

REAL TIME CLOCK MODULE (4-bit)

RTC-72421  
RTC-72423

- Built-in crystal unit allows adjustment-free efficient operation.
- 24 h /12 h changeable and leap year automatically adjustable (Gregorian calendar).

Note

- 7242series does not have complete compatibility ability for the "old product RTC-6242 series".
- when replace to 7242series from 6242 series, confirm the technical information of RTC7242 latest manual by all means.



Product Number (Please contact us)  
 RTC-72421A : Q42724212000100  
 RTC-72421B : Q42724212000200  
 RTC-72423A : Q42724232000600  
 RTC-72423B : Q42724232000700



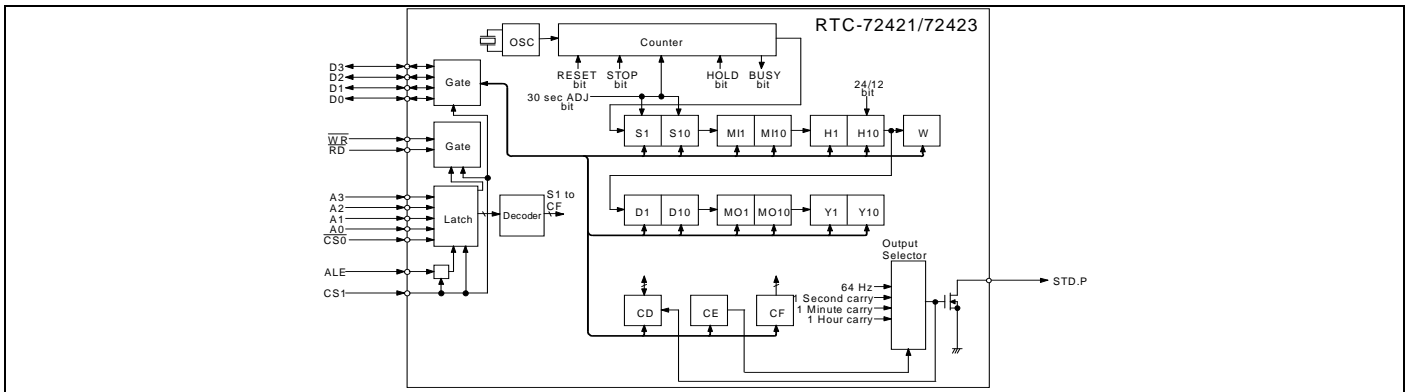
Actual size

RTC-72421

RTC-72423



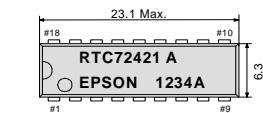
Block diagram



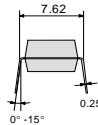
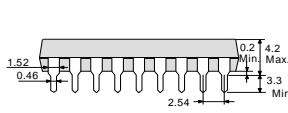
Terminal connection/External dimensions

(Unit:mm)

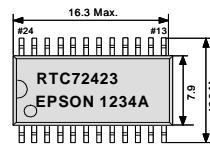
● RTC-72421 (DIP 18-pin)



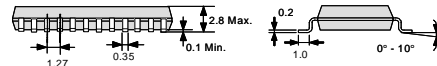
No.	Pin terminal	No.	Pin terminal
1	STD.P	18	VDD
2	/CS0	17	(VDD)
3	ALE	16	(VDD)
4	A0	15	CS1
5	A1	14	CS0
6	A2	13	D1
7	A3	12	D2
8	/RD	11	D3
9	GND	10	/WR



● RTC-72423 (SOP 24-pin)



No.	Pin terminal	No.	Pin terminal
1	STD.P	24	VDD
2	/CS0	23	(VDD)
3	N.C.	22	(VDD)
4	ALE	21	N.C.
5	A0	20	CS1
6	N.C.	19	D0
7	A1	18	N.C.
8	N.C.	17	N.C.
9	A2	16	D1
10	A3	15	D2
11	/RD	14	D3
12	GND	13	/WR



The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality, reliability or electrical specs.

Specifications (characteristics)

\*Refer to application manual for details.

Absolute Max. rating

Item	Symbol	Conditions	Min.	Max.	Unit
Supply voltage	VDD	Ta=+25 °C	-0.3	+7.0	V
Input voltage	VIO	Ta=+25 °C	GND-0.3	VDD+0.3	
Storage temperature *	TSTG	RTC-72421	-55	+85	°C
		RTC-72423	-55	+125	

\*Stored as bare product after unpacking

Operating range

Item	Symbol	Conditions	Min.	Max.	Unit
Power voltage	VDD	—	4.5	5.5	V
Clock voltage	VCLK	—	2.0	5.5	
Operating temperature	TOPR	RTC-72421	-10	+70	°C
		RTC-72423	-40	+85	

Stored as bare product after unpacking

Frequency characteristics

Item	Symbol	Conditions	Range	Unit
Frequency precision	Δf/f	Ta=+25 °C VDD=5.0 V	72421A	±10
			72421B	±50
			72423A	±20
			72423B	±50
Frequency temperature characteristics	TOP	-10 °C to +70 °C (+25 °C)	+10 / -120	×10 <sup>-6</sup>
			-40 °C to +85 °C(+25 °C)	
Frequency voltage characteristics	f/V	Ta=+25 °C, VDD=2.0 V to 5.5 V	±5.0 Max.	×10 <sup>-6</sup> /V
Aging	fa	Ta=+25 °C, VDD=5.0 V, First year	±5.0 Max.	×10 <sup>-6</sup> /year

DC characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Applicable terminal
Current consumption	Ibd1	CS1= 0 V Exclude input/output current	—	1	10	μA	—
	Ibd2	VDD=5 V VDD=2 V	—	0.9	5		—
HIGH input voltage (1)	VIH1	—	2.2	—	—	V	All inputs other than CS1
LOW input voltage (1)	VIL1	—	—	0.8	—		
LOW output voltage (1)	VOL1	IOL=2.5 mA	—	0.4	—	V	D0 to D3
HIGH output voltage	VOH	IOH=-400 μA	2.4	—	—		
LOW output voltage (2)	VOL2	IOL=2.5 mA	—	0.4	—	μA	STD.P
OFF leak current	IOFFLK	V1=VDD/0 V	—	10/-10	—		
Input capacity	C1	Input frequency 1 MHz	—	10	—	pF	Input other than D0 to D3, STD.P
			—	20	—		
HIGH input voltage (2)	VIH2	VDD=2.0 V to 5.5 V	4/5 VDD	—	—	V	CS1
LOW input voltage (2)	VIL2	—	—	1/5 VDD	—		
Input leak current (1)	ILK1	V1=VDD/0 V	—	—	1/-1	μA	Input other than D0 to D3
Input leak current (2)	ILK2	—	—	—	10/-10		

## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

## WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

### ► Explanation of the mark that are using it for the catalog

	► Pb free.
	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

## Notice

- This material is subject to change without notice.
- Any part of this material may not be reproduced or duplicated in any form or any means without the written permission of Seiko Epson.
- The information about applied data, circuitry, software, usage, etc. written in this material is intended for reference only. Seiko Epson does not assume any liability for the occurrence of customer damage or infringing on any patent or copyright of a third party. This material does not authorize the licensing for any patent or intellectual copyrights.
- When exporting the products or technology described in this material, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
- You are requested not to use the products (and any technical information furnished, if any) for the development and/or manufacture of weapon of mass destruction or for other military purposes. You are also requested that you would not make the products available to any third party who may use the products for such prohibited purposes.
- These products are intended for general use in electronic equipment. When using them in specific applications that require extremely high reliability, such as the applications stated below, you must obtain permission from Seiko Epson in advance.  
/ Space equipment (artificial satellites, rockets, etc.) / Transportation vehicles and related (automobiles, aircraft, trains, vessels, etc.) / Medical instruments to sustain life / Submarine transmitters / Power stations and related / Fire work equipment and security equipment / traffic control equipment / and others requiring equivalent reliability.
- All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Epson:

[RTC-72421B:ROHS](#) [RTC-72421A:ROHS](#)