

4-bit REAL TIME CLOCK MODULE

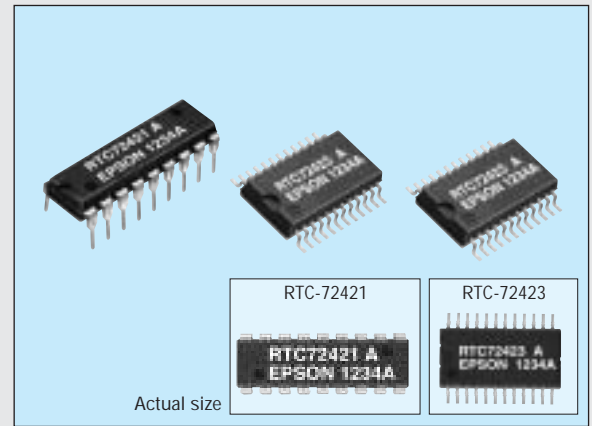
RTC-72421/72423

Product number (please refer to page 2)

Q4272421xxxxxx00

Q4272423xxxxxx00

- 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 °C	-0.3	7.0	V
Input and output voltage	V _{I/O}	T _a =+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

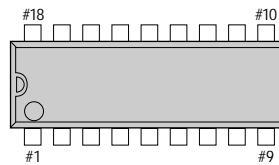
Item	Symbol	Condition	Range	Unit	
Frequency tolerance	Δf/f ₀	T _a =+25 °C	72421 A	±10	x 10 ⁻⁶
			72421 B	±50	
		V _{DD} =5 V	72423 A	±20	
			72423	±50	
Frequency temperature characteristics	T _{OP}	-10 °C to +70 °C (Reference at +25 °C)	+10/-120	x 10 ⁻⁶	
		-40 °C to +85 °C (Reference at +25 °C)	+10/-220		
Frequency voltage characteristics	f/V	T _a =+25 °C V _{DD} =2.0 V to 5.5 V	±5 Max.	x 10 ⁴ /V	
Aging	f _a	V _{DD} =5 V, T _a =+25 °C, first year	±5 Max.	x 10 ⁻⁶ /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		
"H" input voltage (1)	V _{IH1}	—	2.2	—	—	V	All inputs other than CS ₁
"L" input voltage (1)	V _{IL1}			0.8	—		
Input leak current (1)	I _{LK1}	V ₁ =V _{DD} /0 V	—	±1	—	μA	Input other than Do to D ₃
Input leak current (2)	I _{LK2}			±10	—		
"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	—		
"L" output voltage (2)	V _{OL2}	I _{OL} =2.5 mA	—	0.4	—	V	STD.P
Off leak current	I _{OFFLK}	V ₁ =V _{DD} /0 V	—	10	—		
Input capacity	C ₁	Input frequency 1 MHz	—	10	—	pF	Input other than Do to D ₃
			—	20	—		
"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}	—		

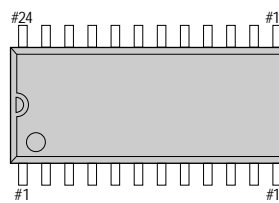
Terminal connection

RTC-72421



No.	Pin terminal	No.	Pin terminal
1	STD.P	18	V _{DD}
2	CS ₋	17	(V _{DD})
3	ALE	16	(V _{DD})
4	A ₀	15	CS ₊
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



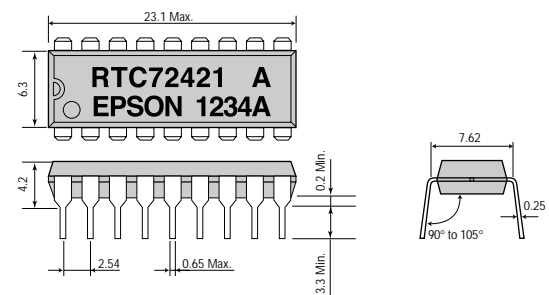
No.	Pin terminal	No.	Pin terminal
1	STD.P	24	V _{DD}
2	CS ₋	23	(V _{DD})
3	NC	22	(V _{DD})
4	ALE	21	NC
5	A ₀	20	CS ₊
6	NC	19	D ₀
7	A ₁	18	NC
8	NC	17	NC
9	A ₂	16	D ₁
10	A ₃	15	D ₂
11	RD	14	D ₃
12	GND	13	WR

- (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)

