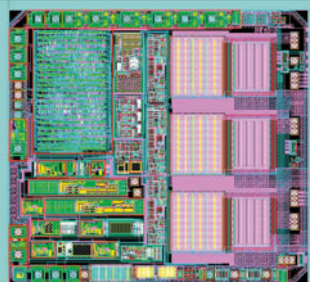


# Multi-talented motor driver

*– The ASIC from Micronel is a true all-rounder. It is used as a motor driver in brushless-sensorless motors, controlling each in accordance with the customer's individual needs. It is the product of over six years development know-how and can be easily adapted for every situation.*

## A small all-rounder



There is scarcely a single area of application where the little Micronel ASIC motor driver (4 x 4mm, 'applications specific integrated circuit') is not already in use. In conjunction with Micronel's high performance mini-ventilators and fans, whose tiny DC motors it controls and for which it was originally developed, it can now be found in use in the space travel, pharmaceutical, automotive and fuel industries, as well as in aviation. Micronel's motor driver for brushless-sensorless 3-phase (electrically commutated) motors has proved itself in these sectors over many years, being constantly further developed in the process.

A wide variety of control variants have been integrated, which facilitate, amongst other things, electronic noise dampening (sinus approximation) and thus quieter appliances. The ASIC's small size is another of its strengths, making it a popular component for miniature devices. However, the ASIC is not limited to being used in small micro-fans. It can reliably control bigger motors too, of up to 300 watts output. It also has an internal 200mA driver and with various different MOSFETs (additional external drivers) can easily be expanded up to 2A.

A big advantage in comparison to traditional motor drivers is that with the Micronel ASIC the motor's revs can be set at constant voltage to any speed with PWM (pulse width modulation). Where the load on

the motor varies, the PPL (phased lock loop) control comes into use, immediately correcting the deviation in rev speed and keeping the motor going at a constant rate. The 'break signal' takes on yet another control function. It is used for any motor that is not allowed to coast to a stop to bring it to a quick standstill. A direction signal meanwhile controls turning around and direction of turn. And two further signals are built in for safety purposes, for instance in medical devices, aviation equipment and all breathing apparatus. The NOS (non operating signal), which indicates if the motor is still running, and a tachosignal (or frequency signal), with which the rotary speed is detected.

An ASIC evaluation board is available for all customers who would like to run function tests on their own applications. For larger series production, Micronel is happy to provide its renowned, first class engineering and customer support services.

Micronel's motor driver is also relied upon by Maxon Motor AG, one of Micronel's long-time business partners, who is very impressed by its many advantages and wide variety of potential applications. Indeed, the ASIC is a mature quality product, that is now well out of the development stage and past any teething problems and is fully up to industrial standard. A great quality for any electronic DC motor!

### The motor driver's features at a glance:

- 3-phase, sensorless and brushless (based on Back-EMF)
- Large voltage range from 5 to 36 VDC
- Integrated 200mA driver
- Adjustable current limits
- Interface for external power driver
- Adjustable speed settings
- PWM (pulse width modulation) to regulate rotary speed
- PPL (phase locked loop) makes constant speed possible
- NOS (non operating signal)
- Tacho signal (frequency signal)
- Stop function
- Electronic noise dampening (sinus approximation)
- Direction signal

MICRONEL AG  
Zürcherstrasse 51  
CH-8317 Tagelswangen

Postfach: CH-8315 Lindau  
Tel +41 (0)52 355 16 16  
Fax +41 (0)52 355 16 20

Email [info@micronel.com](mailto:info@micronel.com)  
Internet [www.micronel.ch](http://www.micronel.ch)