



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# Built-in EVENT RECORDER FUNCTION SERIAL-INTERFACE REAL TIME CLOCK MODULE

## RX-5412SF

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : 4-wire serial interface
- Operating voltage range : 2.5 V to 5.5 V
- Wide Timekeeper voltage range : 1.4 V to 5.5 V
- Low backup current : 0.5  $\mu$ A / 3 V ( Typ. )
- Built-in SRAM : Built-in 2048 bit ( 8 bit  $\times$  256 )
- The various functions include full calendar, alarm, timer, event record, watch dog timer, automatic power switching function.



Product Number (Please contact us)  
X1B000082xxxx00

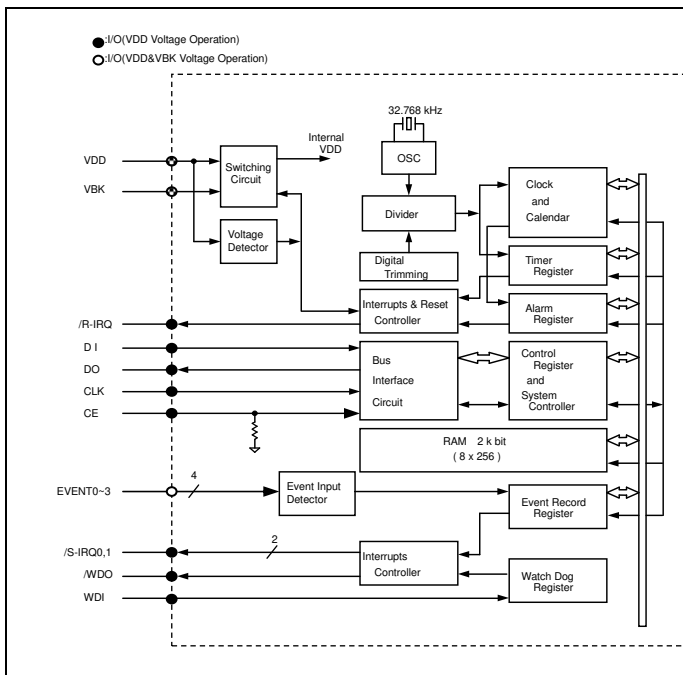


Actual size



**NEW**

### Block diagram



### Overview

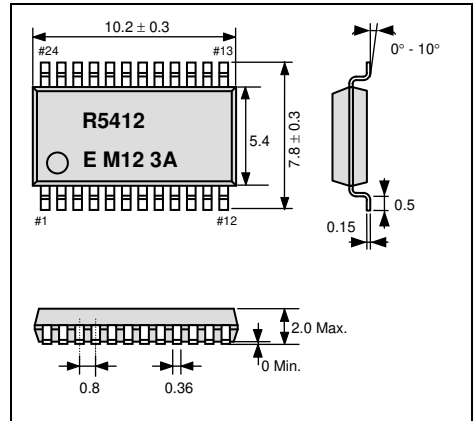
- **Event recorder function**
  - 4 input ports are available for event recorder request.
  - Event recorder data are recorded in inside memory according to user setting.
- **Power switching circuit**
  - When VDD voltage are down, real time clock module power source are switched to VBAT from VDD.
- **Built-in SRAM (256 bytes)**
  - Available built in SRAM for users memory and event recorder memory.
- **Watch dog timer function**
  - Watch dog time, it can set from 1.95 ms to 468.75 ms
- **Voltage drop detection**
  - When real time clock module return from backup mode, this function indicate The reliability of real time clock module data.
- **Periodic timer function**
  - In a timer period, it can set from 1/4096 seconds to 4095 minutes.
- **Alarm function**
  - Alarm by combination of day of week, day, hours, and minutes.

### Pin Function

Signal name	Pin No.	I / O	Function	Signal name	Pin No.	I / O	Function
Vss	1	-	GND	(Vss)	24	-	
EVENT0	2	Input	Event input	(Vss)	23	-	
EVENT1	3	Input	Event input	(Vss)	22	-	
VBK	4	-	Backup power supply	(Vss)	21	-	
EVENT2	5	Input	Event input	(Vss)	20	-	
(Vss)	6	-		(Vss)	19	-	
EVENT3	7	Input	Event input	/S-IRQ1	18	Output	Event record interrupt output (open drain)
CE	8	Input	Chip enabled input	/S-IRQ0	17	Output	Event record interrupt output (open drain)
CLK	9	Input	Clock input pin for serial data transmission	WDI	16	Input	Watch dog input (open drain)
DO	10	Output	Data output pin for serial data transmission	/WDO	15	Output	Watch dog output (open drain)
DI	11	Input	Data input pin for serial data transmission	N.C.	14	-	-
/R-IRQ	12	Output	RTC function interrupt output (open drain)	V <sub>DD</sub>	13	-	Power supply

### External dimensions

(Unit:mm)



### Specifications (characteristics)

\*Refer to application manual for details.

#### Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	V <sub>DD</sub>	-	2.5	3.0	5.5	V
Clock voltage	V <sub>CLK</sub>	-	1.4	3.0	5.5	V
Operating temperature	T <sub>OPR</sub>	-	-40	+25	+85	°C
Frequency tolerance	$\Delta f / f$	T <sub>a</sub> = +25 °C, V <sub>DD</sub> = 3.0 V		5 ± 23 *		$\times 10^{-6}$
Current Consumption	I <sub>DD1</sub>	Back up operation , CE = GND , /IRQ = OFF		0.5	1.0	$\mu$ A
	I <sub>DD2</sub>			0.5	1.0	

\*Equivalent to 1 minute of monthly deviation.