PRODUCT BRIEF

XENSIV™ TLE493D-P3B8D Hall magnetic 3D sensor

Dual-channel Hall magnetic 3D sensor with I²C interface, ISO 26262-compliant

Infineon expands its successful XENSIV™ Hall-effect magnetic 3D sensor family with the TLE493D-P3B8D, a dual-channel solution designed to help customers create highly efficient sensing systems that demand redundancy. This innovative sensor offers two fully functional sensors with independent supplies and communication interfaces in a single package, enabling very cost-efficient and compact designs.

The TLE493D-P3B8D follows the same design as the established single-die variant TLE493D-P3B6, ensuring a consistent and compatible solution for customers. By integrating two sensor chips on a single monolithic die, the dual-channel solution achieves excellent matching performance, providing accurate and reliable measurements.

The TLE493D-P3B8D sensor supports functional safety applications up to ASIL B, thanks to its built-in diagnostic functions and full ISO 26262 compliance. It also meets the requirements for automotive use and has been validated according to the AEC-Q100, Grade 0 standard.

The sensor's wake-up function enables efficient energy management, making it perfect for low-power designs that require both precision and reliability. The TLE493D-P3B8D features an I²C interface for convenient device configuration and data readout. Each sensor channel is assigned a unique, preconfigured I²C address, allowing for individualized communication and control.

The sensor is housed in a compact, non-magnetic VSON-8 SMD package, with a footprint of just 3 × 3 × 0.65 mm³ that minimizes PCB space requirements.



Key features

- Two independent sensors in one package
- Supply voltages of 3.3 V and 5 V
- ISO 26262-compliant (ASIL B)
- Magnetic field range selectable
- Wake-up feature
- Integrated temperature measurement
- Operating temperature: –40°C to 150°C
- I²C interface

Key benefits

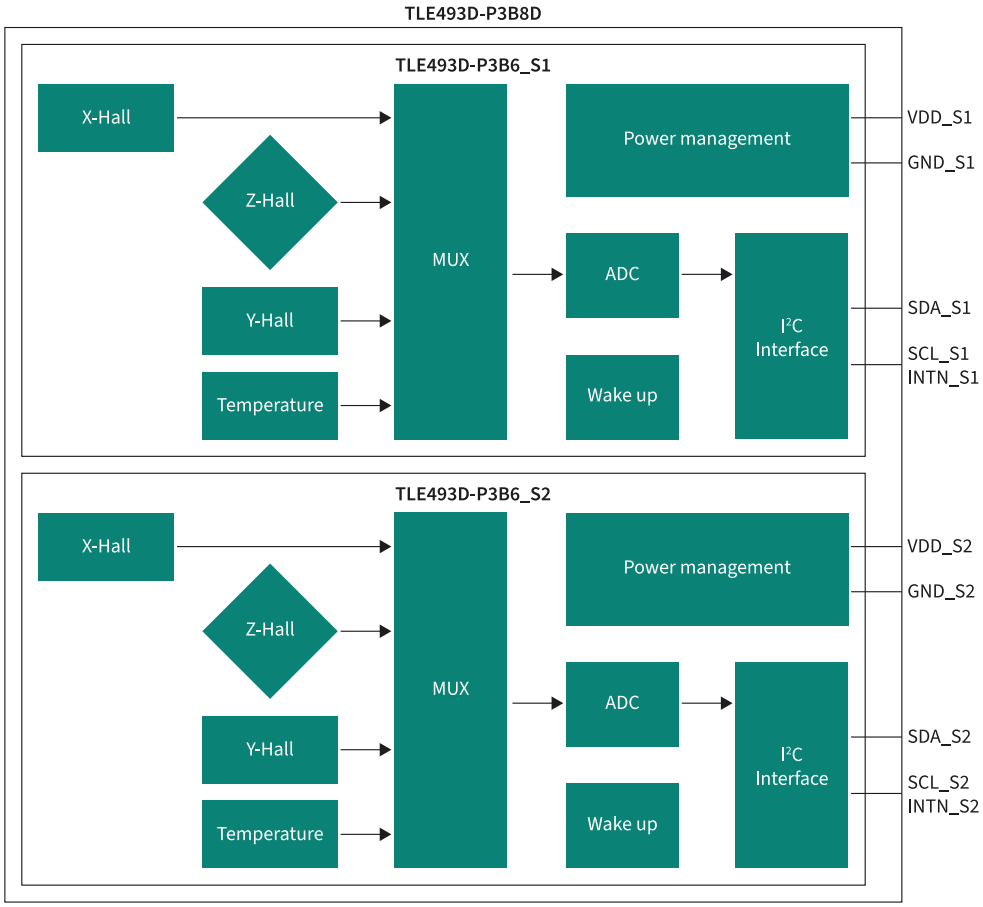
- Best package size for redundant designs
- Excellent matching
- Small PCB footprint
- Wide supply voltage range
- Enables cost-efficient magnetic designs
- Functional safety compliance
- Low power consumption

Key applications

- E-shifter / gear selector
- HMI applications that require redundancy

ISO 26262 compliant
RoHS
AEC Qualified

Block diagram



Product table

Product	Supply voltage [V]	Temperature [°C]	Magnetic range (selectable) [mT]	Sensitivity [LSB_{14}/mT]	Matching drift X to Y [%]	Matching drift X/Y to Z [%]
TLE493D-P3B8D	2.8–5.5	-40–150	±50 ±100 ±160	29.5/59/118	1.7	6.75

Published by
Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

© 2026 Infineon Technologies AG
All rights reserved.

Public

Version: V1.0_EN
Date: 10/2026

Important notice
Products are sold or provided and delivered by Infineon Technologies AG and its affiliates ("Infineon") subject to the terms and conditions of the frame supply contract or other written agreement(s) executed by a customer and Infineon or, in the absence of the foregoing, the applicable Sales Conditions of Infineon. General terms and conditions of a customer or deviations from applicable Sales Conditions of Infineon shall only be binding for Infineon if and to the extent Infineon has given its express written consent.

To the fullest extent permissible pursuant to applicable law, with respect to any information given in this document or in any associated documentation, Infineon disclaims all warranties and liabilities of any kind, whether express or implied, including but not limited to any warranties of merchantability, suitability of the products for the intended application or the specific use, or non-infringement of third-party rights.

Subject to the development and release of the products for series supply by Infineon, the technical specifications of the products are set forth in the relevant final datasheet provided by Infineon and, if any, agreed and signed specifications. Infineon's customers are required to evaluate the suitability of the products for the intended application or specific use.

The information given in this document is subject to change by Infineon at any time without notice.

Scan QR code and explore offering
www.infineon.com