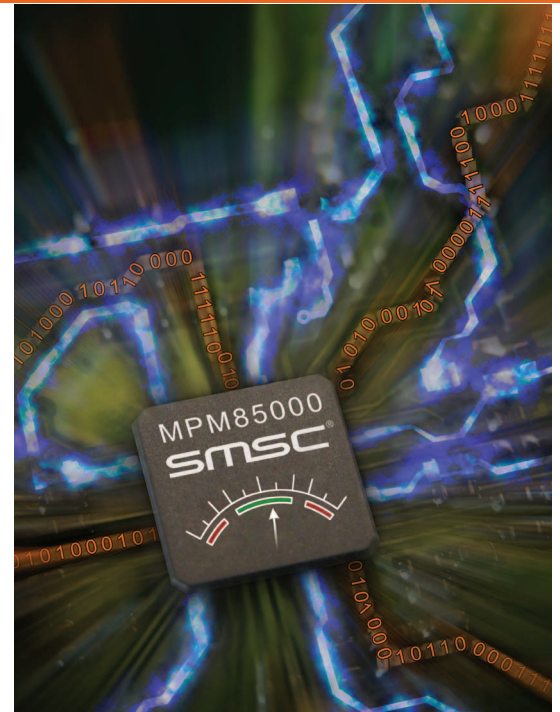


MPM85000

Automotive Diagnostic, Status Monitoring and Power Supply Device

Features

- Low-cost, single-chip solution, including all peripheral MOST network interface functions:
 - Diagnostics
 - Status monitoring
 - Power supply
- Supports all INICs (Intelligent Network Interface Controllers) and NICs (Network Interface Controllers)
- Compliant with the MOST® Specification
- LIN transceiver compliant with the MOST Electrical Control Line (ECL) specification
 - LIN 2.0-compliant
 - Over-temperature, under-voltage and short-circuit protection
 - Supports Ring Break Diagnosis (RBD)
 - For customer-specific wake-up and diagnostic communication
- Status monitoring
 - Power supply monitoring (low-, critical-, and super-voltage detection)
 - Configurable trip point adjustment for battery voltage comparators
 - Switch-To-Power (STP) detection and signaling
 - Status reporting via PSO/PS1 to INIC
 - Activity detection at ePHY (electrical Physical) interfaces
 - Wake-up event detection at ePHY and oPHY (optical Physical) interfaces
 - Temperature monitoring
- System reset generator
- Optional control of the external main power regulators
- Internal 3.3 V micro-power regulator to supply the oPHY receiver
- Typically 45 µA power consumption in Sleep mode
- I²C™-compatible interface (SMBus interface) for:
 - Configuration
 - Status reporting
- Internal One-Time-Programmable (OTP) memory
 - Storage of user-configurable threshold settings for temperature and supply voltage monitoring
- 24-pin (4 x 4 mm²), QFN lead-free, RoHS-compliant package
- Temperature range -40 °C to +105 °C



Ordering Information

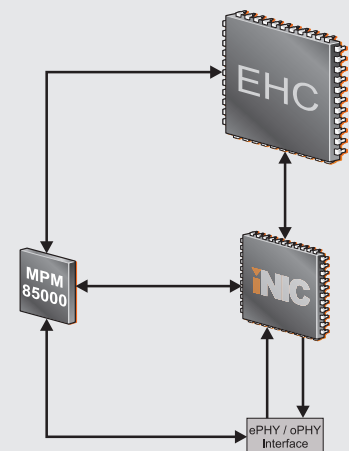
The MPM85000 is available as:

MPM85000 Engineering Sample

Order No. B10253

MPM85000 Tape & Reel

Order No. B10252



Description

The MPM85000 is a low-cost, single-chip power management solution for MOST devices. It combines all of the peripheral functions necessary for a MOST network interface such as diagnostics, status monitoring and power supply. Today, these peripheral functions are typically implemented with several discrete electronic components, which now can be replaced with one IC.

The MPM85000 facilitates the development of generic designs for use in MOST device projects. It helps to reduce the complexity of designs, space on the PCB and shortens development time, helping to reduce costs. Additionally, it eases the specification and reproducibility of a network node's behavior and improves the robustness of a device as well as the complete system. With its small $4 \times 4 \text{ mm}^2$ footprint and 24-pin QFN package, the MPM85000 can be used for all MOST speed grades and physical interfaces (ePHY and oPHY).

On-chip monitoring logic detects switch-to-power and wake-up events. In addition, it observes temperature and up to three configurable voltage levels. Via PS0/PS1, voltage comparator events can be reported to the INIC. The External Host Controller (EHC) can use I²C for configuration and status reporting.

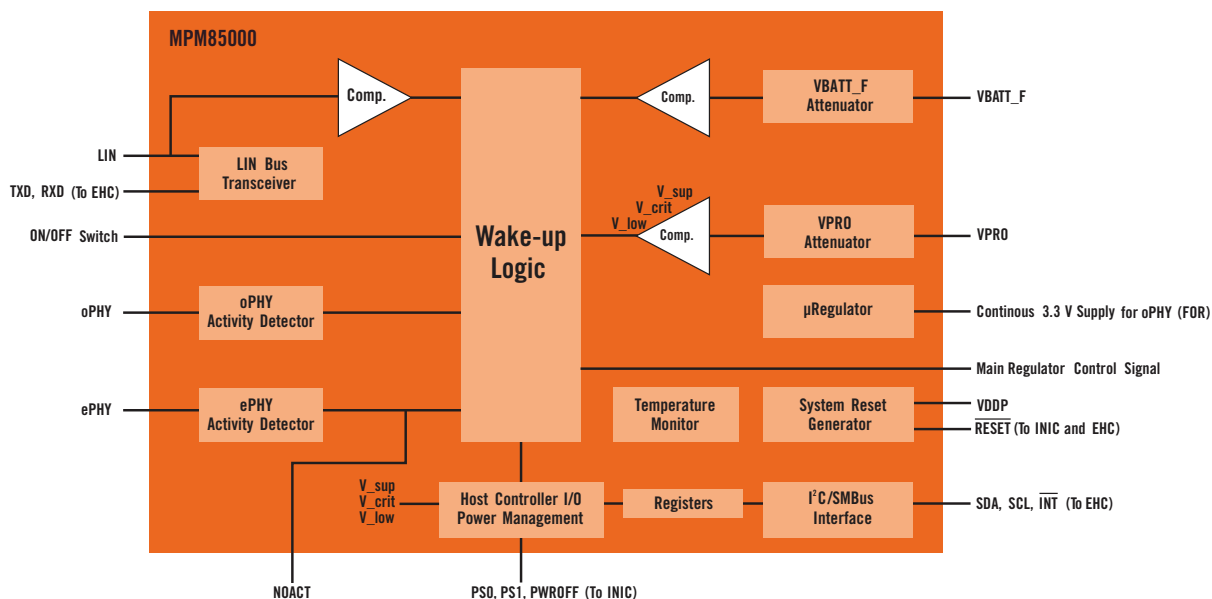
The integrated LIN transceiver supports RBD, wake-up and diagnostic communication according to the ECL specification. The internal power-on-reset generator allows safe power-up for the INIC, the EHC and, if used in MOST25 and MOST150 networks, also for the fiber optic transmitter. When used in a MOST50 network, the MPM85000 supports network activity detection on the ePHY interface.

An internal 3.3 V regulator supplies the power to the fiber optic receiver for oPHY interfaces, and can also be used for INIC persistent memory power.

When in Sleep mode, a MOST device's current can be reduced to 45 μA , which provides a significant step towards lowering the overall power consumption.

To remain independent of a device's specific voltage power supply requirements, the MPM85000 provides no additional application power supply functionality. Therefore, the IC can be used in all types of devices from small node setups to complex head units.

Block Diagram



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