

**Real Time Clock**

**Applications:**

*Cash Registers*

*Security Access Controllers, Door Controllers*

*Public Phone Bill Meters*

*Smart Card Payphones*

*Time Recorders*

*Mobile Telephones*

*IC Water-Flow Meters*

*IC Gas Meters*



**Part Numbering Example: CT1380 – Z3C**

<b>CT1380-</b>	<b>Z</b>	<b>3</b>	<b>C</b>
<b>SERIES</b>	<b>ADDED FEATURES</b>	<b>PACKAGE</b>	<b>OPERATING TEMP</b>
CT1380	Z = Tapes & Reels	3 = 8DIP	C = 0°C to +70°C

**Specifics**

- Provides year, month, day, weekday, hours, minutes and seconds based on 32.768 kHz quartz crystal
- Uses less than 400nA at 2.0 volts
- Serial I/O transmission: Simple 3–wire interface
- Single–byte or multiple–byte (burst mode) data transfer for read or write of clock
- Clock registers store BCD format
- 8–pin DIP
- 2.0–5.5 volt full operation
- Maximum input serial clock: 500kHz at VDD =2V, 2MHz at VDD =5V TTL–compatible (VDD = 5V)

**General Description**

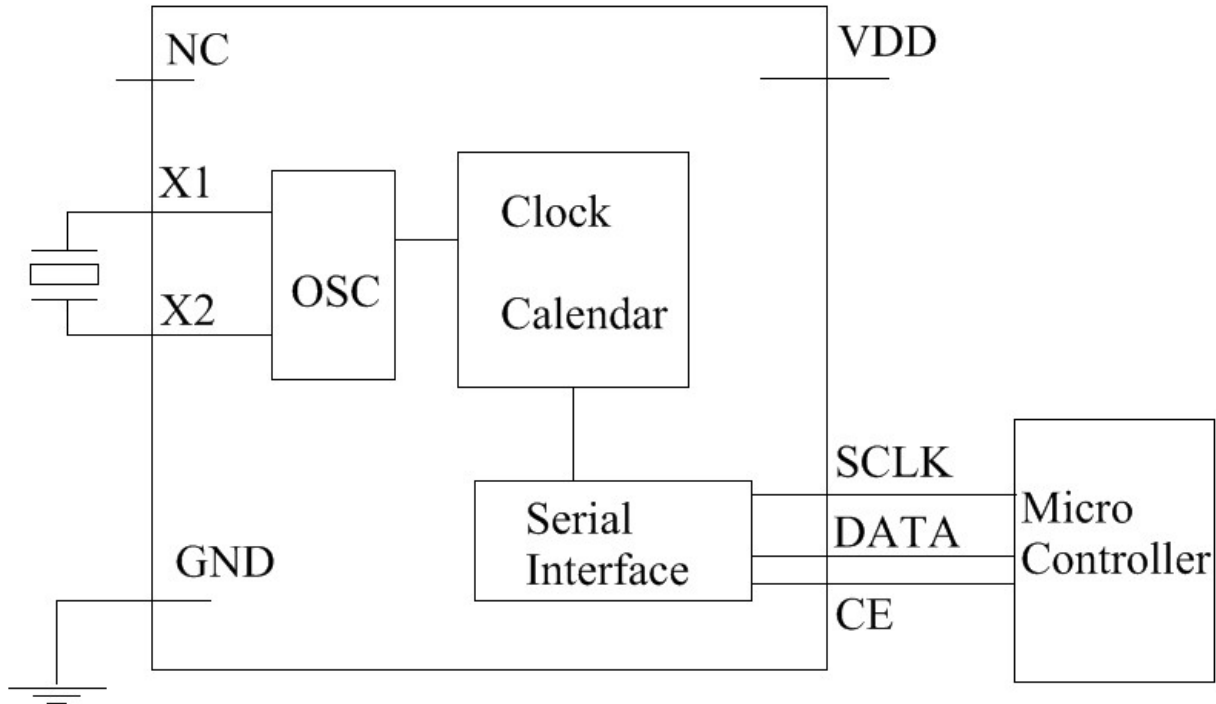
The CT1380 is a serial timekeeper IC that provides seconds, minutes, hours, day, date, month, and year information. It communicates with a microprocessor via a simple serial interface. The end of the month date is automatically adjusted for months with fewer than 31 days, including corrections for leap year. The clock operates in either the 24–hour or 12–hour format with an AM/PM indicator.

Interfacing the CT1380 with a microprocessor is simplified by using synchronous serial communication. Only three wires are required to communicate with the clock: (1) CE(Chip Enable), (2) I/O (Data line), and (3) SCLK (Serial clock). Data can be transferred to and from the clock one byte at a time or in a burst mode. The CT1380 is designed to operate on very low power.

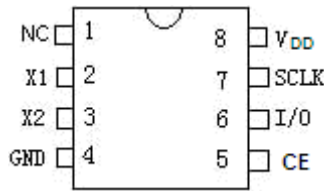


**Real Time Clock**

*Block Diagram*



*Pin Assignment*



**CT1380 — 8DIP**

*Pin Description*

Pin No.	Symbol	Description
1	NC	No Connection
2	X1	Connections for a standard 32.768kHz quartz crystal
3	X2	Connections for a standard 32.768kHz quartz crystal
4	GND	Ground
5	CE	The Chip Enable signal must be asserted high during a read or a write,
6	I/O	The I/O pin is the bi-directional data pin for the 3-wire interface
7	SCLK	The SCLK pin is used to synchronize data movement on the serial interface
8	VDD	Power Supply Pin

