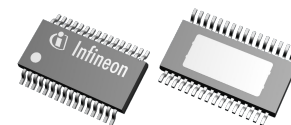


MOTIX™ TLE994x/TLE995x**Microcontroller with LIN and NFET driver for BLDC applications****Features**

- 32-bit Arm^{®1} Cortex[®]-M23 core at up to 40 MHz, 27 interrupts
- Single power supply from 5.5 V to 29 V
- On-chip clock generation
- CRC engine for data integrity
- 72 KB flash with EEPROM emulation, 6 KB RAM
- LIN protocol support (LINUART) and LIN transceiver with safe transmit off
- High voltage monitoring pin (MON)
- Fast synchronous communication interface (SSC)
- Two/three-phase bridge driver (BDRV) with charge pump, PWM generation (CCU7) and safe switch off path
- Low-side shunt current sense amplifier and comparator (CSA)
- Fast 12-bit ADC for measuring up to 16 inputs with high and low voltage range
- 10x 16-bit timer (GPT12 and CCU7), 1x 24-bit timer (SYSTICK)
- 5x GPIOs (incl. RESET, SWD) and 3x GPIs (analog and digital)
- Safety: ISO26262 Safety Element out of Context for safety requirements up to ASIL-B
- Security: Arm[®] TrustZone enabling software isolation
- Temperature range T_J : -40°C up to 175°C
- Compact application footprint with TSDSO-32 package

**Potential applications**

- Automotive motor control for auxiliary drives like pumps and fans in thermal management systems

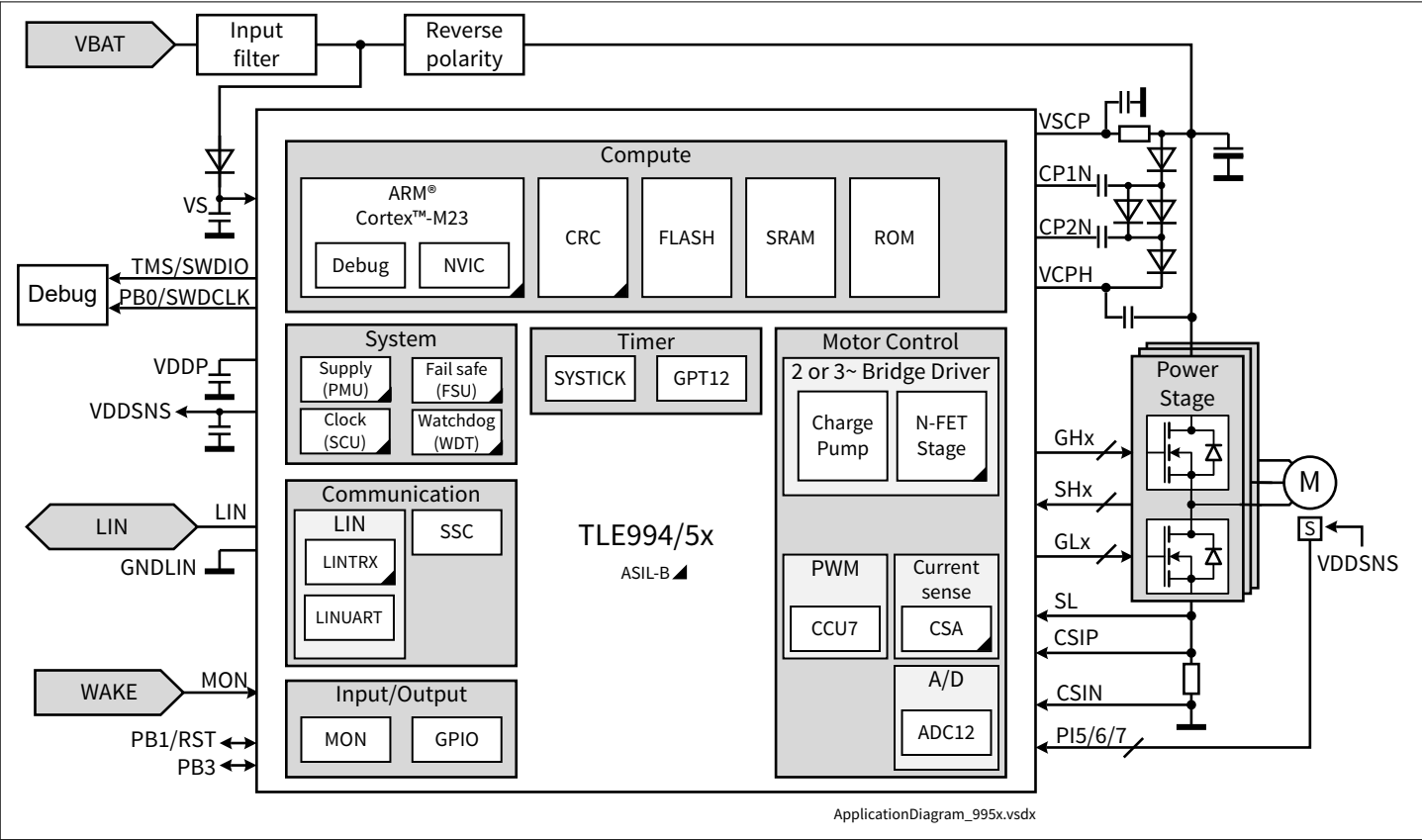
Product validation

Product validation according to AEC-Q100, Grade 0 and Grade 1. Qualified for automotive applications.

¹ Arm and Cortex are registered trademarks of Arm Limited, UK

Description

Description



Product type	Package	Temperature grade	Flash/RAM [KB]	Frequency [MHz]	BDRV
TLE9944EQA40	TSDSO-32	Grade-1	72/6	40	2-phase
TLE9944EQW40	TSDSO-32	Grade-0	72/6	40	2-phase
TLE9954EQA40	TSDSO-32	Grade-1	72/6	40	3-phase
TLE9954EQW40	TSDSO-32	Grade-0	72/6	40	3-phase



Table of contents

Features 1

Potential applications 1

Product validation 1

Description 2

Table of contents 3

Package 4

Revision history 6

Disclaimer 7

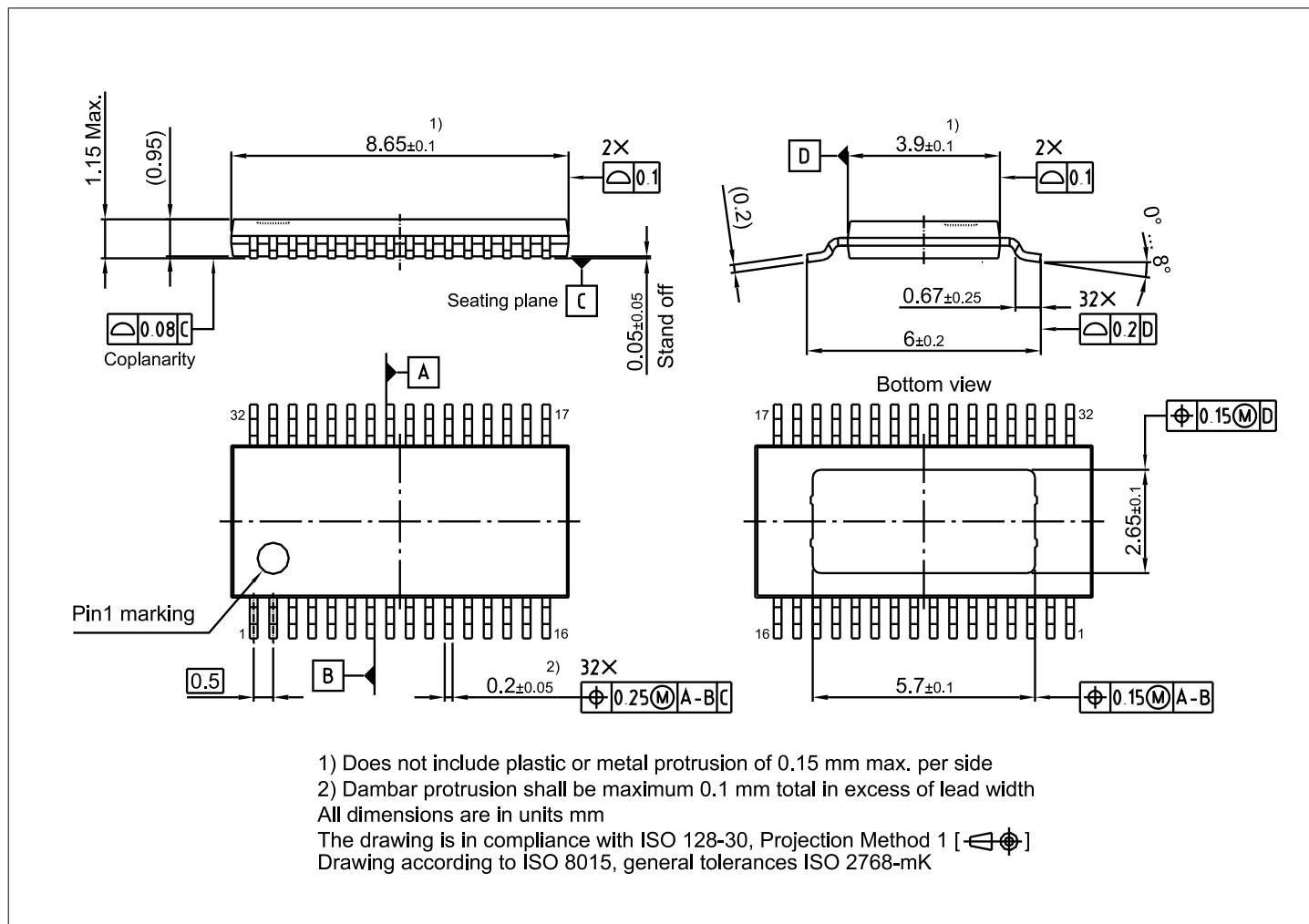


Figure 1 **Package dimensions PG-TSDSO-32-1**

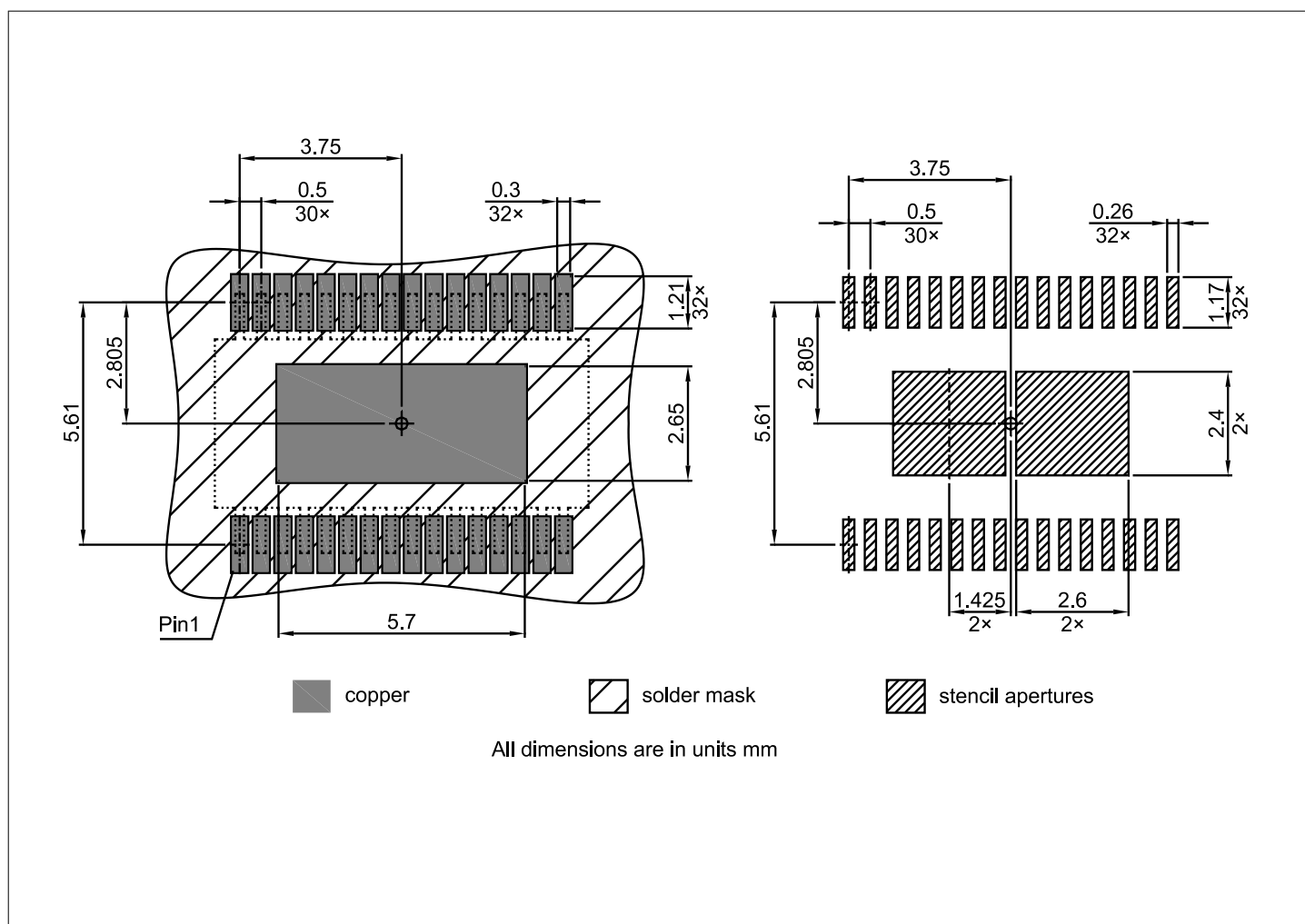


Figure 2 Footprint dimensions PG-TSDSO-32-1

Green Product (RoHS compliant)

To meet the world-wide customer requirements for environmentally friendly products and to be compliant with government regulations the device is available as a green product. Green products are RoHS-Compliant (i.e Pb-free finish on leads and suitable for Pb-free soldering according to IPC/JEDEC J-STD-020).

Further information on packages

<https://www.infineon.com/packages>



Revision history

Revision number	Date of release	Description of changes
Rev. 1.0	2025-01-22	Initial version

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2025-01-22

Published by

Infineon Technologies AG
81726 Munich, Germany

© 2025 Infineon Technologies AG
All Rights Reserved.

Do you have a question about any aspect of this document?

Email: erratum@infineon.com

Document reference
IFX-Z8F80747827

Important notice

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenhheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

Warnings

Due to technical requirements 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 Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.