

Robust, Automotive, Low Power 10BASE-T1S MAC-PHY

FEATURES

- ▶ 10BASE-T1S PHY operating modes
 - ▶ Point-to-point half-duplex (≥ 15 m)
 - ▶ Multidrop configuration half-duplex (≥ 25 m, ≥ 8 nodes)
- ▶ PLCA features: PLCA coordinator, burst mode, precedence mode, and multiple PLCA IDs
- ▶ MAC Features
 - ▶ OPEN Alliance 10BASE-T1x MAC-PHY serial interface with cut through or store and forward operation
 - ▶ Transmit priority queues
 - ▶ 16 MAC address filters
- ▶ IEEE 802.1AS / IEEE 1588 support for microcontrollers without TSN support using the gPTP for sensor timestamping and actuator synchronization
- ▶ OPEN Alliance features sleep/wake-up, topology discovery, and advanced diagnostics
 - ▶ Enable output pin (EN) to power down the regulated supply inputs in sleep mode
 - ▶ Support for local (WAKE input pin) and network (wake-up pulse) wake
- ▶ Suitable for 12 V, 24 V, 48 V automotive electrical systems or operating from 5 V levels only
- ▶ Detection capability for over voltage and under voltage events when monitoring the VBAT pin
- ▶ SSC for handling fault conditions
- ▶ Low-current 3.3 V LDO using the LVDD pin as an output
- ▶ Compatible with power delivery over data cable
- ▶ Provides robust EMC/EMI performance
 - ▶ Low cost bus interface network with no external ESD components required
 - ▶ Enhanced noise immunity providing additional performance for noisy environments
- ▶ Low power consumption: maximum current of 50 mA in functional modes of operation and 40 μ A in sleep mode
- ▶ 1.8 V to 3.3 V I/O logic levels with support for 5 V inputs
- ▶ -40°C to $+150^{\circ}\text{C}$ junction temperature range
- ▶ Small package: 4 mm x 4 mm 24-lead LFCSP (QFN) package
- ▶ AEC-Q100 qualified for automotive applications

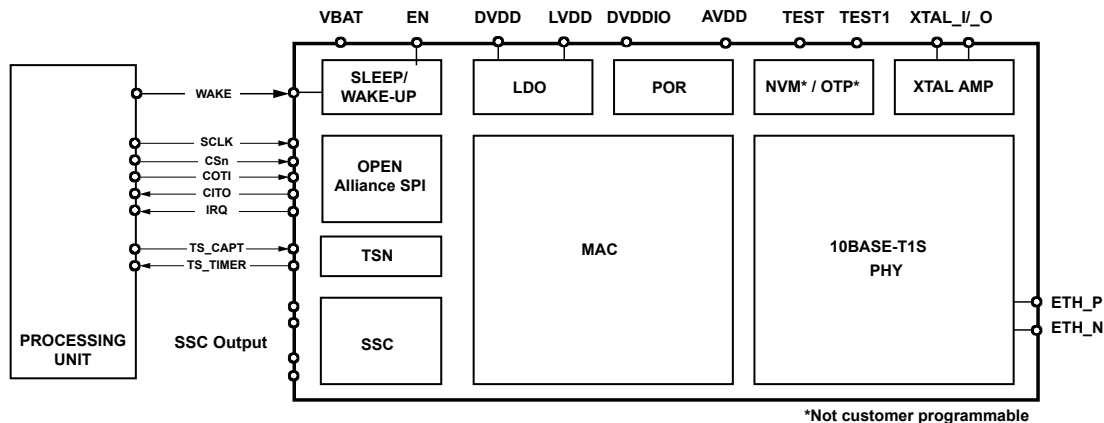


Figure 1. AD3306 Functional Block Diagram

APPLICATIONS

- ▶ Automotive internal and external lighting
- ▶ Automotive body and chassis domain control
- ▶ Automotive sensor and actuator networking
- ▶ Automotive Ethernet based zonal architectures
- ▶ Automotive in-vehicle networking

For more information about the AD3306, contact your local Analog Devices, Inc. representative, sales office at analog.com/sales or contact e2b.support@analog.com.

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