



Real Time Clock with I2C or SPI, Crystal Temperature Compensation, Power Supply Switchover and Battery Trickle Charger

General Description

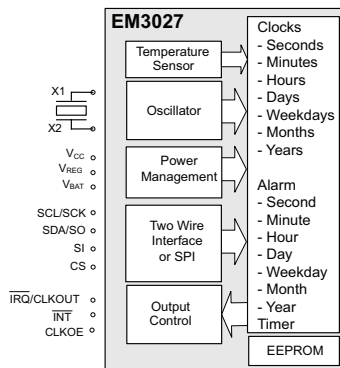
The EM3027 is a Real Time Clock IC with an I2C or SPI Serial Interface with voltage/temperature sensing, switch circuitry, trickle charger and low power oscillator.

RTC functions include counters for seconds, minutes, hours, days, weekdays, month days, months and years with leap-year compensation. It features also programmable alarm for time events (minutes, hour, days, weekdays and month).

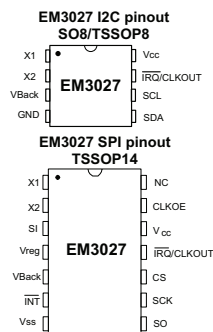
Benefits

- | High precision frequency
- | Battery or super-cap backup provides full time keeping security.
- | High flexibility with two standard interfaces: I2C and SPI
- | 32.768kHz clock output (with enable)

Block Diagram



Pin Out



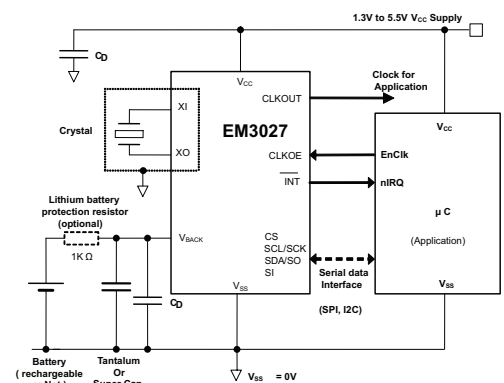
Features

- | Crystal frequency Temperature compensation
- | Very high frequency stability <10 ppm over full voltage and temperature ranges when device is calibrated with crystal
- | -40°C to +125°C operating temperature
- | 600nA typical supply current
- | 1.3V to 5.5V supply voltage
- | I2C or SPI serial interface
- | Temperature sensor
- | Readable thermometer sensor
- | Battery or super-cap backup with automatic switchover circuitry and trickle charger
- | 16 bit timer
- | One EEPROM Byte and eight RAM Bytes for Application
- | Programmable clock output for peripheral devices (32.768kHz, 1024Hz, 32Hz, 1Hz)
- | Alarm and timers functions open-drain interrupt output

Applications

- | Industrial metering and process control
- | Point of sales terminals
- | Vending machine
- | White goods
- | Medical equipments

Typical Application



Ordering Information

Part Number	Package	Functional Temperature	Interface	Delivery Form	Marking	
					Line 1	Line 3
EM3027IDXWS8		-40 +125 °C	I2C	Sawn 8 mils on Blue foil		
EM3027IDXSO08B+	S08	-40 +125 °C	I2C	Tape & Reel, 2500 pcs	3027	X5
EM3027IDSSO08B+	S08	-40 +85 °C	I2C	Tape & Reel, 2500 pcs	3027	S5
EM3027SDXTP14B+	TSSOP14	-40 +125 °C	SPI	Tape & Reel, 3500 pcs	3027	X6
EM3027SDSTP14B+	TSSOP14	-40 +85 °C	SPI	Tape & Reel, 3500 pcs	3027	S6

* The I2C Bus is a trademark of Philips Electronics N.V.