

### **Smart Controller Combines Motion Control Engine With Three-Phase Gate Driver**

[Infineon Technologies'](#) IMD110 SmartDriver series is a smart motor controller family that combines the iMOTION motion control engine (MCE) with a three-phase gate driver in a compact package (Fig. 1). The integrated gate driver, which is based on the company's unique silicon-on-insulator (SOI) technology, can drive a wide variety of MOSFETs and IGBTs in variable speed drives. The family uses the latest MCE 2.0, which provides a ready-to-use motor and, optionally, PFC control (Fig. 2). Applying the MCE for controlling the motor, customers can focus on their system design. Key target applications are motors in major home appliances as well as fans and pumps.

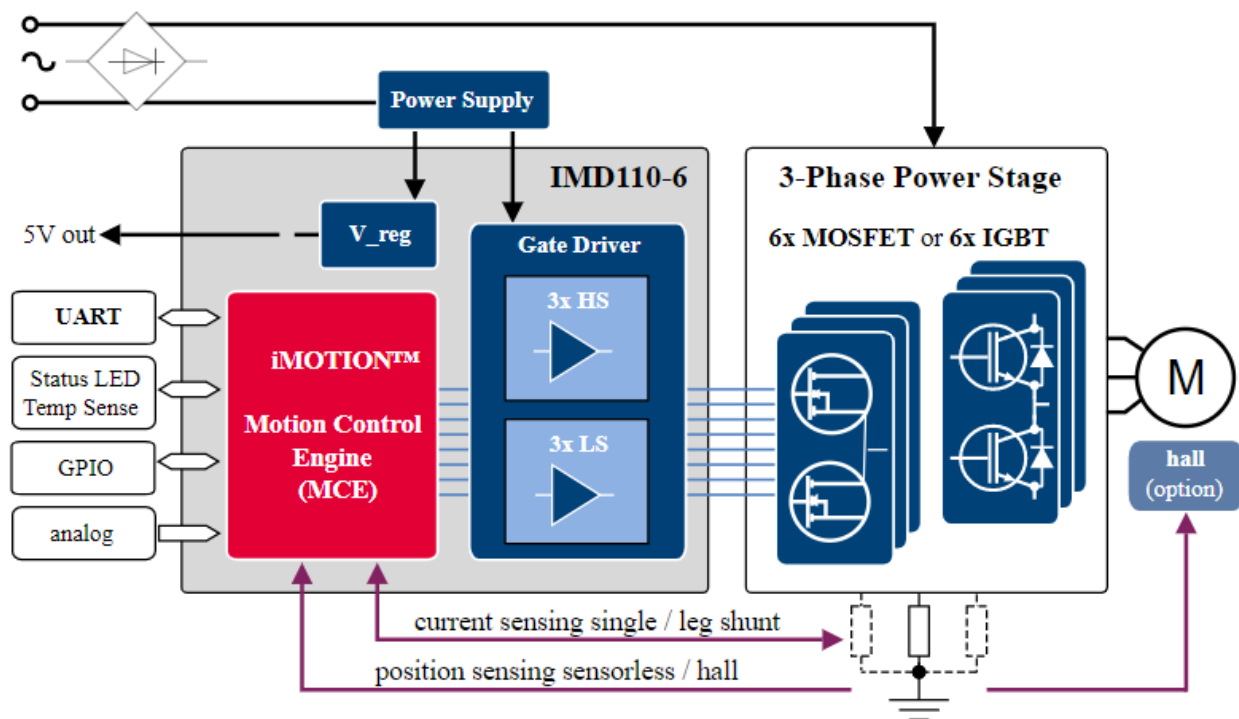
Infineon's field-proven MCE 2.0 implements highly efficient field-oriented control (FOC) in sensorless or hall-based motor inverters. The wide operating voltage of the SOI gate driver addresses battery and mains-powered motors and delivers robustness and reliability. An integrated voltage regulator enables several supply schemes and helps to achieve a reduced bill of materials (BOM). IMD110 devices are pre-certified for applications requiring functional safety according to UL/IEC 60730 (Class B).

Rapid prototyping of a drive inverter is enabled via two new control boards for the iMOTION Modular Application Design Kit (MADK). MADK is a modular and flexible development platform providing a wide range of control and power board options for motor drive applications up to 1 kW.

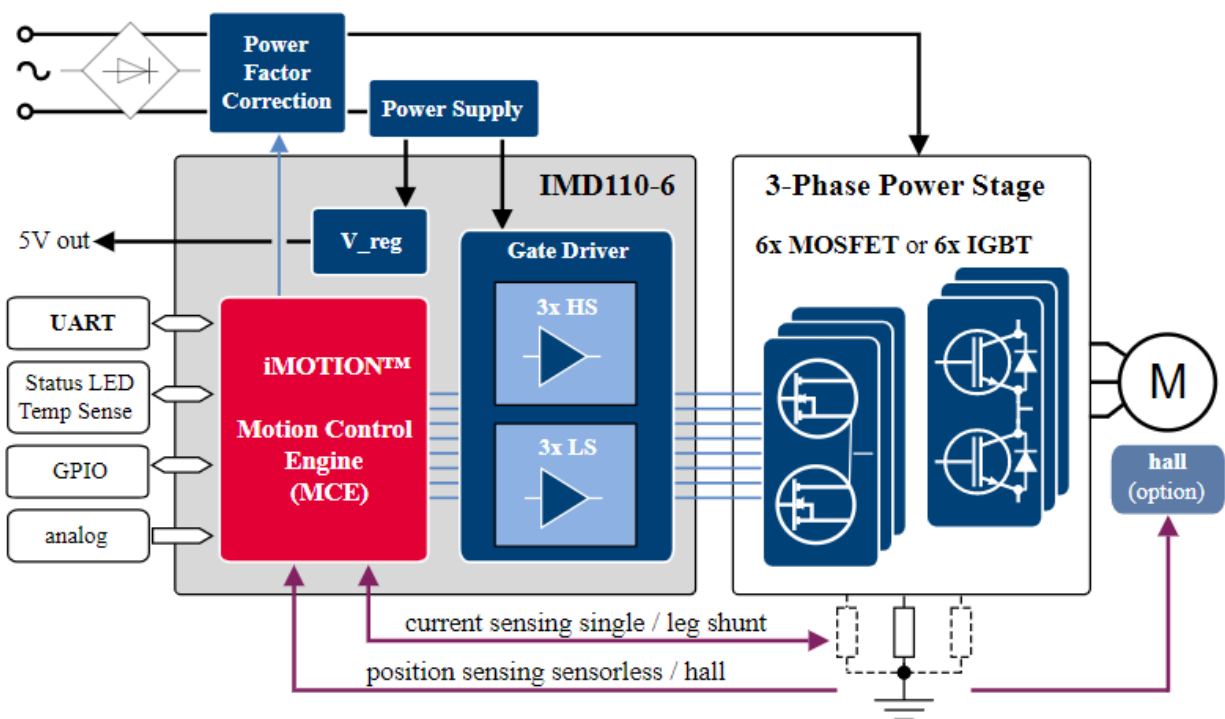
Devices in LQFP-40 packages are in mass production, and they are pin-compatible with LQFP-48 packages. For more information, see the IMD110 family product [page](#) and the iMOTION Modular Application Design Kit MADK [page](#).



*Fig. 1. The IMD110 iMOTION Smart Driver integrates motor controller and a 600-V three-phase gate driver in an LQFP-40 package.*



(a) IMD111T-6F040



(b) IMD112T-6F040 diagram

Fig. 2. The IMD110 Smart Driver combines the iMotion control engine with three-phase gate driver and voltage regulator. Useful for motor drives up to 1 kW and available without (a) or with (b) power factor correction, the devices are aimed at major home appliance and fan/pump applications.