MC33661

Local Area Network (LIN) Enhanced Physical Interface With Selectable Slew-Rate

Applications

- Automotive Systems
- Robotic Systems
- Small DC Motor Control
- Stepper Motor Control
- Marine Systems

Overview

Local interconnect network (LIN) is a serial communication protocol designed to support automotive networks in conjunction with controller area network (CAN). As the lowest level of a hierarchical network, LIN enables cost-effective communication with sensors and actuators when all the features of CAN are not required.

The MC33661 is a physical layer component dedicated to automotive LIN sub-bus applications. It offers slew-rate selection for optimized operation at 10 kbps and 20 kbps, fast baud rate (above 100 kbps) for test and programming modes, excellent radiated emission performance, and safe behavior in the event of LIN bus short-to-ground or LIN bus leakage during low-power mode.

The MC33661 is compatible with LIN Protocol Specification 2.0.

MC33661 Simplified Application Drawing
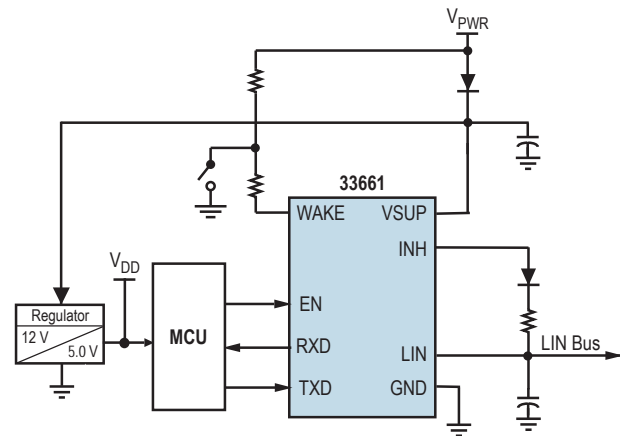
Performance	Typical Values
Bus Output	LIN
Data Rate	10 kbps to 20 kbps +100 kbps option
Operating Voltage	6.0 to 18 V
Sleep/Standby Current	< 8.0 µA
ESD (LIN Bus Terminal)	$\pm$ 5000 V
Ambient Operating Temperature	-40 °C $\leq T_A \leq$ +125 °C
Junction Operating Temperature	-40 °C $\leq T_J \leq$ +150 °C

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Features

- Operational from V_{SUP} 6.0 V to 18 V DC, functional up to 27 V DC, and handles 40 V during load dump
- Active bus waveshaping offering excellent radiated emission performance
- 30 kΩ internal pullup resistor
- LIN bus short-to-ground or high leakage in Sleep mode
- -18 V to +40 V DC voltage at LIN terminal
- Local and remote wake-up capability reported by INH and RXD terminals
- 5.0 V and 3.3 V compatible digital inputs without any external components required
- Additional devices available for comparison in Analog Product Selector Guide - SG1002 and Automotive Product Selector Guide - SG187

Benefits

- Low noise emission serial interface
- Low system cost
- Industry Standard Communication protocol
- Bus diagnostic and wakeup

Questions

- Do you need a low speed serial communication interface?
- Do you need a communication interface compliant to LIN specifications?
- Do you need to reduce the noise emission on your network?
- What is your maximum communication speed?
- What is the maximum supply current?

Protection

Protection	Detect	Shut Down	Auto Retry
Under-voltage	•		
Over-temperature	•	•	
Reverse Battery	•	•	•
Ground Disconnection	•		•
Over-current	•		•

Ordering Information

Device (for Tape and Reel, add an R2 suffix)	Temperature range (T_A)	Package
MC33661PEF	-40 °C $\leq T_A \leq$ +125 °C	8 SOICN

Documentation

Document Number	Title	Description
MC33661	Data Sheet	Local Area Network (LIN) Enhanced Physical Interface with Selectable Slew-Rate
SG1002	Selector Guide	Analog Product Selector Guide
SG187	Selector Guide	Automotive Product Selector Guide
AN2467	Application Note	Power Quad Flat No-lead Package
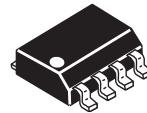
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8-PIN SOICN

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