APPLICATION BRIEF

Smart Induction Cooktops

Create a safe, connected, and modern design with the highest energy efficiency

Induction cooking is one of the most modern and energy-efficient ways to cook food. With the increasing consumer and market demands, induction cooktop designers face multiple challenges when designing modern-looking equipment with wipe-clean hermetically sealed surfaces. The devices not only must be intelligent and connected, supporting the smart home eco-system offering novel features. They must also be highly energy efficient and safe while remaining a competitive price.

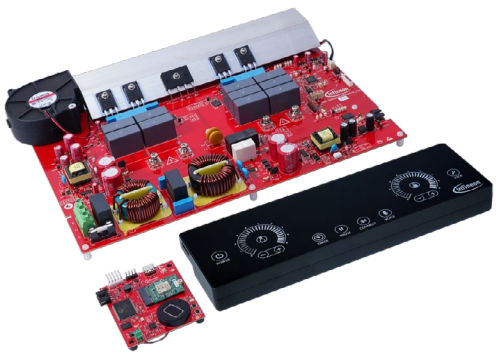
Our product portfolio covers all major functional blocks you need to address these challenges. Infineon offers you a wide range fulfilling the need for:
- power-efficient inverter stages
- a sensitive and intuitive modern touch user interface
- Matter and other connectivity standards for smarter devices
- components tuned for low standby power

Design recommendations
Infineon's PSOC™ 32-bit Arm® Cortex®-M0 and -M4 microcontrollers offer multi-sense technology including CAPSENSE™ capacitive touch sensing. This provides your device a quick-access touch panel. Your design can have flexible cooking zone adjustment, for different sized cookware. With our AIROC™ Wi-Fi & Combo portfolio, IEEE 802.11a/b/g/n/ac/ax WLAN, Bluetooth® and Matter standard, your device is seamlessly integrated into any smart home ecosystem. Intelligent and connected induction cooktops can auto-matically connect to kitchen hoods for complimentary to the connectivity, the OPTIGA™ Trust family delivers secure communication to the cloud or other devices, as well as storage and secure firmware updates. For optimal integration and safety, we recommend EiceDRIVER™ 25 V single-channel low-side non-inverting gate drivers for IGBTs in the SOT-223 package, with best-in-class fault reporting accuracy. The 650 V / 1200 V / 1350 V / 1600 V Reverse Conducting IGBTs for voltage- and current-resonant inverters are specifically designed for use in induction cooking and heating applications, and are optimized for energy- and heat-efficient solutions.

Don't miss our system solution reference design:
Dual-hob half-bridge Smart Induction Cooktop Reference Design

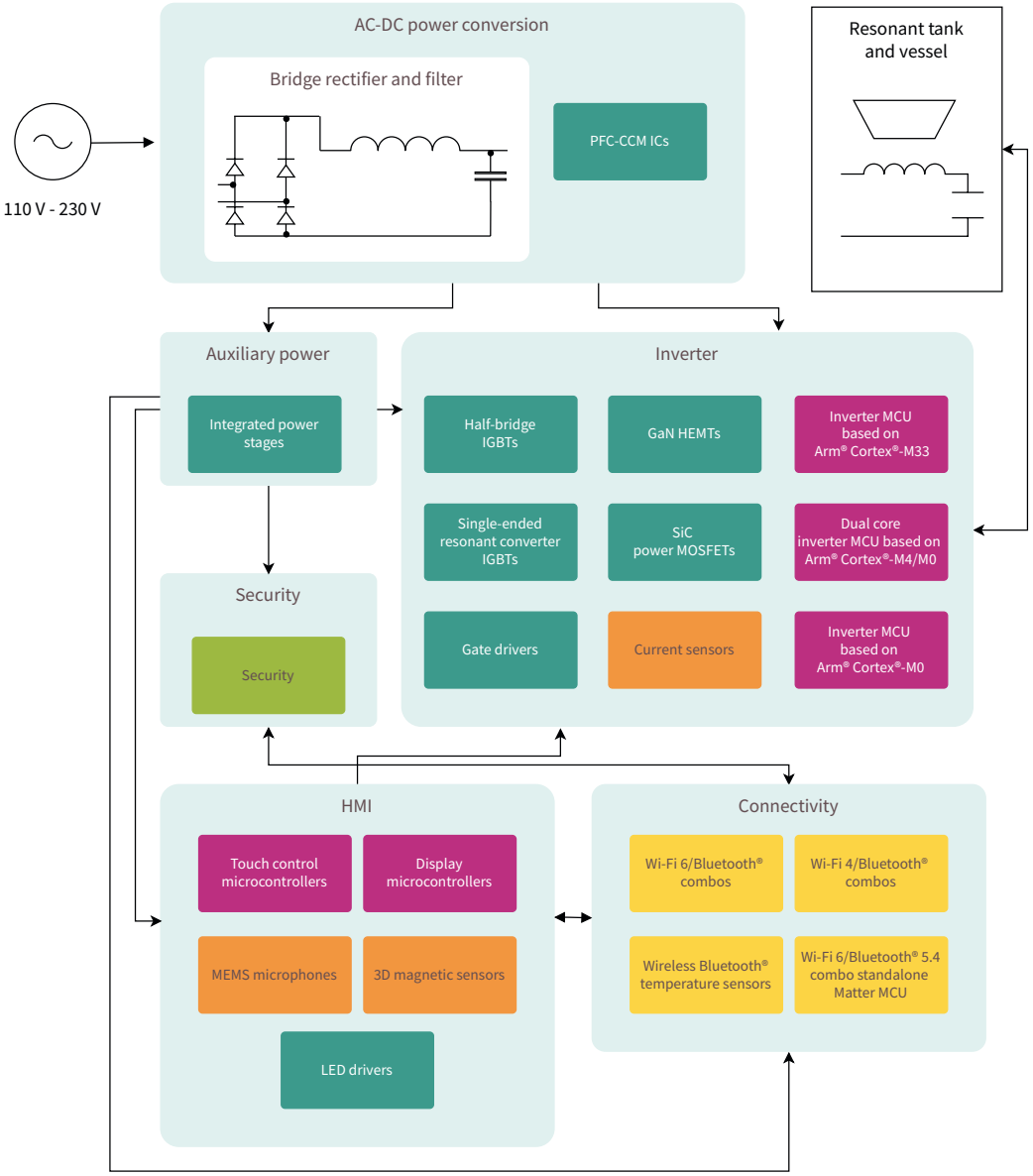
Key features and benefits

- One-stop-shop: Complete system solution offering for inverter, system control, auxiliary power, HMI, connectivity, sensing, and security functional blocks
- Faster time-to-market and design effort savings
- Highly reliable market-proven Infineon products with extended system and product lifetime
- Innovative reverse conducting IGBTs for higher efficiency and increased reliability
- Cutting-edge sensing use cases and touch-sensing technology for intuitive user interactions even with wet surfaces
- Great variety of eval. and reference boards enabling fast prototyping and verification



www.infineon.com/inductioncooking

Induction cooktops block diagram



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