

Motor drivers in miniature modules from STMicroelectronics simplify appliance designs that target best energy ratings



SLLIMM™ -nano modules integrate complete motor-control power stage plus optional sensing and safety features, saving over 30 components to cut design time, cost and size.

STMicroelectronics has added two miniature motor drivers to its range of SLLIMM (Small Low-Loss Intelligent Molded Modules), which will enable domestic appliances to offer better energy ratings.

Energy marking and labeling schemes, such as the ENERGY STAR® mark and in-store energy

rating labels, which are mandatory in many countries and communities worldwide, give consumers the skills and tools to identify energy efficient products in each price range. Intelligent motor controllers provide the key to using less energy, while also enabling additional benefits such as new features and quieter operation in appliances such as dishwashers, refrigerators, air conditioners and fans.

ST's new SLLIMM nano family extends the portfolio of SLIMM intelligent power modules for appliance motor drivers in a single module that connect directly between the central microcontroller and the motor. Compared to a conventional driver, which typically requires more than 30 individual components, ST's modular solution reduces costs by simplifying design and significantly reducing component count while saving space, improving reliability and lowering electromagnetic emissions (EMI). The modules are also ideal for small built-in motor applications where assembly space is limited.

Further technical information:

Two variants are available; the [STGIPN3H60](#) and [STGIPN3H60A](#). They are each housed in a 29.15 x 12.45mm package with 26 leads, making them ST's smallest such devices to date. Inside each module is a complete three-phase half bridge including high-voltage gate drivers and IGBT power switches, plus freewheeling diodes and bootstrap diodes. The bootstrap diodes supply high-voltage circuitry on the motor side as the driver module is starting up. Integrating it in the module delivers an additional saving in external components, and is achieved using a patented technique unique to ST.

The STGIPN3H60A provides basic motor-drive capabilities for price-sensitive applications. Extra

features in the STGIPN3H60 include an uncommitted op-amp, which engineers can use to feed back the sensed motor current to the microcontroller in a closed-loop, Field-Oriented Control (FOC) system. There is also a comparator for use in over-temperature or over-current shutdown. The STGIPN3H60 also has a smart shutdown function capable of generating a simple fault indication or shutting the driver down safely within 200ns in an emergency.

Major features of STGIPN3H60/A:

- 600V/3A IGBT rating
- Optimized for low electromagnetic interference
- Fixed, dead-time and interlocking function
- Under-voltage lockout
- Shutdown function
- Pin-out optimized to simplify board layout
- 1.57mm creepage distance between high and low voltage pins, meeting international safety standards for high-voltage devices

The STGIPN3H60A and STGIPN3H60 are available now in full production in the 26-pin NDIP leaded package.

For more information, or details on the full range of STMicroelectronics products available from Anglia, please email info@anglia.com

[Alternatively, click on this link to go to the main STMicroelectronics section where you can view other news articles and product data.](#)

[Back to product news](#)

Bookmark with:



[info?](#)

[Show more](#) ▼

This news article was originally published in July 2012.

[anglia designs](#) [anglia displays](#) [anglia embedded](#) [anglia greenpages](#) [anglia Hi-Rel](#)
[anglia lighting](#) [anglia m2m](#)

Copyright © 1995-2012 Anglia Components Ltd.

Please read our [Privacy Statement](#) in conjunction with the [Terms and Conditions](#) of this Website.

8/11/11