

4-bit REAL TIME CLOCK MODULE

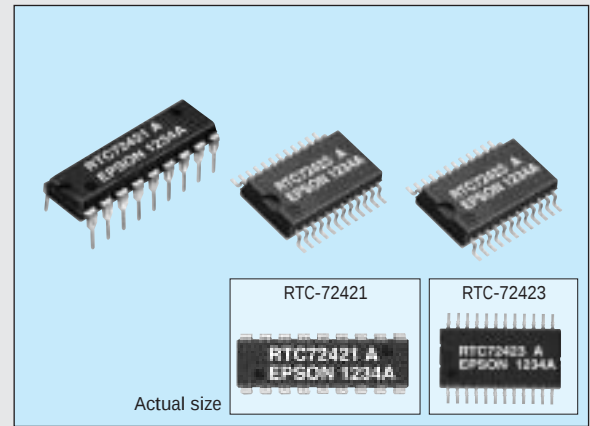
RTC-72421/72423

Product number (please refer to page 2)

Q4272421xx xx x00

Q4272423xx xx x00

- Built-in crystal unit allows adjustment-free efficient operation.
- 12/24 h clock switchover function and automatic leap year setting.
- Interrupt masking.



Actual size

The details are mentioned in the application manual.

<http://www.epsondevice.com>

■ Specifications (characteristics)

■ Absolute Max. rating

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	V _{DD}	Ta=+25 °C	-0.3	7.0	V
Input and output voltage	V _{I/O}	Ta=+25 °C	GND -0.3	V _{DD} +0.3	
Storage temperature *	T _{STG}	RTC-72421	-55	+85	°C
		RTC-72423	-55	+125	

*Stored as bare product after unpacking

■ Operating range

Item	Symbol	Condition	Min.	Max.	Unit
Power voltage	V _{DD}	—	4.5	5.5	V
Supply voltage	V _{CLK}	—	2.0	5.5	V
Operating temperature *	T _{OPR}	RTC-72421	-10	70	°C
		RTC-72423	-40	85	

*No condensation

■ Frequency characteristics

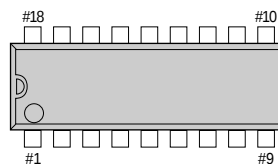
Item	Symbol	Condition		Range	Unit
Frequency tolerance	$\Delta f/f_0$	Ta=+25 °C VDD=5 V	72421 A	±10	$\times 10^{-6}$
			72421 B	±50	
			72423 A	±20	
			72423	±50	
Frequency temperature characteristics	T _{OP}	-10 °C to +70 °C (Reference at +25 °C)		+10/-120	$\times 10^{-6}$
		-40 °C to +85 °C (Reference at +25 °C)		+10/-220	
Frequency voltage characteristics	f/V	Ta=+25 °C VDD=2.0 V to 5.5 V		±5 Max.	$\times 10^{-5}/V$
Aging	fa	VDD=5 V, Ta=+25 °C, first year		±5 Max.	$\times 10^{-6}/\text{year}$

■ DC characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Applicable terminal
Current consumption	I _{DD1}	CS ₁ =0 V Exclude input/output current	—	1	10	μA	—
	I _{DD2}	V _{DD} =5 V V _{DD} =2 V	—	0.9	5	μA	
"H" input voltage (1)	V _{IH1}	—	2.2	—	—	V	All inputs other than CS ₁
"L" input voltage (1)	V _{IL1}	—	—	0.8	—	V	
Input leak current (1)	I _{LK1}	V _I =V _{DD} /0 V	—	±1	—	μA	Input other than Do to D ₃
Input leak current (2)	I _{LK2}			±10	—	μA	
"L" output voltage (1)	V _{OL1}	I _{OL} =2.5 mA	2.4	0.4	—	V	Do to D ₃
"H" output voltage	V _{OH}	I _{OH} =-400 μA		—	—	V	
"L" output voltage (2)	V _{OL2}	I _{OL} =2.5 mA	—	0.4	—	V	STD.P
Off leak current	I _{OFFLK}	V _I =V _{DD} /0 V		10	—	μA	
Input capacity	C ₁	Input frequency 1 MHz	—	10	—	pF	Input other than Do to D ₃
				20	—	pF	
"H" input voltage (2)	V _{IH2}	V _{DD} =2 to 5.5 V	4/5 V _{DD}	—	—	V	CS ₁
"L" input voltage (2)	V _{IL2}			1/5 V _{DD}	—	V	

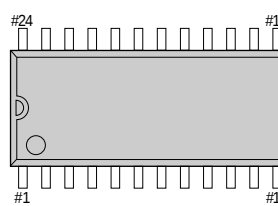
■ Terminal connection

● RTC-72421



No.	Pin terminal	No.	Pin terminal
1	STD. P	18	V _{DD}
2	CS ₁	17	(V _{DD})
3	ALE	16	(V _{DD})
4	A ₀	15	CS ₁
5	A ₁	14	D ₀
6	A ₂	13	D ₁
7	A ₃	12	D ₂
8	RD	11	D ₃
9	GND	10	WR

● RTC-72423



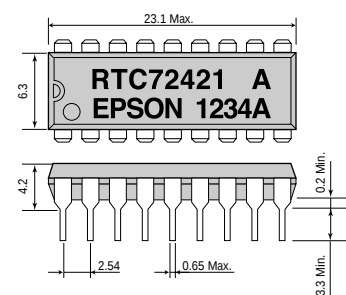
No.	Pin terminal	No.	Pin terminal
1	STD. P	24	V _{DD}
2	CS ₁	23	(V _{DD})
3	NC	22	(V _{DD})
4	ALE	21	NC
5	A ₀	20	CS ₁
6	NC	19	D ₀
7	A ₁	18	NC
8	NC	17	NC
9	A ₂	16	D ₁
10	A ₃	15	D ₂
11	RD	14	D ₃
12	GND	13	WR

- (V_{DD}) and V_{DD} are to have the same level of voltage. Do not connect it to any external terminals.
- NC is not connected internally.

■ External dimensions

(Unit: mm)

● RTC-72421 (DIP 18-pin)



● RTC-72423 (SOP 24-pin)

