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TLE5041PLUSCAAMA1

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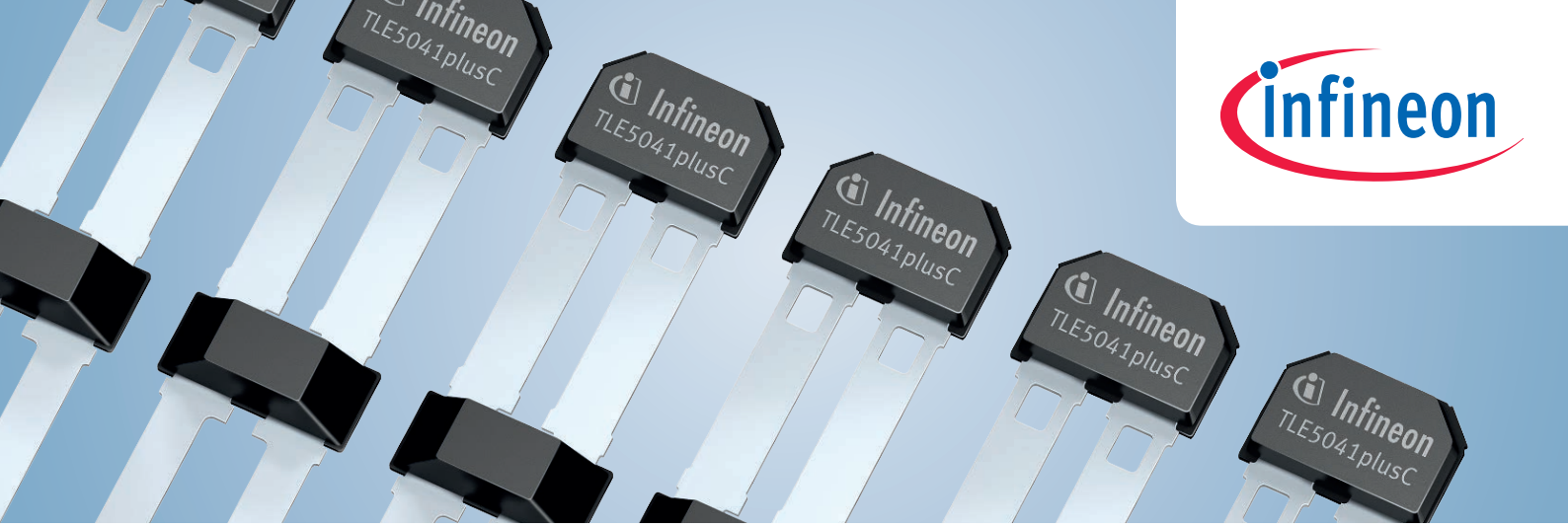


Product Brief

TLE5041plusC

Differential iGMR (Giant Magneto Resistive) Wheel Speed Sensor for indirect TPMS Systems (iTPMS)

TLE5041plusC is Infineon's first productive GMR Speed Sensor, specially designed to fulfill the tight jitter-requirements coming with indirect TPMS systems. These systems control the car's tire pressure based on the information they receive from the wheel speed sensors. As the calculation algorithms need accurate data to start with, low jitter as guaranteed by iGMR technology, is crucial for correct functioning of the system. Traditional Hall sensors get to their limits with these requirements. TLE5041plusC operates, as its Hall predecessors, as a differential system, thus being particularly robust against stray field.
Even though, because of Infineon's integrated iGMR technology, this brand new high-end chip is offered at the same price as its Hall based sibling TLE4941plusC.

Considering all points above, the increasingly popular magnetic encoder applications ("pole wheel"), TLE5041plusC is available in the same package as its Hall based relatives (PG-SSO-2-53), with its integrated capacitor for high EMC robustness.
For the use in older steel wheel systems, Infineon can offer support for a back bias sensor design: this is particularly important as back bias solutions for MR-technologies are technically more difficult to design than for Hall, as they require specially shaped magnets.

Being part of the extremely successful Infineon wheel speed sensor family, TLE5041plusC is ideally suited for automotive wheel speed applications, such as ABS and ESC, especially when (but not restricted to that) indirect TPMS systems require extremely jitter-accurate speed information.

TLE5041plusC is Specially Designed to Support iTPMS

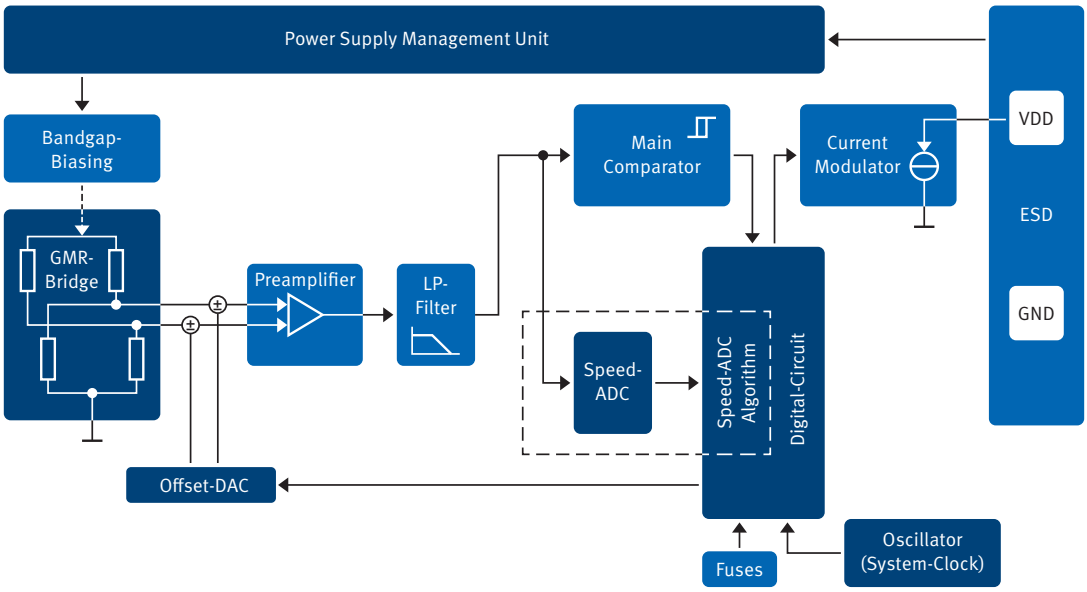
Features

- High sensitivity
- Best-in-class operating air gap at very low Jitter suitable for iTPMS
- High resistance against temperature change: No unwanted pulses at thermal drift
- Differential measurement principal, highly immune against disturbing external magnetic fields
- Wide frequency range of ~ 0.5Hz to 5kHz
- C type with 1.8nF overmolded capacitor
- Fast start-up
- Advanced performance by dynamic self calibration principle
- 2-wire current interface
- Identical package as Hall sensor TLE4941plusC
- Wide operating temperature ranges of $-40°C \leq T_j \leq +175°C$
- Evaluation tool available for internal signal read-out, e.g. for air gap indication

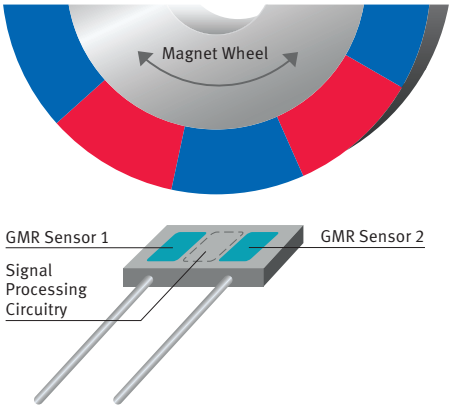
TLE5041plusC

Differential iGMR (Giant Magneto Resistive) Wheel Speed Sensor for indirect TPMS Systems (iTPMS)

Block Diagram



Magnetic Encoder Wheel



Sales Name	Description	Order Code
TLE5041plusC	TLE5041plusC in standard PG-SSO-2-53 package	SP001029256

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