



Analog Solutions—Robust Reliable Performance

MC33901 and MC34901

High-Speed CAN Physical Layer—*Flexible Data Ready*

Industrial Applications (MC34901)

- Transportation
 - Heavy vehicles
 - Agriculture machinery
 - Aviation systems
 - Off-road recreational equipment
 - Trains
 - Electric Vehicles
- Backplanes
- Lift/elevators
- Factory automation
 - Programmable logic control (PLC)
 - Robotics
- Industrial process control
 - Power generation systems

Automotive Applications (MC33901)

- Supports automotive CAN high-speed applications and CAN FD 2M
- Body electronics
- Power train
- Chassis and safety
- Infotainment
- Diagnostic equipment
- Accessories



Overview

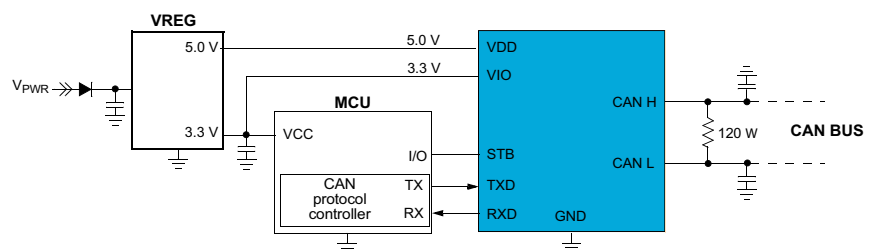
The MC33901 and MC34901 CAN high speed physical layers are Freescale's latest standard cost effective products used to convert digital protocol information into analog CAN communication. They target CAN Flexible Data (FD) operation up to 2 Mbps.

The MC34901 supports long-length CAN node interconnects for industrial applications while the MC33901 has a built-in transceiver dominant timeout feature for automotive applications.

Freescale's robust MC33901 and MC34901 CAN high-speed physical layers offer extremely low quiescent current while exceeding the most stringent EMC/ESD requirements without added circuitry. The MC33901 and MC34901 allow for the implementation of a cost-effective system. These parts minimize external circuitry and save system cost including the elimination of common mode choke and other components.

It's easy to get started with the with the KIT33901EPEVB and KIT34901EPEVB evaluation boards. These small evaluation boards can be used for quick application prototyping and demonstration of the MC33901 and MC34901 products respectively, for fast design and quick time to market.

Simplified Application Drawing



Industry-Specific Products

	Auto	Industrial
Wake-Up	MC33901W	MC34901W
Standard	MC33901S	MC34901S

Features

- Exceeds stringent EMC and ESD requirements without added choke
- Excellent EMC performance supports CAN FD up to 2 Mbps
- Lowest quiescent current, down to 8 μ A in low-power modes
- Low-power mode and wake-up capability
- Built-in Tx Dominant Timeout feature for automotive applications (MC33901)
- Long-length interconnect support for industrial applications (MC34901)
- Low emission design combined with high immunity for optimum EMC performance
- Invisible on CAN bus when unpowered (leakage <10 μ A)
- Available in small footprint package (SO8)
- Pin-to-pin and function compatible with market standard solutions

Freescale: A Leader in Analog Solutions

Expanding on more than 30 years of innovation, Freescale is a leading provider of high-performance products that use SMARTMOS technology combining digital, power and standard analog functions. Freescale supplies analog and power management ICs that are advancing the automotive, consumer, industrial and networking markets. Analog solutions interface with real world signals to control and drive for complete embedded systems.



MC33901/MC34901 High Speed CAN Physical Layer

Features	Benefits
High-level EMC performance without choke	Enables system cost reduction
ESD robustness	Reduced system cost—no external protection components
CAN FD operation up to 2 Mbps	Increased bandwidth
Ultra-low quiescent current (8 μ A typical)	Allows CAN high-speed protocol in power sensitive applications
5 V and 3.3 V Compatible I/O with auto-detect	Allows use in both 3.3 V and 5 V systems without added circuitry
ISO11898-2 and -5 compatible	Industry standard compliance, pin-for-pin compatibility
Easy-to-use EcoSystem with simple evaluation board (coupon)	Easy-to-use plug and play tools, accessible quickly
Industry-specific automotive and industrial feature sets	Tx Dominant Timeout feature for automotive Long-length interconnect support for industrial

Documentation

Freescale Document Number	Title	Description
MC33901_34901	High Speed CAN Transceiver	Data Sheet
SG1002	Analog Product Selector Guide	Selector Guide
SG187	Automotive Product Selector Guide	Selector Guide
SG200	Analog and Power Management Industrial Selector Guide	Selector Guide

Product Longevity Program

These products are/ or may be supported by Freescale's Product Longevity Program. For Terms and Conditions and to obtain a list of available products please see:

Freescale.com/productlongevity



For more information, please visit freescale.com/analog

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