

### MOTIX™ TLE9954QS

#### Microcontroller with LIN and motor driver for BLDC applications

##### Features

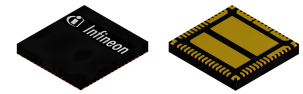
- 32-bit Arm® Cortex®-M23 core at up to 40 MHz, 32 interrupts
- Single power supply from 5.5 V to 29 V
- On-chip clock generation
- CRC engine for data integrity
- 72 KB flash with EEPROM emulation, 6 KB RAM
- LIN protocol support (LINUART) and LIN transceiver with safe transmit off
- High voltage monitoring pin (MON)
- Fast synchronous communication interface (SSC)
- Integrated three-phase bridge driver (BDRV) with charge pump, PWM generation (CCU7) and safe switch off path
- Integrated B6 OptiMOS™-7 NFETs
- 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 GPs (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 LIQFN-58-1 package

##### Potential applications

- Automotive motor control for auxiliary drives like pumps and fans in thermal management systems
- Automotive motor control for compact smart motors like seat adjustment

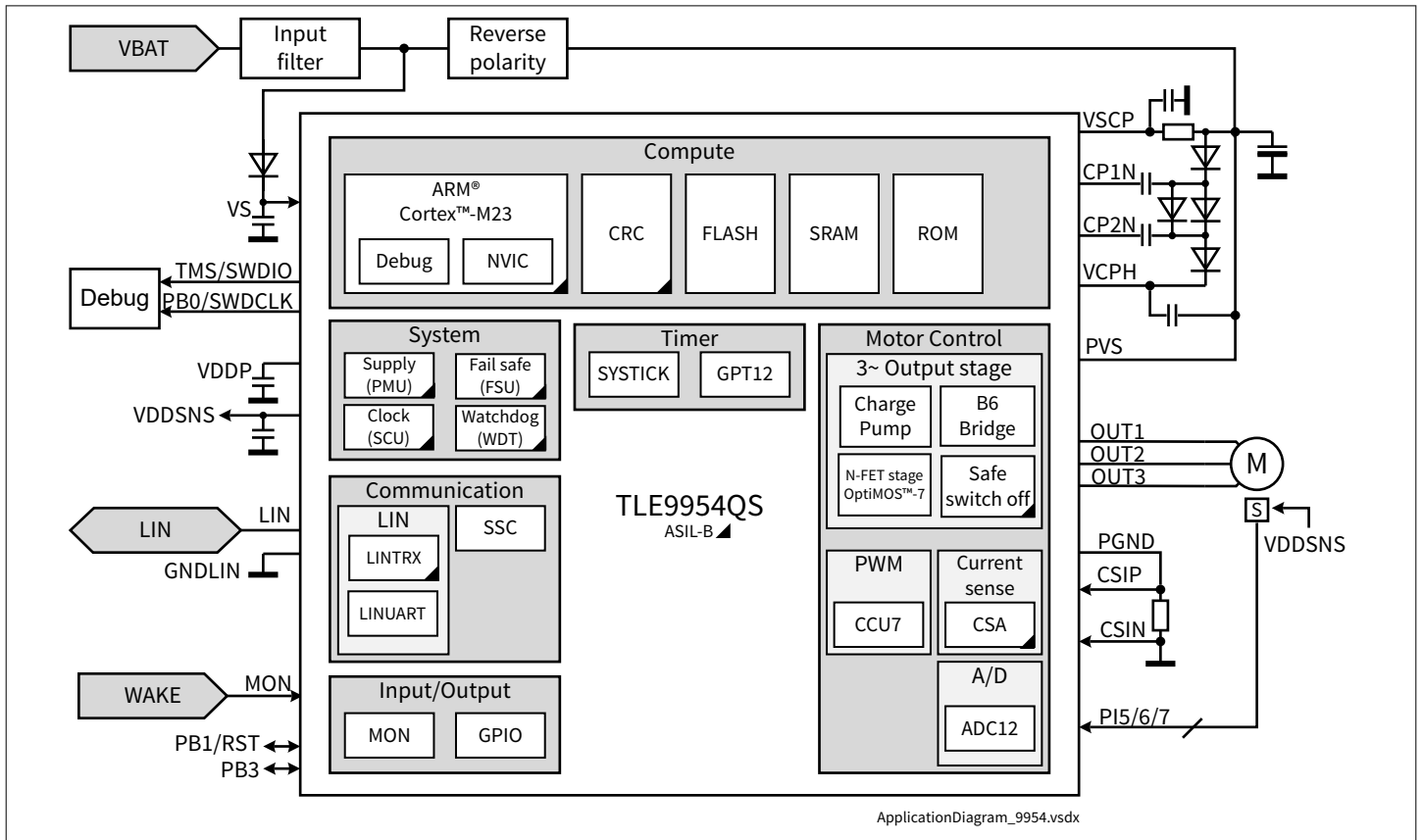
##### Product validation

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



**Description**

**Description**



Product type	Package	Temperature grade	Flash/RAM [KB]	Frequency [MHz]	BDRV
9954AB3AB	PG-LIQFN-58-1	Grade-1	72/6	40	3-phase
9954WB3AB	PG-LIQFN-58-1	Grade-0	72/6	40	3-phase

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Package

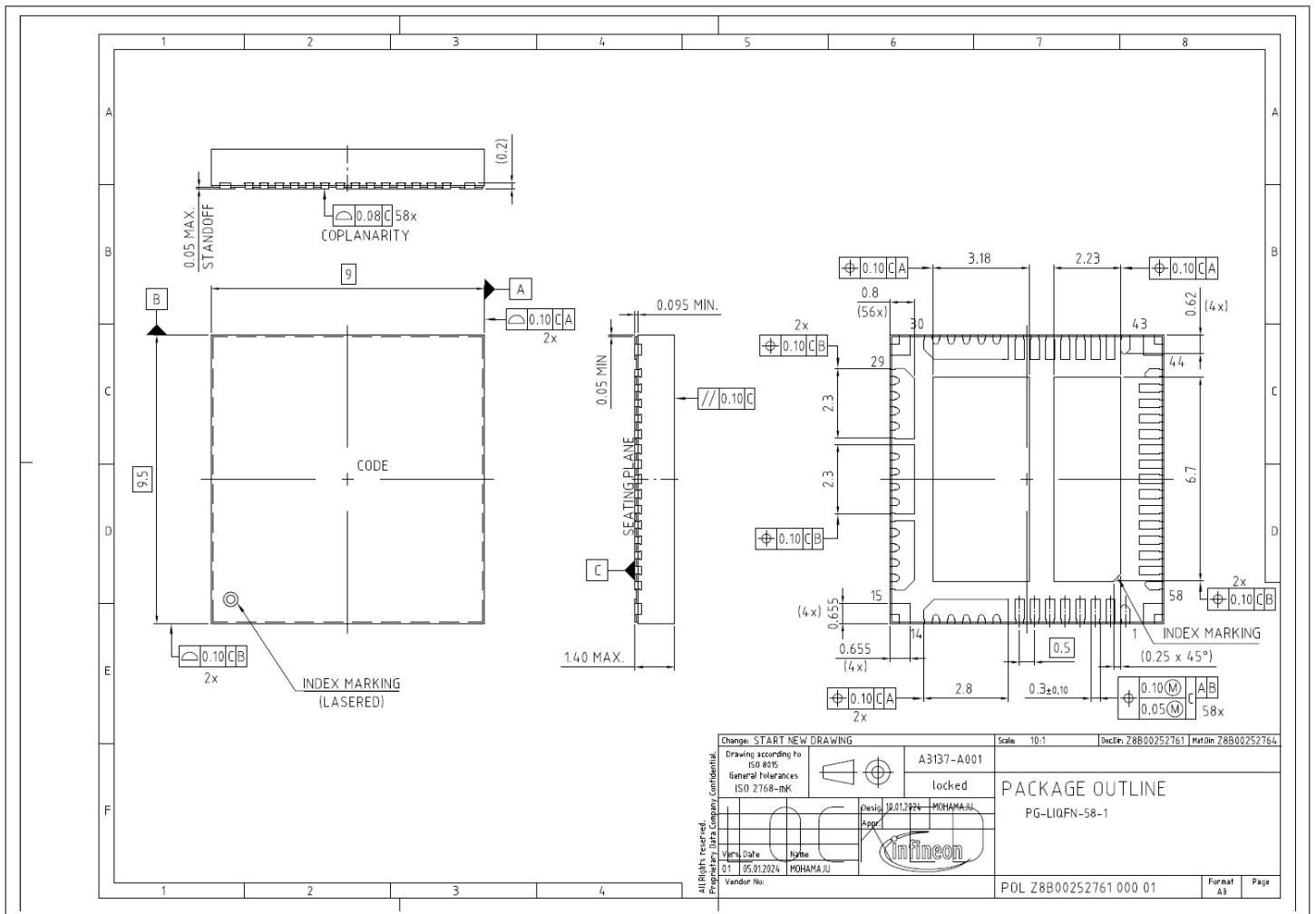
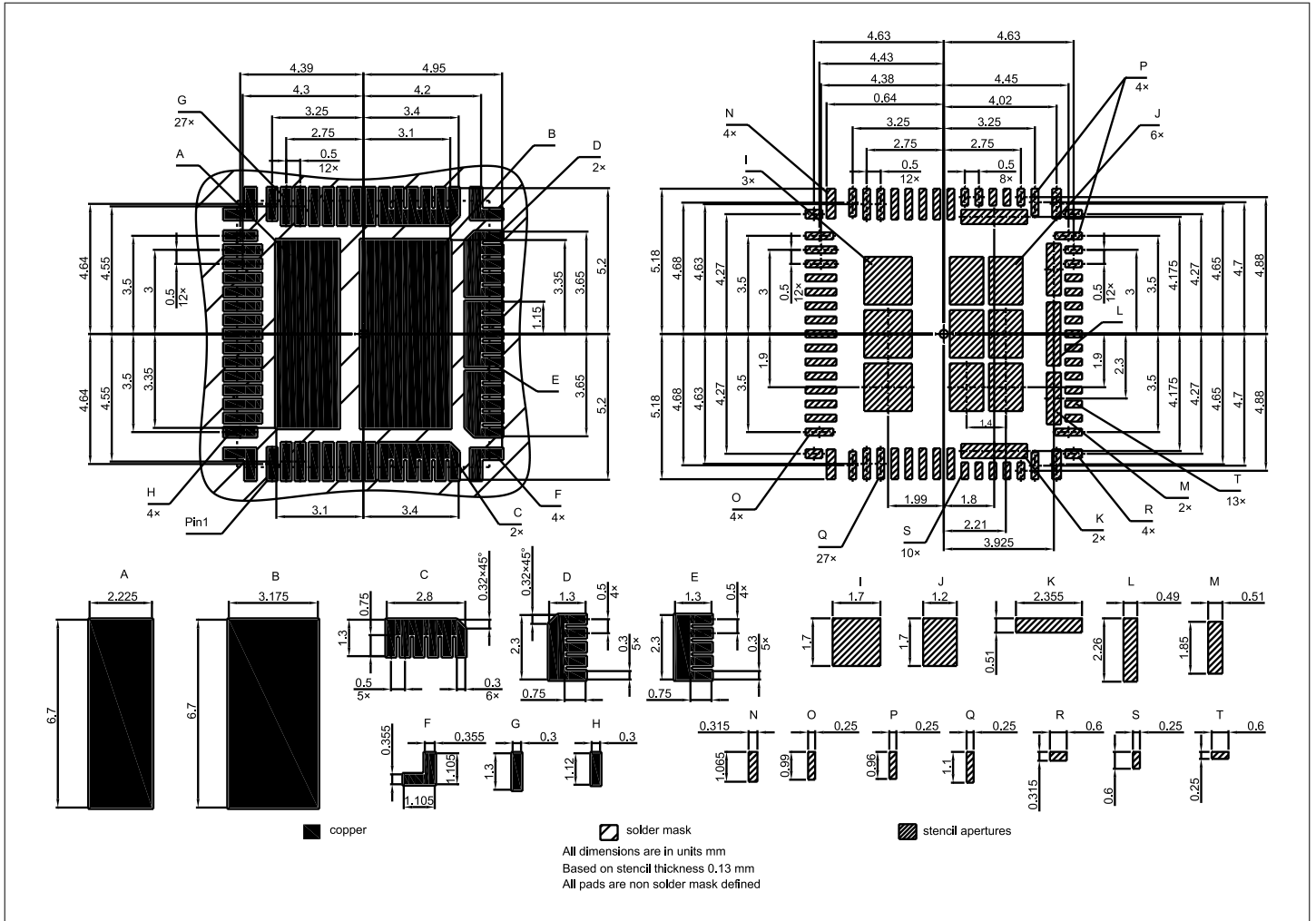


Figure 1 Package dimension PG-LIQFN-58-1

**Package**



**Figure 2 Footprint dimensions PG-LIQFN-58-1**

Package Grade and Moisture sensitivity level according to AECQ100 standard Grade 0, Grade 1 and MSL3.

**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

<b>Revision number</b>	<b>Date of release</b>	<b>Description of changes</b>
Rev. 1.0	2025-04-04	Initial version

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