

1. DESCRIPTION

MTQ1461 is a multi-function System Basis Chip (SBC) sensor designed for CAN automotive applications as main supply for the microcontroller and as interface for a CAN bus network. The chip is capable of withstanding the severe conditions of automotive applications.

MTQ1461 incorporates a variety of functional blocks to support these applications, such as two 5V low-dropout voltage regulators (LDO), a HS-CAN transceiver, a high-voltage GPIO with embedded protective functions and a 16-bit Serial Peripheral Interface (SPI), a configurable timeout/window watchdog circuit, etc.

For applications connected permanently to the battery, the chip operates in low-power modes to minimize current consumption. A wake-up from the low-power mode is possible via a message on the CAN bus, *via* the bi-level sensitive monitoring/wake-up input as well as *via* Cyclic Wake.

2. APPLICATIONS

- HVAC ECU and Control panel
- Light Control Unit (LCU) for front, rear and ambient
- Seat control module and belt pretension
- Steering column and steering lock
- Closure (trunk, sliding door, etc.)
- Gear shifters and selectors
- Smart power distribution modules

3. FEATURES

- Very low quiescent current in Stop/Sleep Mode
- Periodic Cyclic Wake/Sense in SBC Normal/Stop/Sleep Mode
 - 5V LDO 150 mA (250 mA peak) LDO for main supply
 - 5V LDO 100 mA, protection feature for off-board usage
- Supports 5M bit/s FD and features CAN Partial Networking & CAN FD tolerant mode according to ISO 11898-2:2016 & SAE J2284
- Charge pump provides reverse-polarity protection, load switch, and spread spectrum modulation for EMC performance.
- Universal HV wake input for voltage monitoring and wake-up detection
- Configurable GPIO as Fail Output, Wake Input, Low-Side switch or High-Side switch
- HV measurement function as alternative pin assignment
- Fail Output for Fail-Safe signalization
- Configurable wake-up sources
- Reset & Interrupt outputs
- Configurable timeout and window watchdog
- Over temperature and short circuit protection feature
- Optimized for Electromagnetic Compatibility (EMC) and low Electromagnetic Emission (EME)
- AEC Qualified and RoHS compliant

4. FUNCTIONAL BLOCK DIAGRAM

