



NXP RTC
PCA85073
PCA8565
PCA21125
PCA2129

Real-time clocks for automotive applications

In automotive applications, exposure to extreme temperatures presents a serious challenge to accurate timing. NXP has the solution.

PCA85073A NEW

- ▶ -40 to +105 °C
- ▶ Interface: I²C-bus, 400 kHz
- ▶ Low power consumption < 300 nA
- ▶ For dashboards and infotainment systems
- ▶ For accurate and consistent timing

PCA8565

- ▶ -40 to +125 °C
- ▶ Interface: I²C-bus, 400 kHz
- ▶ For battery management
- ▶ For engine and motor control
- ▶ For critical applications

PCA21125

- ▶ -40 to +125 °C
- ▶ SPI-bus, 6 MHz
- ▶ For battery management
- ▶ For engine and motor control
- ▶ For critical applications

PCA2129

- ▶ -40 to +85 °C
- ▶ I²C-bus, 400 kHz & SPI-bus, 6.5 MHz
- ▶ For dashboards and infotainment systems
- ▶ High timing accuracy via temperature-compensated oscillator
- ▶ All clocks are exact and synchronous

Application	PCA85073	PCA8565	PCA21125	PCA2129T
Dashboard / infotainment	Ideal fit	Good fit	Good fit	Ideal fit
Battery charging	Good fit	Ideal fit	Ideal fit	Good fit
System timing	Ideal fit	Ideal fit	Ideal fit	Ideal fit
Accurate time distribution	Good fit			Ideal fit
Temperature range	-40 to +105 °C	-40 to +125 °C	-40 to +125 °C	-40 to +85 °C
AEC-Q100 grade	2	1	1	3



Our real-time clocks (RTCs) offer superior performance in critical automotive applications

- Consistent timing
- Independent timer
- Independent watchdog function for system supervision
- Periodic interrupts to initiate processes
- Alarm function with interrupt
- Complete date and time from seconds to years
- Time-stamping events, independent of microcontroller
- Timing under severe conditions, e.g. up to +125 °C
- Electric tuning, with no external capacitors needed for PCA85073 and PCA2129
- Highly accurate and uninterrupted time tracking using temperature-compensated quartz oscillator and battery backup system
- Oscillator optimized for quartz crystals in automotive-grade ceramic package
- Interfaces to I²C and/or SPI bus

AUTOMOTIVE RTC SELECTION GUIDE

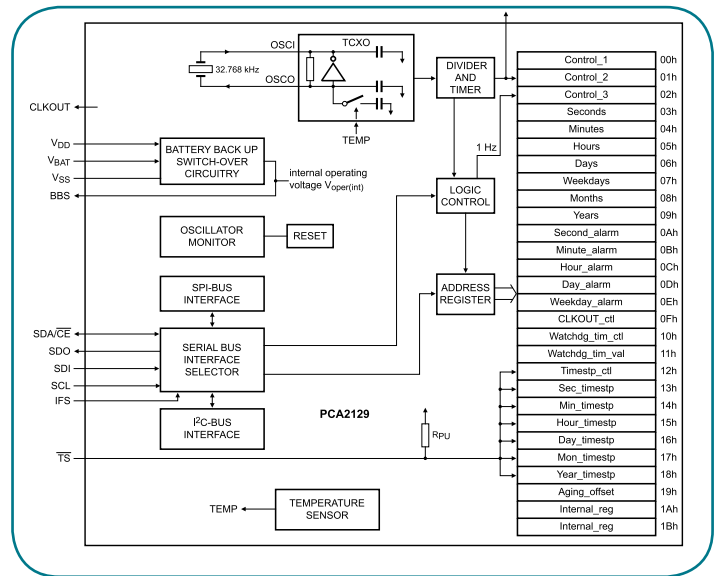
Product number	PCA85073ADP/Q900	PCA8565TS/1	PCA21125T/Q900/1	PCA2129T/Q900/2
Interface	I ² C-bus	I ² C-bus	SPI	SPI, I ² C-bus
Temperature range	-40 to +105 °C	-40 to +125 °C	-40 to +125 °C	-40 to +85 °C
Special feature	Low power	Very wide temperature range	Very wide temperature range	High timing accuracy
Demo board* User manual	OM13515 UM10788 (2)			OM13513 UM10762
Package	TSSOP8	TSSOP8 (1)	TSSOP14	SO161

* The I²C-bus demo boards are supported by the I²C-bus USB dongle OM13518 (User Manual UM10789)

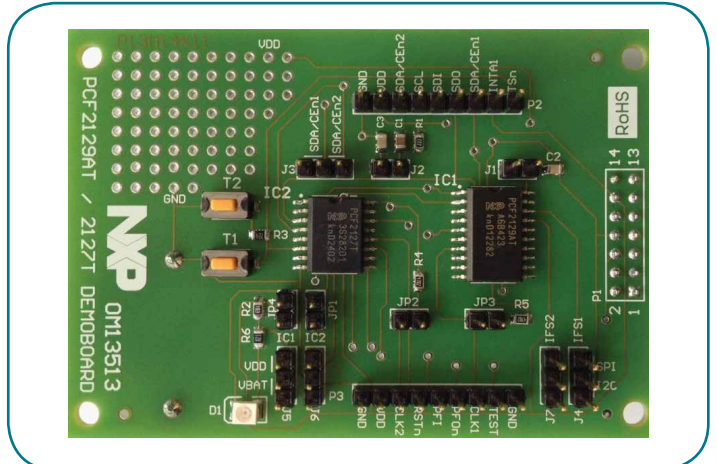
(1) Bare Die PCA8565U/5BB/1

(2) Use OM13515 Eval Board - electrically the PCA85063A and PCA85073A are identical

PCA2129 BLOCK DIAGRAM



OM13513 EVALUATION BOARD FOR PCF2129AT AND PCF2127T



OM13515 EVALUATION BOARD FOR PCF85063

