



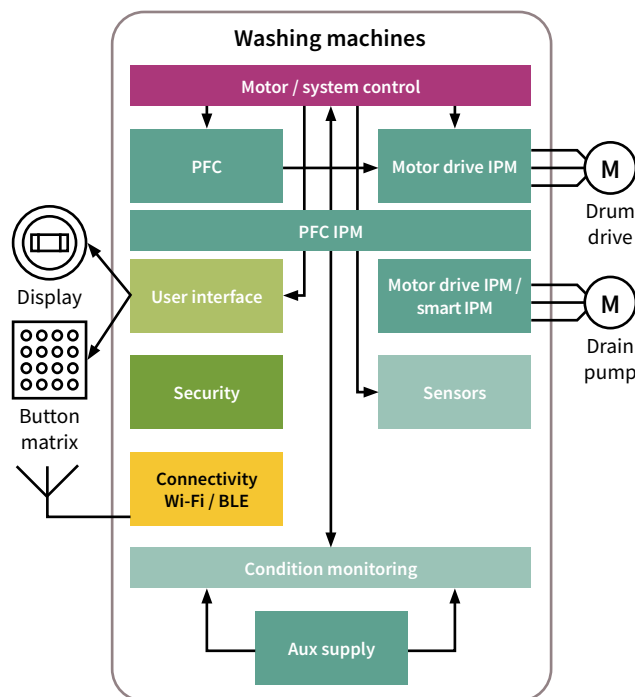
Application brief

Washing machines

Low vibration, low noise, reliable fan control, sensorless field-oriented control

Today's washing machines and dryers must meet a growing list of expectations as they become smarter, more powerful and more efficient on energy and water consumption. Used primarily in private homes, quiet operation is often highly valued. Stable and smooth start/stop functionality, a wide choice of washing programs optimizing water and detergent consumption and vibration suppression round out the list of must-haves. Home owners also want to easily and securely integrate these appliances with their home automation network to support remote control and condition monitoring.

Washing machines that can deliver these capabilities must be designed with low-vibration components, a drum drive with low acoustic noise, reliable fan control for dryers and sensorless field-oriented control. The semiconductor solutions that make all of this possible must also be energy-efficient and be available in the latest, compact form factors. Other key success factors include an attractive price-performance ratio and support for emerging smart appliance features. System solutions tick all of these boxes, combining proven integration and comprehensive features with robust protection and fast time-to-market.



Washing machine system components from Infineon

Our comprehensive portfolio of top-quality semiconductors enables you to meet all the latest demands and efficiency trends. Easy-to-integrate components for washing machines and dryers deliver reliability and energy efficiency levels that differentiate your design through smaller or thinner form factors, miniaturized packaging and higher power densities.

Highlights of our offering include:

- > [IGBT](#) power semiconductors in discrete or module packages
- > [Gate driver ICs](#)
- > Highly integrated [IPM solutions](#)
- > [WICED® connectivity](#) products for Wi-Fi® / BLE integration
- > [PSoC® 6 / XMC™ microcontrollers](#) and
- > [CoolSET™ products](#) for auxiliary power supplies
- > [OPTIGA™ Trust](#) product family for embedded security solutions
- > [XENSIV™](#) family of magnetic sensors

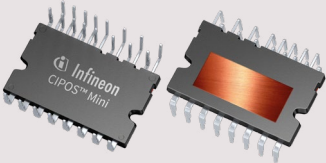


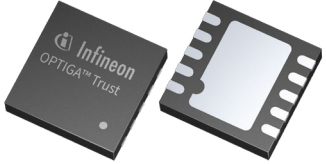
PSoC® 6 bridges the gap between expensive, power-hungry application processors and low performance microcontrollers (MCUs). The ultra low power PSoC® 6 MCU features an Arm® Cortex® M4 for high performance tasks, and an Arm® Cortex® M0+ for low-power tasks. Highlights include built-in security to protect IoT systems.

WICED® Wi-Fi® + Bluetooth® combos integrate IEEE 802.11a/b/g/n/ac WLAN and Bluetooth® in a single-chip solution to enable small-form-factor IoT designs. Combo solutions are available for both 1x1 SISO with up to 433 Mbps PHY data rates and 2x2 MIMO with up to 867 Mbps PHY data rates. These solutions can be coupled with external MCUs from popular vendors or Linux on application processors to implement a complete Wi-Fi® + Bluetooth® system.

Our end-to-end offering enables you to create highly compact, robust and reliable systems that consume less power and offer a rich user interface. You can combine our [CIPOS™ IPM](#) products for drum drives and pumps with [iMOTION™](#) devices for dedicated motor control or with [PSoC® 6 / XMC™ microcontrollers](#) for motor and system control, and complete your design with [WICED® connectivity](#) products and [XENSIV™ sensors](#).

The [OPTIGA™ Trust](#) product family offers a full range of turnkey security solutions. These include [OPTIGA™ Trust B](#) to help system and device manufacturers safeguard the authenticity, integrity and safety of their original products. [OPTIGA™ Trust M](#) is a high-end security solution optimized for connected devices. It provides a unique device identity, supporting extremely flexible, high-performance, secured access to any major cloud provider.

Highlight products

<p>CIPOS™ IPMs</p>		<p>The energy-efficient CIPOS™ modules integrate various power and control components to increase reliability, optimize PCB size and reduce system costs. This simplifies power design and reduces time-to-market.</p> <p>Learn more about CIPOS™ IPMs</p>
<p>PSoC® 6 microcontrollers</p>		<p>PSoC® 6 provides a secure solution for IoT developments, supporting multiple, simultaneous environments without the need for external memories or SoCs. These devices provide integrated hardware and software security features for IoT systems that require robust protection against cyber threats and hacking.</p> <p>Learn more about PSoC® 6 microcontrollers</p>
<p>Wi-Fi®/BLE combo controllers</p>		<p>WICED® (Wireless Internet Connectivity for Embedded Devices) is a full-featured platform with proven Software Development Kits (SDKs) and turnkey hardware solutions from our partners to readily enable Wi-Fi® and Bluetooth® connectivity in system designs.</p> <p>Learn more about Wi-Fi® / BLE combo controllers</p>
<p>OPTIGA™ Trust family</p>		<p>The OPTIGA™ Trust family provides a root of trust for both connected and non-connected devices. This broad portfolio of products combines ease of integration with robust security capabilities tailored specifically to the needs of different use cases.</p> <p>Learn more about the OPTIGA™ Trust family</p>

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2021 Infineon Technologies AG.
All Rights Reserved.

Please note!

This Document is for information purposes only and any information given herein shall in no event be regarded as a warranty, guarantee or description of any functionality, conditions and/or quality of our products or any suitability for a particular purpose. With regard to the technical specifications of our products, we kindly ask you to refer to the relevant product data sheets provided by us. Our customers and their technical departments are required to evaluate the suitability of our products for the intended application.

We reserve the right to change this document and/or the information given herein at any time.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.