



A comprehensive partner for your power module projects

Thanks to this unique combination of integration technologies, advanced processes, and recognized industrial expertise, **celduc®** supports its customers throughout the entire product life cycle—from initial design to mass production.
Whether for specific development or co-design based on specifications, **celduc®** positions itself as a strategic partner in the field of next-generation power modules.

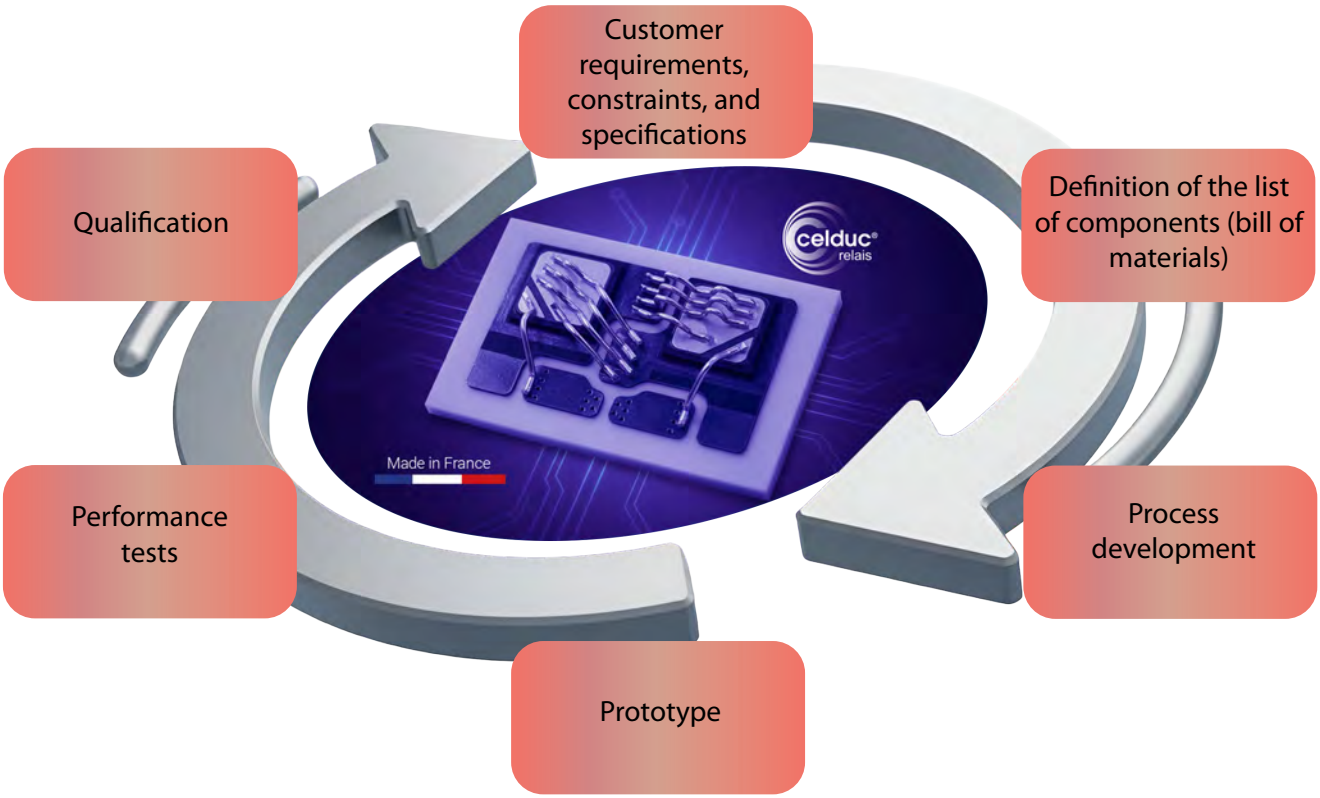
Testing, qualification, and validation

We don't just design and manufacture your innovative solutions: we support your projects with high-performance testing and validation services:

- Electrical and thermal testing for guaranteed performance,
- Advanced characterization to control every parameter,
- Aging and reliability testing for maximum durability,
- Prototype validation according to your standards and international norms.

Your designs are validated under real-world conditions, ready to be integrated into your systems with optimal reliability, performance, and quality.

Development cycle for our customized solutions



About celduc®

Based in France, **celduc®** is a major player in power electronics and industrial control. Our mission: to offer innovative, reliable, and high-performance solutions that support the transition to new energy and the industry of the future.

celduc® relais

Made in France

Our markets

celduc®'s custom-made power electronics solutions are designed for a wide range of applications, from electromobility and renewable energy to industrial automation.

With our worldwide corporate locations and
a well-established distribution network
you can count on a reliable and expert service
to support your global operations.

www.celduc-relais.com

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