



Digital Isolators

Silicon Labs is considered the inventor of digital capacitive insulators based on CMOS technology. This technology is becoming increasingly important compared to the opto-electronic solutions that have been established on the market for years. The semiconductor company from Austin (USA, Texas) is one of the top 3 manufacturers worldwide in the field of digital isolators.



High speed

Data rates from DC up to 150 Mbit/s (Si86xx)

Extreme reliability

No degradation in signal path

Up to 60 years lifetime at full voltage (SiO₂)

Operating temperature range: -40°C to 125°C

Excellent immunity

CMTI (Common Mode Transient Immunity) >100kV/μs (Si86xxT)

Various options

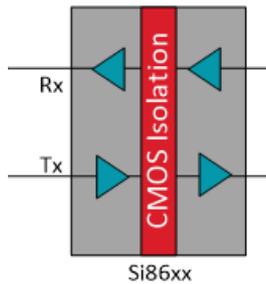
Forward and reverse channels, as well as bidirectional channels in one package (Si86xx)

Integrated control for isolated DC/DC converter; P_{OUT} = 3 W to 5 W (Si88xxx)

LED emulation with optocoupler replacement (Si87xx)

Safety first: No compromises in the safe galvanic isolation of circuits, even under the most extreme application conditions in industry and automotive. The isolation products from Silicon Labs meet the well-known international safety certificates and standards (UL, VDE, CSA, CQC,...). For automotive applications there is an AEC-Q100 qualification.

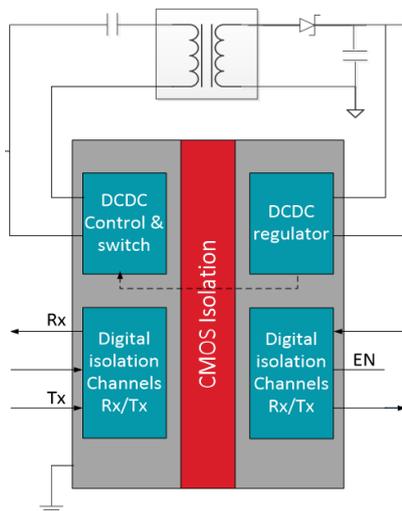
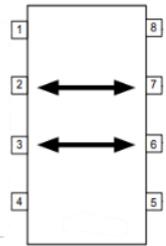
Si86xx-Serie



The Si86xx series offers numerous options regarding the forward and reverse channels, as well as the predefined starting position (H or L level). Transmit (Tx) and receive (Rx) direction, as well as an enable can be mapped with a single isolator. The operating voltage range from 2.5V to 5.0V allows a smooth level shift between both sides of the isolator. The compatibility to Texas Instruments and Analog Devices is given.

Si860x-Serie

Derivatives of the Si860x series have several independent, bidirectional isolation channels for I²C signals (SCL/SDA) - SMBus. The maximum transmission speed is 1.7 MHz. Typical applications are battery management systems, charging systems, power infrastructure in telecommunication technology.



Si88x-Serie

The Si88x series offers a special feature. In addition to the signal isolation via up to two forward and backward channels, the derivatives of this series have an integrated DC/DC converter, which can supply the "hot side" or "cold side" of the circuit with operating voltage depending on the point of view. Only a few external components are needed to build the isolated flyback converter with $P = 3 \text{ W}$. A flyback transformer and a fast rectifier diode (Schottky diode). The switching transistor and the feedback channel for the feed-back loop are already integrated in the Si88x. By using an external power MOSFET, output powers of up to 5W can be provided. Peak efficiencies of up to 83% are possible with this version. Due to the high pulse strength

with a CMTI of typically $100\text{kV}/\mu\text{s}$ and the excellent, low EMC signature, this series is especially recommended for applications with high EMC requirements.

Si87xx-Serie

Isolators of the Si87xx series serve as a direct replacement for existing single-channel IC like optocoupler designs with open collector output and transfer rates of up to 15 Mbit/s. These can be converted into a much more reliable isolator design as quickly as possible. The transmit LED is replicated by an LED emulator input.

