

MC33660

ISO K Line Serial Link Interface

Applications

- Farm Equipment
- Automotive Systems
- Industrial Equipment
- Robotic Equipment
- Applications where Module-to-Module Communications is required
- Marine and Aircraft Networks

Description

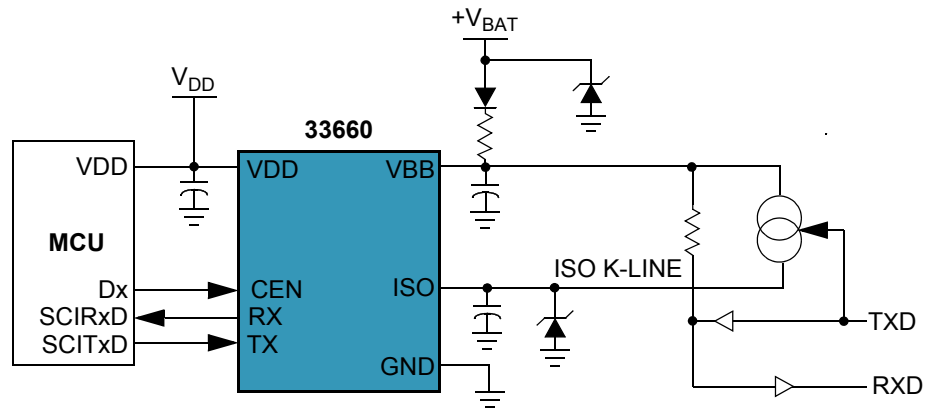
The 33660 is a serial link bus interface device designed to provide bi-directional half-duplex communication interfacing in automotive diagnostic applications. It is designed to interface between the vehicle's on-board microcontroller, and the systems off-board microcontroller in the vehicle via the special ISO K line.

The 33660 is designed to meet the Diagnostic Systems ISO9141 specification. The device's K line bus driver's output is fully protected against bus shorts and over-temperature conditions.

Although the 33660 is principally designed for automotive applications, it is suited for other serial communication applications.

It is parametrically specified over an ambient temperature range of $-40\text{ }^{\circ}\text{C} \leq T_A \leq +125\text{ }^{\circ}\text{C}$ and $8.0\text{ V} \leq V_{BB} \leq 18\text{ V}$ supply. The economical SO-8 surface-mount plastic package makes the 33660 very cost effective.

MC33660 Simplified Application Drawing



Performance	Typical Values
Bus Outputs	ISO-9141
Data Rate	to 50 kB/s
Operating Voltage	8.0 - 18 V
Sleep/Standby Current	50 μ A
ESD	$\pm 2000\text{ V}$
Operating Temperature	$-40\text{ }^{\circ}\text{C} \leq T_A \leq +125\text{ }^{\circ}\text{C}$

Features

- Operates over a wide supply voltage range of 8.0 to 18 V
- Operating temperature of -40 to +125 °C
- Interfaces directly to standard CMOS microprocessors
- ISO K line pin protected against shorts to battery
- Thermal shutdown with hysteresis
- ISO K line pin capable of high currents
- ISO K line can be driven with up to 10 nF of parasitic capacitance
- 8.0 kV ESD protection capability using passive components
- Standby mode: No V_{BAT} current drain with V_{DD} at 5.0 V
- Low current drain during operation with V_{DD} at 5.0 V

Questions

- What type of module-to-module communication protocol are you using?
- Do you need a robust half-duplex bidirectional communication between two modules?
- Do you need a communication system that operates at rates up to 50 kB/s?
- Do you need a communication system that is compliant with on-board Diagnostics (OBD) requirements as set forth by the California Air Resources Board (CARB) and the Federal Government?

Customer Benefits

- Lower system cost with reduced part count with simple hookup
- Industry standard communication protocol
- Faster design time

Protection	Detect	Limiting	Shut Down	Status Reporting
Over-current/SC	•	•		
Over-temperature	•		•	•

Ordering Information

Device	Temperature Range	Package
MC33660EF/R2	-40 °C to T_A +125 °C	8 SOICN

Documentation

Document Order	Description
MC33660	Data sheet order number
SG1002	Analog Product Selector Guide
SG187	Automotive Product Selector Guide
AN2409	Small Outline Integrated Circuit Fine Pitch Package (SOIC)

8 SOICN



EF SUFFIX (PB-FREE)
98ASA10774D
8-PIN SOICN

Learn More: For current information about Freescale products, please visit www.freescale.com

Freescale and the Freescale logo are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat & Tm. Off. SMARTMOS is a trademark of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners. © Freescale Semiconductor, Inc., 2011. All rights reserved.