

## Product Brief

# TLI496x-xM

## High Precision Industrial Hall Effect Sensor for 5V Applications

TLI496x-xM is an integrated Hall effect sensor specially designed for highly accurate applications. The sensor provides an easy-to-use and cost effective solution for position sensing applications, requiring high temperature stability of the magnetic threshold.

Target applications for the TLI496x-xM Hall switch family are all applications requesting a precision Hall latch or Hall switch with an operating temperature from -40 °C to 125 °C. By offering an excellent magnetic behavior Infineon's switches are ideally suited for:

- Index counting applications with a pole wheel
- Rotor position detection (BLDC motors)
- Open/close detection

Responding to the market requirements of industrial applications the TLI496x-xM provides a cost optimized solution with very low current consumption (1.4 mA) and superior ESD protection (up to 4 kV HBM). The sensor family enables the design of highly power efficient and robust systems in line with a very low failure rate in production.

Furthermore it supports applications requiring operating supply voltage from 3.0 V to 5.5 V. The extremely small SOT23 SMD package (just 2.9 x 1.3 x 1.0 mm) is dedicated for the design of very small and compact application circuits.

To enable our customers' systems to fulfill the highest quality standards and various environmental regulations: the SOT23 package is halogen free, RoHS compliant and JESD47 qualified.

### Applications

- Brushless DC motors for commutation, e.g. e-bike, cooling fans for PC
- Power closing in home automation, e.g. sun-blind, garage door
- Open/close detection, e.g. in white goods or home security systems

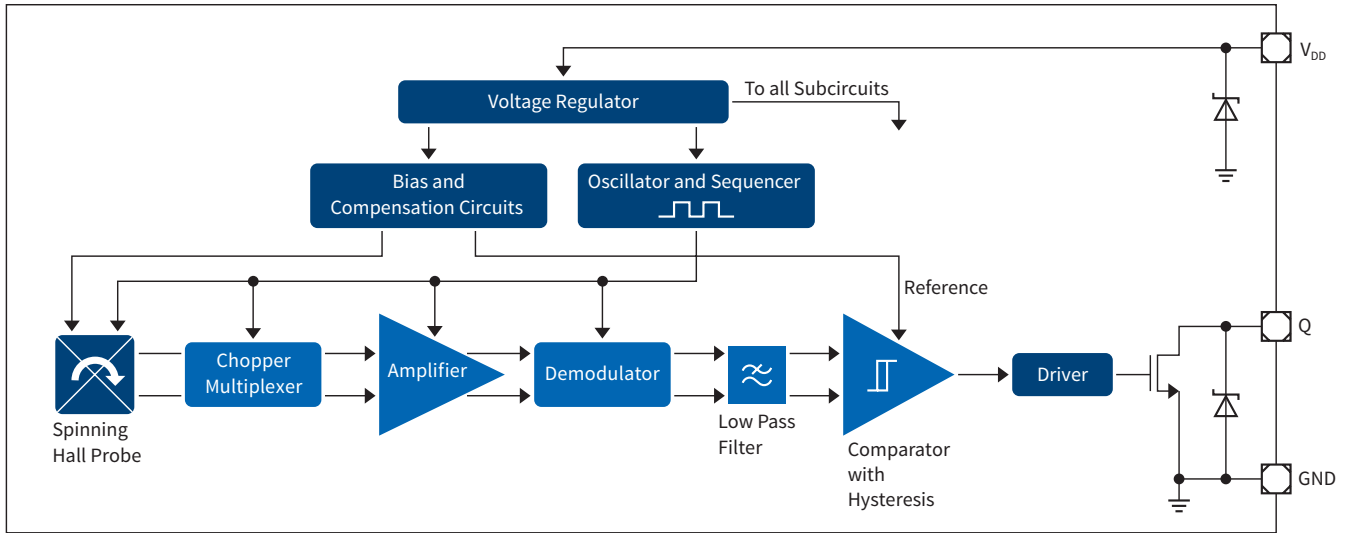
### Key Features

- 3.0 V to 5.5 V operating supply voltage
- Low current consumption 1.4 mA
- ESD protection 4 kV HBM
- Active error compensation (chopped)
- High stability of magnetic thresholds
- Low jitter (typ. 0.35  $\mu$ s)
- Operating temperature range from -40 °C to 125 °C
- Small SMD package SOT23
- JESD47 qualified

# TLI496x-xM

## High Precision Industrial Hall Effect Sensor for 5V Applications

Block Diagram TLI496x-xM



Infinion’s latest TLI496x-xM products are dedicated for industrial applications requiring an operating supply voltage from 3.0 V to 5.5 V. The family comprises integrated Hall effect sensors, with a latch or Hall switch characteristic and highly accurate switching thresholds for operating temperature up to 125 °C. The chopped Hall IC switch comprises a Hall probe, bias generator, compensation circuits, oscillator and output transistor. The bias generator provides currents for the Hall probe and the active circuits.

The temperature behavior is stabilized by compensation circuits. The active error compensation (chopping technique) rejects offsets in the signal path and minimizes the influence of mechanical stress to the Hall probe caused by molding and soldering processes or other thermal stress in the package. The chopped measurement principle together with the threshold generator (comparator with hysteresis), and the comparator ensures highly accurate and temperature stable magnetic thresholds.

### Product Summary

Type	Description	Package	Packing	Ordering Code
TLI4963-1M	2.0 mT latch	SOT23-3-15	Blister	Coming soon
TLI4963-2M	5.0 mT latch	SOT23-3-15	Blister	Coming soon
TLI4965-5M	7.5/5.0 mT unipolar switch	SOT23-3-15	Blister	Coming soon

Published by  
 Infineon Technologies AG  
 85579 Neubiberg, Germany

© 2015 Infineon Technologies AG.  
 All Rights Reserved.

Visit us:  
[www.infineon.com](http://www.infineon.com)

**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](http://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.