



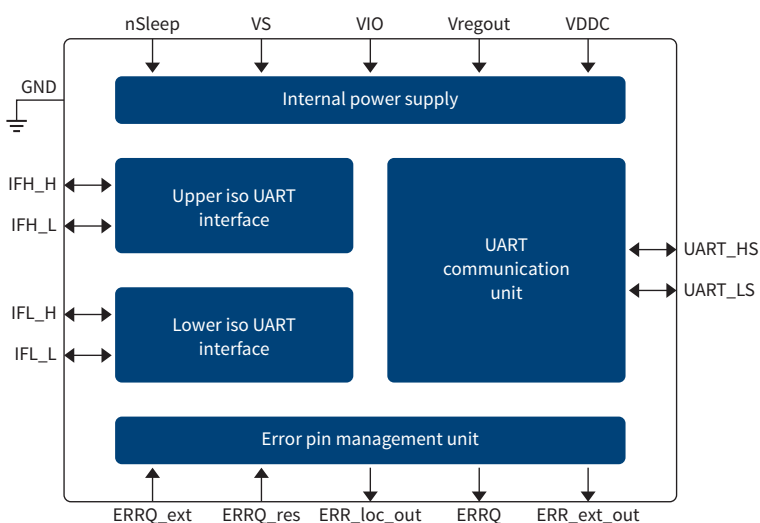
Product brief

Battery management transceiver IC TLE9015QU

The TLE9015QU is a general-purpose transceiver IC to be used in multi-cell battery systems to enable the communication between the main host microcontroller and the slaves in the battery. The IC is designed for Li-Ion battery packs used in Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicles (PHEV), Battery Electric Vehicles (BEV) as well as stationary Lithium-Ion batteries. The TLE9015QU enables communication by connecting several TLE9012AQU devices in a daisy chain inside a Li-Ion battery. By means of its two UART and iso UART interface pairs it can support ring communication ensuring a cost optimized robust system solution. It also enables bidirectional information flow by including an error management unit including several inputs and outputs that are programmable on each TLE9012AQU.

Target applications

- > Hybrid Electric Vehicle (HEV)
- > Plug-in Hybrid Electric Vehicle (PHEV)
- > Battery Electric Vehicle (BEV)
- > Energy Storage System (ESS)
- > Home Energy Storage System (HESS)
- > Commercial, Construction and Agricultural Vehicles (CAV), other small vehicles (e.g. eScooter, eBike, etc.)



Features

- > Two UART ports for serial communication to host microcontroller
- > Two iso UART ports for daisy chain communication inside battery pack
- > Fully transparent communication scheme from μ C to sensing IC
- > Ring mode topology compatible (only 1 device needed)
- > CRC check for communication integrity (no CRC modification)
- > High robustness against external noise
- > General purpose error pin
- > Two external fault inputs with internal latching
- > Error output pin to trigger external microcontroller
- > Internal supply monitoring
- > Low energy sleep mode
- > AEC-Q100 qualified

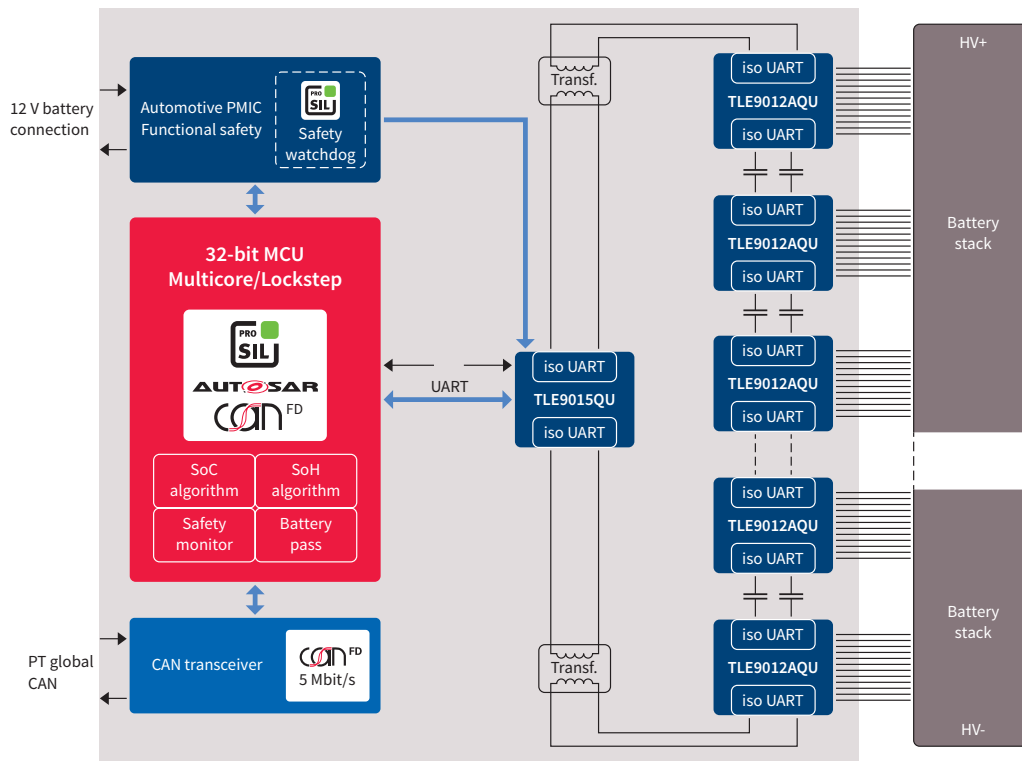
Benefits

- > Robust communication without need of transformers or common mode chokes
- > Master-on-top or master-on-bottom selectable without tedious configuration
- > Bi-directional communication scheme using error management logic
- > Ring mode topology ensuring a cost optimized robust system solution



Battery management transceiver IC TLE9015QU

Application diagram



The battery management system is in charge of monitoring each of the cells included in a battery pack and ensuring that they are operated within the safe operating range.

Parametrics TLE9015QU

Isolated communication interface	Iso UART
Non-isolated communication interface	UART
Voltage class	75 V
Number of UART interfaces	2
Number of iso UART interfaces	2
Communication maximum bandwidth	2 Mbps
Stand-by current	3 μ A
ESD protection	4 kV
T _j max	150 °C
Package	PG-TQFP-48

Orderable Part Number (OPN): TLE9015QUXUMA1

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2020 Infineon Technologies AG.
All Rights Reserved.

Please note!

This Document is for information purposes only and any information given herein shall in no event be regarded as a warranty, guarantee or description of any functionality, conditions and/or quality of our products or any suitability for a particular purpose. With regard to the technical specifications of our products, we kindly ask you to refer to the relevant product data sheets provided by us. Our customers and their technical departments are required to evaluate the suitability of our products for the intended application.

We reserve the right to change this document and/or the information given herein at any time.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our 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 us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.