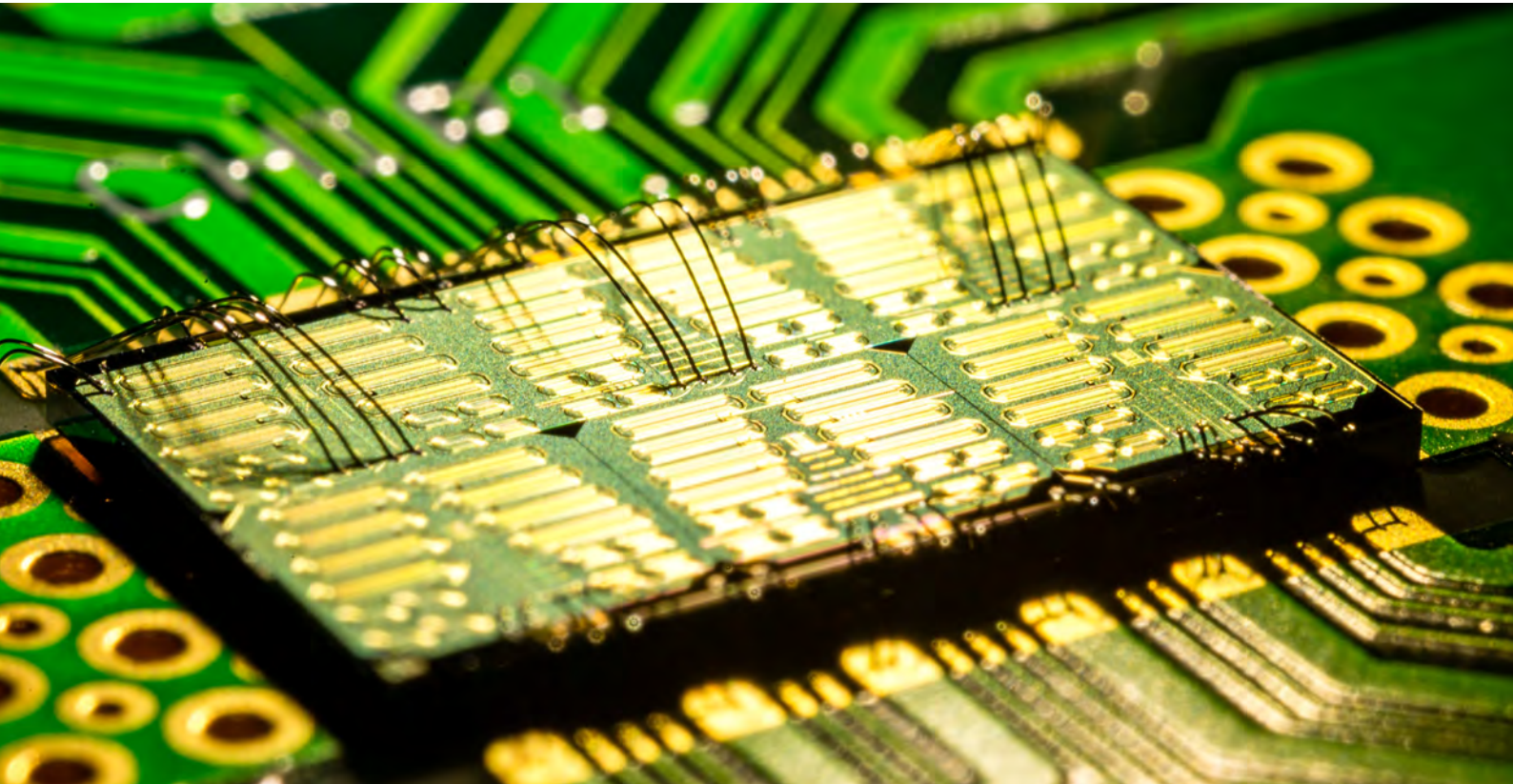


Power Conversion IC Design



MINDCET.
Custom
Integrated Power
Management
Solutions

IC & IP DEVELOPMENT

MinDCet provides custom IC design services and IP development with a strong focus on Power Conversion and Management. This includes various niche applications and specialist markets:

- **High Voltage:** linear regulators, fly-back converters, brush-less DC motor drivers
- **High Power:** brush-less DC motor drivers, fly-back converters, integrated IGBT drivers
- **High Temperature:** brush-less DC motor drivers, valve/actuator drivers, DC-DC converters
- **RadHard:** GaN gate drivers, DC-DC controllers, intelligent power switches
- **High Frequency:** DC-DC converters, laser drivers, GaN/SiC gate drivers, optical communication LED drivers

Differentiation by Technology Know-How

As a fab-less design company, MinDCet differentiates their offering by using selected leading foundry IC technologies. These include the use of SOI, BCD, integrated IGBT and High-Voltage technologies, selected to fit the customer's requirements at the best cost trade-off.

Licensing

MinDCet offers flexible possibilities for licensing their IP in the customer application, including one-off fees or volume licensing. Application exclusivity can be discussed in case of shared IP development.

TURNKEY IC

MinDCet supports full turnkey IC production of custom developed power ASICs, managing the full supply chain from qualification, wafer probing, packaging and production testing. Volumes may range from 1k to 1000k parts / year.

The trusted network from MinDCet ensures stable partners for packaging, qualification and test. Ease-of-mind turnkey volume production is guaranteed.

Technology to Customer Match

Being an IC foundry independent design company, MinDCet selects the optimal technology for our customer requirements. The best performance-cost-area trade-off is ensured and follows from our extensive experience on SOI, BCD and specialized High-Voltage technologies.

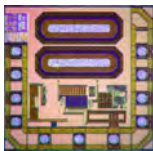
Long-Term Customer Support

ASIC production requires a long-term partnership. MinDCet offers long-term support engagement, which can even be strengthened by customer mask-set ownership or IP escrow agreements.

IP PORTFOLIO

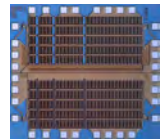
MDCL072: 700V to 5V Linear Regulator

- On-Chip pass device
- High power-system boot-up or IOT regulator
- Optional 8-bit calibration
- Smallest solution and highest input voltage regulator on the market



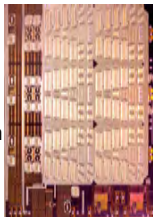
MDCD072: High Speed Laser Driver

- Nanosecond rise- and fall-times
- Optimized for low voltage applications
- Lowest gate-capacitance vs $R_{ds(on)}$ on the market



MDCI071: 650V / 3A IGBT Motor Driver

- On-Chip 3-phase power stage
- Integrated level-shifter, pre-drivers, current sensing and temperature sensing
- Highest degree of integration and highest on-chip voltage input capability on the market



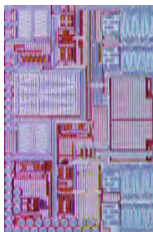
MDCD073: High Speed Gate Driver

- Sub-nanosecond rise- and fall-times
- Integrated pre-driver, auto-compensating level-shifter
- High-temperature operation
- Fastest GaN pre-driver on the market



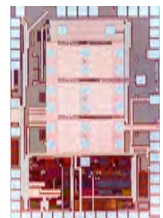
200V GaN HS & LS Gate Driver

- Nanosecond rise- and fall-times
- 100V/ns resistant floating high-side
- Integrated level-shifters
- On-chip charge-pump and bootstrap diodes



40V / 600mA BLDC Driver

- On-Chip 3-Phase power stage
- Integrated level-shifter, pre-drivers, current sensing, charge-pump and control
- High-temperature operation
- Highest degree of integration on the market



High Temperature Actuator Driver

- 225°C Capable
- H-bridge power stage
- Integrated Current Sensing
- Integrated Short Protection





MARKETS

Aerospace

- High temperature jet engine fuel valve driver
- High temperature DC-DC converters
- Fly-by-wire optical communication LED driver
- High speed, rad-hard GaN pre-drivers

Industrial

- Fly-back driver & controller
- High speed GaN pre-drivers
- Brush-less DC motor drivers

Automotive

- Fully-integrated brush-less DC motor drivers
- Stepper motor drivers
- Fan drivers

Biomedical

- Implant wireless powering and data transfer
- Ultra-efficient piezo drivers

CHARACTERIZATION

Characterization: a Must

MinDCet always performs in-house characterization to prove the IC functionality, proof the specifications and test it to the design limits and beyond. Our characterization engineers are trained to cope with high Power, Voltage and Speed.

Assembly

Prior to characterization, the IC is either packaged or mounted on a custom designed PCB substrate. This proprietary proven approach allows for maximum flexibility and has a fast turn-around time.



Main Test Board

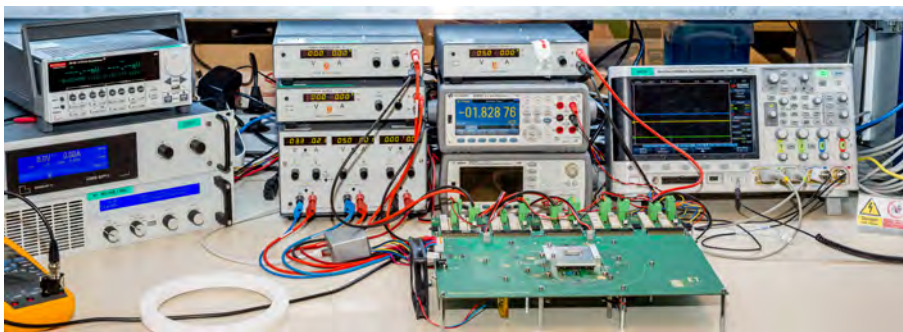
The packaged or CoB mounted IC is fitted onto a custom main test board. This board is the main interface to the bench-top measurement equipment or a production tester. It also allows fitting a thermo-stream to test the IC under different temperature conditions.

Automated Measurements

All measurements are fully-automated by our proprietary LABcommander software or can be programmed on a production tester. Full flexibility towards production testing guaranteed.

Measurement Capabilities

- DC voltage sources up to 1200V
- Signal generators up to 100MHz
- Digital Oscilloscopes up to 4GHz and 10bit
- Electronic loads up to 240A
- Digital interfaces SPI, IC², CAN...
- Thermo-streamers from -80 to +225°C
- Accurate sourcemeters
- Accurate bench-to multimeters



CUSTOMERS





MindCet is an ISO9001 certified IC design company, with a strong focus on Power Conversion. We have a proven track record in the development of gate drivers, BLDC drivers, highly integrated DC-DC converters..., for High Speed, High Voltage, High Temperature and RadHard applications. Our Power Conversion expertise and unique approach to inductor and capacitor measurements enable your products to be the finest on the market.



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