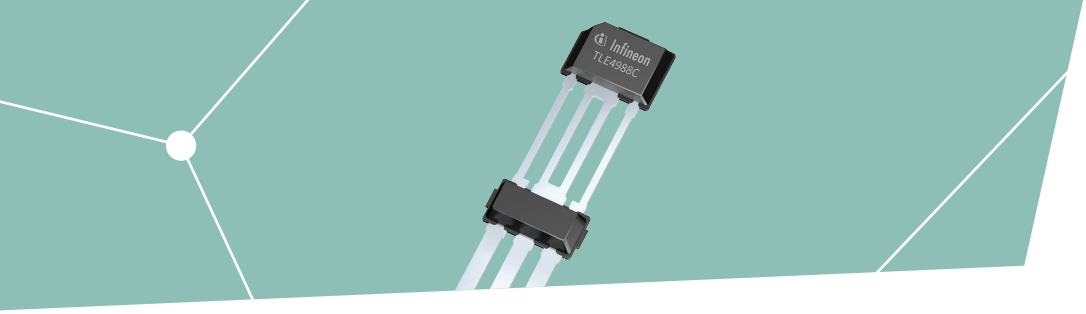


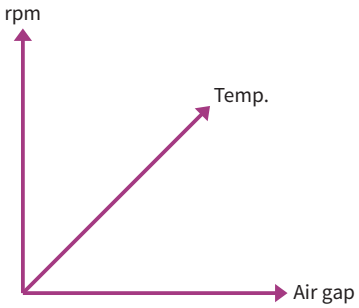
Product brief

TLE4988C

XENSIV™ Hall based camshaft sensor – advanced performance reduces dependency from rare earths

The Infineon XENSIV™ TLE4988C products feature advanced camshaft sensing performance and improved application adaptiveness. One major benefit of the advanced sensor performance is the reduced dependency from rare earth backbias magnets for module manufacturers. The TLE4988C has proven right performance with a ferrite backbias magnet for all relevant parameters such as phase jitter, phase accuracy or speed effect across key temperature, air gap and rpm ranges.

Right performance with ferrite backbias magnet



- Phase jitter < 0.15° Cam up to ~ 3 mm air gap
- ~ 0.15° Cam/1000 rpm speed effect (1000–5000 rpm)
- Relative phase accuracy < ±0.75° Cam for all relevant temperatures, air gaps and rpm

With automatic in-car calibration a most accurate sensing in real application environment is ensured addressing tolerances of ferromagnetic wheels and magnetic encoders, as well as mounting tolerances of the sensor. The TLE4988C products furthermore allow to compensate for thermal or mechanical stress applied in the module manufacturing process. The embedded EEPROM can also feature a unique chip ID to allow logistic traceability (on request). A new high speed digital I/F allows a fast read out of registers for diagnosis or test purposes.

Infineon's TLE4988C products are available optimized for the use with three different backbias magnet materials, such as Fe, SmCo and NdFe. All products come inside the well established camshaft sensor package PG-SSO-3-52 with Sn plating, 3-wire voltage I/F and increased supply/output capacitance of 220/1.8 nF for higher EMC robustness. With unchanged mechanical specification of the package a high backward compatibility with predecessor products from Infineon is given and design switch cost are minimized.

Features

- Digital output signal (voltage interface)
- TPO True Power On functionality
- Auto TPO – automatic in car calibration
- Improved switching level/phase accuracy
- TC range including ferrite
- High speed digital interface for diagnosis/test
- TIM Twisted Independent Mounting
- EEPROM for algorithm options and ID (on request)
- Increased ESD and EMC Immunity, improved µCut feature
- Digital magnet temperature compensation
- Mechanical stress compensation
- Module package PG-SSO-3-52

Applications

- Camshaft speed and position sensing

AEC Qualified

Speed sensor

www.infineon.com/speed-sensors

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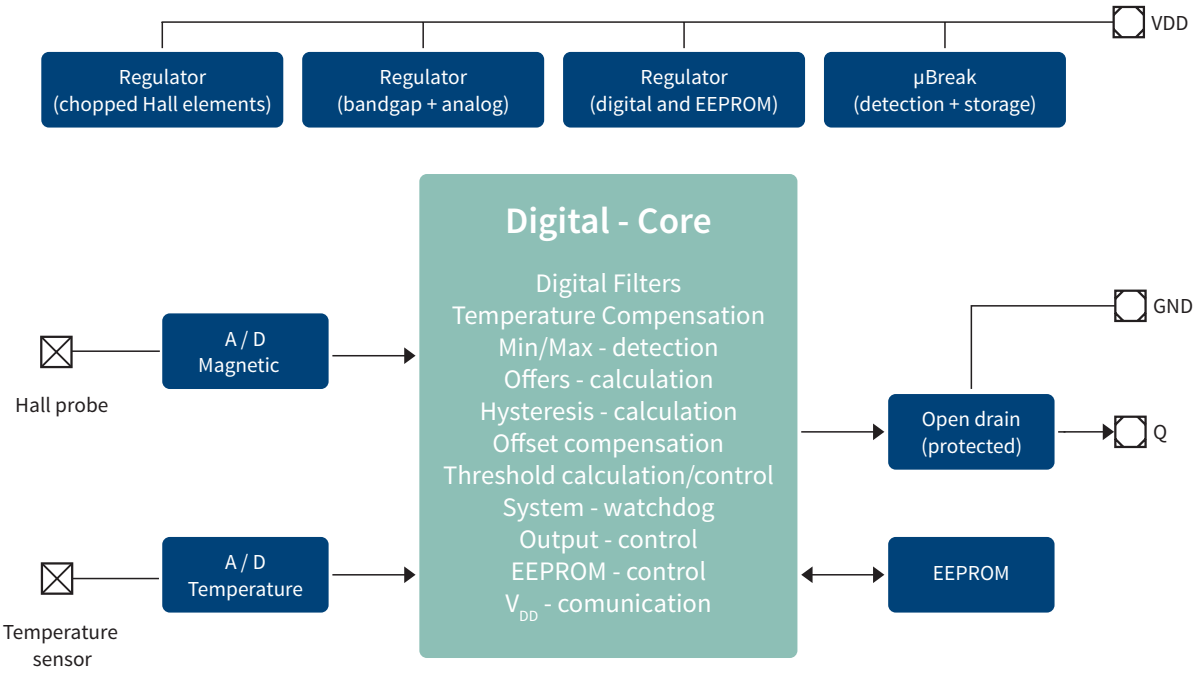
TLE4988 block diagram



Product table

Product type	TC trimming	Supply/Output capacitance [nF]	Package	Ordering code
TLE4988C-XTF-M28	Fe (magnet)	220/1.8	PG-SSO-3-52	SP005073030
TLE4988C-XTN-M28	NdFe (magnet)	220/1.8	PG-SSO-3-52	SP005072956
TLE4988C-XTS-M28	SmCo (magnet)	220/1.8	PG-SSO-3-52	SP001040468

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