NXP RTC PCF85063

Miniaturized, state-of-the-art RTC

Housed in a tiny leadless package and available with a mix of advanced options, this energy-efficient RTC lets you put full-featured timing functions in a very small space.

KEY FEATURES

- Tiny leadless package with 0.5 mm pitch
- Standard SO8 and TSSOP8 packages for industrial applications
- Time and date from seconds to years
- Electronic frequency tuning via command
- Supports interrupts every 30 or 60 seconds
- General-purpose RAM byte
- Clock out from 1 Hz to 32.768 kHz
- Oscillator option for low-power quartz (CL = 7 pF)
- Large voltage operating range (V_{DD} = 0.9 to 5.5 V)
- Ideal for battery-powered operation (I_{DD} = ~0.2 μA)

APPLICATIONS

- Inkjet and laser printers
- Self-care medical devices
- Digital still and video cameras
- Handheld and mobile devices
- Gaming, toys
- Industrial equipment
- Home automation
- Alarm systems
- Eco-friendly heating control
- Printers, copiers

The NXP PCF85063 offers precise timing in a small, low-power format and is well suited for a wide range of applications.

It can be used to perform the standard functions of a real-time clock (RTC), tracking the actual time and date or acting as a reference timer. To support power management, the PCF85063 can be used to wake the microcontroller from hibernation mode, and in systems that use a PLL, it can serve as a system reference clock for the PLL input. The PCF85063 can also be used as a Watchdog or countdown timer, or as an activation timer to start measurements or initiate other functions.

There are several versions available. The -TP version tracks time and date and has an I^2C Fast-mode (Fm) interface. It offers electronic tuning and can be configured for a frequency output or an interrupt every 30 or 60 seconds, and is housed in a tiny HWSON-8 package that measures only 2 x 3 x 0.8 mm.
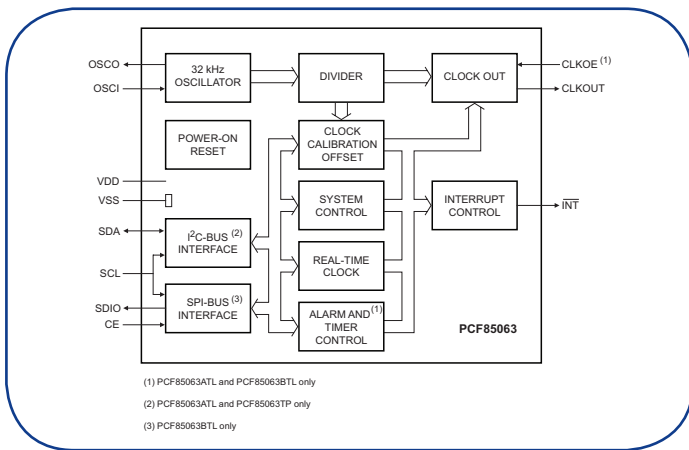
The -AT, -ATT, -ATL, and -BTL versions add an alarm facility, a countdown timer, and a clock-out enable input pin.

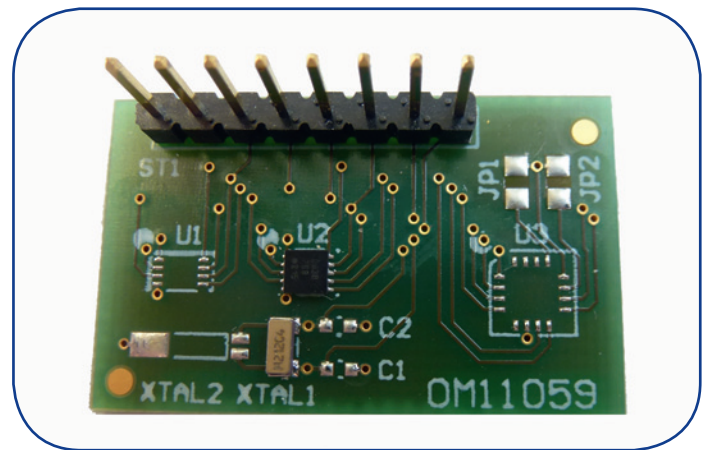The -BTL version replaces the I²C Fm interface with a 3-line SPI interface.

DEMO BOARDS

The PCF85063 is supported by two demo boards. The OM11059A is for versions that use the I²C-bus, and the OM11059 is for the SPI-bus version. Both boards are shipped ready to use, with a quartz. All the designer needs to do to begin work is supply power and use the serial interface to initiate communications.
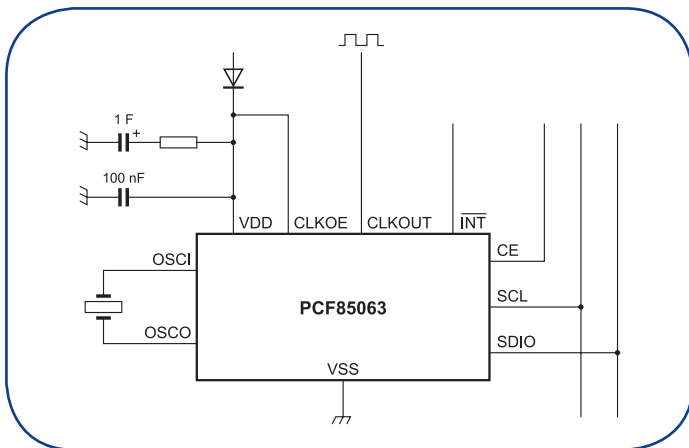
Product number	PCF85063AT	PCF85063ATT	PCF85063TP	PCF85063ATL	PCF8506BTL
Alarm facility	X	X	-	X	X
Count down timer	X	X	-	X	X
Clock –out enable	Via command	Via command	Via command	Via command or input pin	Via command or input pin
I²C-bus (Fast-mode 400 kHz)	X	X	X	X	-
SPI bus (3 lines, 7 MHz)	-	-	-	-	X
Package	SO8	TSSOP8	HWSON8 2 x 3 x 0.8 mm	DFN2626-10 2.6 x 2.6 x 0.5 mm	DFN2626-10 2.6 x 2.6 x 0.5 mm

(1) PCF85063ATL and PCF85063BTL only
(2) PCF85063ATL and PCF85063TP only
(3) PCF85063BTL only

PCF85063 block diagram

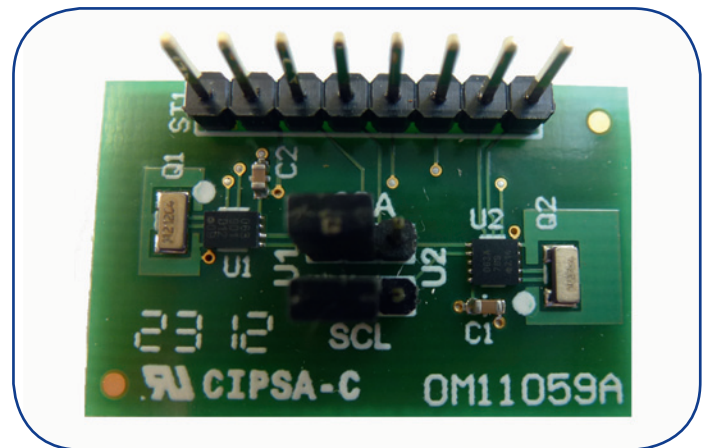**PCF85063 demo board SPI (OM11059)**

PCF85063 application

PCF85063 demo board I²C (OM11059A)