

4-bit REAL TIME CLOCK MODULE

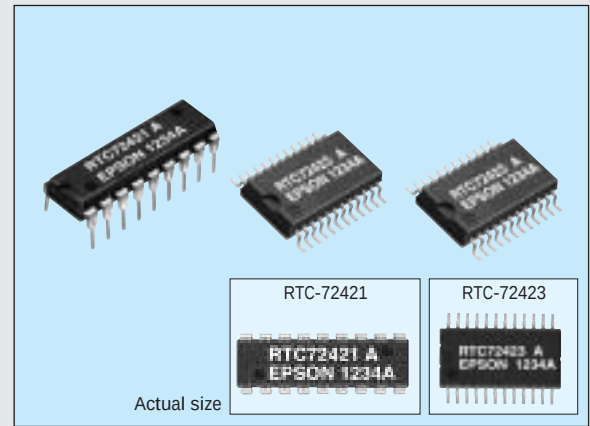
RTC-72421/72423

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.



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}	$T_a = +25\text{ }^{\circ}\text{C}$	-0.3	7.0	V
Input and output voltage	$V_{I/O}$	$T_a = +25\text{ }^{\circ}\text{C}$	GND -0.3	$V_{DD} + 0.3$	
Storage temperature *	T_{STG}	RTC-72421	-55	+85	$^{\circ}\text{C}$
		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	$^{\circ}\text{C}$
		RTC-72423	-40	85	

*No condensation

■ Frequency characteristics

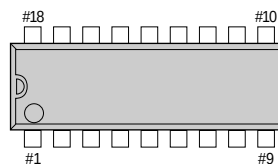
Item	Symbol	Condition		Range	Unit
Frequency tolerance	$\Delta f/f_0$	Ta=+25 °C VDD=5 V	72421 A	±10	$\times 10^{-6}$
			72421 B	±50	
			72423 A	±20	
			72423	±50	
Frequency temperature characteristics	T _{OP}	-10 °C to +70 °C (Reference at +25 °C)		+10/-120	
		-40 °C to +85 °C (Reference at +25 °C)		+10/-220	
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}	$CS_1 = 0\text{ V}$ Exclude input/output current	—	1	10	μA	—
	I_{DD2}	$V_{DD} = 5\text{ V}$ $V_{IO} = 2\text{ V}$	—	0.9	5		
"H" input voltage (1)	V_{IH1}	$V_1 = V_{DD}/0\text{ V}$	2.2	—	—	V	All inputs other than CS_1
"L" input voltage (1)	V_{IL1}		—	0.8	—	V	
Input leak current (1)	I_{LK1}		—	± 1	—	μA	
Input leak current (2)	I_{LK2}		—	± 10	—	μA	
"L" output voltage (1)	V_{OL1}	$I_{OL} = 2.5\text{ mA}$	—	0.4	—	V	Do to D3
"H" output voltage	V_{OH}	$I_{OH} = -400\text{ }\mu\text{A}$	2.4	—	—	V	
"L" output voltage (2)	V_{OL2}	$I_{OL} = 2.5\text{ mA}$	—	0.4	—	V	STD.P
Off leak current	I_{OFFLK}	$V_1 = V_{DD}/0\text{ V}$	—	10	—	μA	
Input capacity	C_1	Input frequency 1 MHz	—	10	—	pF	Input other than Do to D3
			—	20	—		
"H" input voltage (2)	V_{IH2}	$V_{DD} = 2\text{ to } 5.5\text{ V}$	$4/5 V_{DD}$	—	—	V	CS_1
"L" input voltage (2)	V_{IL2}		—	$1/5 V_{DD}$	—		

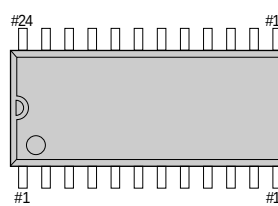
■ Terminal connection

● 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



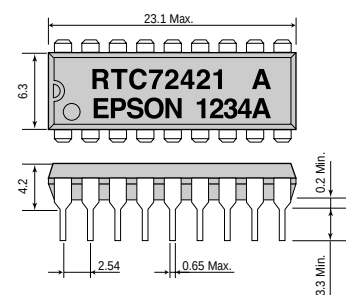
No.	Pin terminal	No.	Pin terminal
1	STD. P	24	V_{DD}
2	CS_1	23	(V_{DD})
3	NC	22	(V_{DD})
4	ALE	21	NC
5	A_0	20	CS_1
6	NC	19	D_0
7	A_1	18	NC
8	NC	17	NC
9	A_2	16	D_1
10	A_3	15	D_2
11	RD	14	D_3
12	GND	13	WR

- (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)

