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 ºC $\leq T_A \leq$ +125 ºC and 8.0 V $\leq V_{BB} \leq$ 18 V supply. The economical SO-8 surface-mount plastic package makes the 33660 very cost effective.

MC33660 Simplified Application Drawing
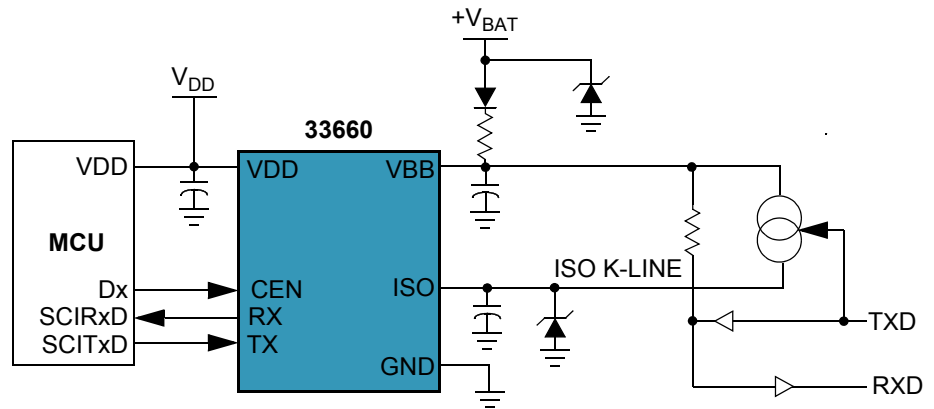
Performance	Typical Values
Bus Outputs	ISO-9141
Data Rate	to 50 kB/s
Operating Voltage	8.0 - 18 V
Sleep/Standby Current	50 µA
ESD	± 2000 V
Operating Temperature	-40 °C ≤ T_A ≤ +125 °C

freescale

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