Product brief

**TLE5109A16(D)**

XENSIV™ magnetic position sensor – analog AMR-based angle sensors for ultra-precise angular position sensing

Infineon’s new TLE5109 product family covers our latest ultra-precise, fast analog AMR-based angle sensors. TLE5109 products are the right fit for any kind of ultra-precise and fast 180° angle measurement application. The sensors’ application fields range from BLDC motor position applications for e.g. pumps, wipers or brakes, position measurements of valves, flaps or pedals to steering angle applications with the highest functional safety requirements. Built within a 180° sensing technology, the new TLE5109 sensors nevertheless can be used for 360° for motors with an even number of pole pairs.

TLE5109 products are available as single and dual die versions and at two different supply voltage options, optimized for 3.3 V as well as 5 V. All products come inside the TDSO-16 package. The whole TLE5109 family is ready for ISO 26262, targeting ASIL-D for all dual die sensors. This makes the products a perfect fit for both automotive as well as industrial safety applications.

TLE5109 products can be used within a very broad magnetic field range, starting at 10 mT reaching up to more than 500 mT. One major benefit of the Infineon iAMR technology is its high angle accuracy, reaching typical values of only 0.1° angle error. At low magnetic fields of 10 … 20 mT, TLE5109 products are outperforming the market due to their benchmark small typical angle error of only 0.2°. Reaching such low error values at low magnetic fields, TLE5109 products enable very cost-efficient systems as customers can use less powerful and thus more economical magnets.

With their very fast start-up time of only 40 … 70 µs, TLE5109 products are outperforming competition again with regards to speed. TLE5109 sensors are also the perfect fit for high speed applications > 30.000 rpm.

Adding the AMR-based TLE5109 family to the already existing GMR-based TLE5009 and diverse TLE5309 products, Infineon Technologies AG is also increasing the design-in flexibility for customers. The quick and easy product version interchange is enabled due to the identical pin-configuration and interfaces of all TLE5x09 sensors.

www.infineon.com/angle-sensors
TLE5109A16(D)
XENSIV™ magnetic position sensor – analog AMR-based angle sensors for ultra-precise angular position sensing

Block diagram TLE5109A16 (single die)

Block diagram TLE5109A16D (dual die)

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.

Published by
Infineon Technologies AG
81726 Munich, Germany
© 2019 Infineon Technologies AG.
All Rights Reserved.

Order Number: B342-0778-VL-7600-EU-EC-P
Date: 02/2019

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.