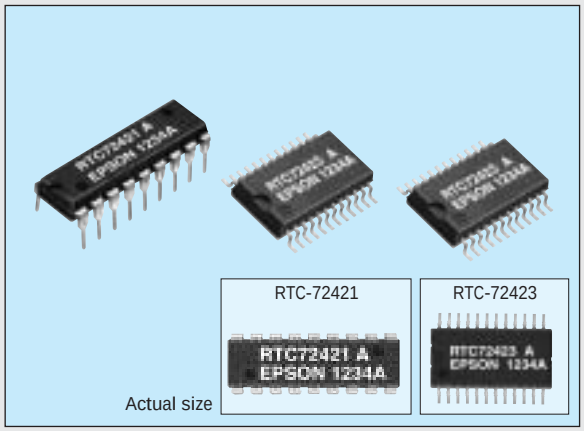
4-bit REAL TIME CLOCK MODULE

RTC-72421/72423

Product number (please refer to page 2)

Q4272421xxxxx00
Q4272423xxxxx00

- 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}	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	V
Storage temperature *	T_{STG}	RTC-72421	-55	+85	°C
		RTC-72423	-55	+125	°C

*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	°C

*No condensation

Frequency characteristics

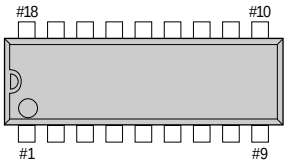
Item	Symbol	Condition		Range	Unit
Frequency tolerance	Δf/fo	Ta=+25 °C VDD=5 V	72421 A	±10	x 10^{-6}
			72421 B	±50	
			72423 A	±20	
			72423	±50	
Frequency temperature characteristics	T_{OP}	-10 °C to +70 °C (Reference at +25 °C)		+10/-120	
		-40 °C to +85 °C (Reference at +25 °C)		+10/-220	
Frequency voltage characteristics	f/V	Ta=+25 °C VDD=2.0 V to 5.5 V		±5 Max.	x 10^{-6}/V
Aging	fa	VDD=5 V, Ta=+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}	CS1=0 V Exclude input/ output current	V_{DD}=5 V	—	1	10	µA	—
	I_{DD2}		V_{DD}=2 V		0.9	5		
"H" input voltage (1)	V_{IH1}	—		2.2	—	—	V	All inputs other than CS1
"L" input voltage (1)	V_{IL1}			—	—	0.8		
Input leak current (1)	I_{LK1}	V_I=V_{DD}/0 V			—	±1	µA	Input other than D0 to D3
Input leak current (2)	I_{LK2}					±10		D0 to D3
"L" output voltage (1)	V_{OL1}	I_{OL}=2.5 mA				0.4	V	
"H" output voltage	V_{OH}	I_{OH}=-400 µA		2.4		—		
"L" output voltage (2)	V_{OL2}	I_{OL}=2.5 mA		—		0.4		STD.P
Off leak current	I_{OFFLK}	V_I=V_{DD}/0 V				10	µA	
Input capacity	C_I	Input frequency 1 MHz			10	—	pF	Input other than D0 to D3
					20			D0 to D3
"H" input voltage (2)	V_{IH2}	V_{DD}=2 to 5.5 V		4/5 V_{DD}	—	—	V	CS1
"L" input voltage (2)	V_{IL2}			—		1/5 V_{DD}		

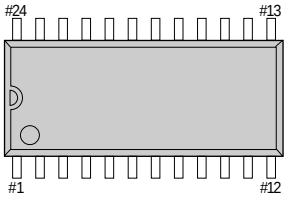
Terminal connection

RTC-72421



No.	Pin terminal	No.	Pin terminal
1	STD. P	18	V_{DD}
2	$\overline{CS_0}$	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	$\overline{RD}$	11	D_3
9	GND	10	$\overline{WR}$

RTC-72423



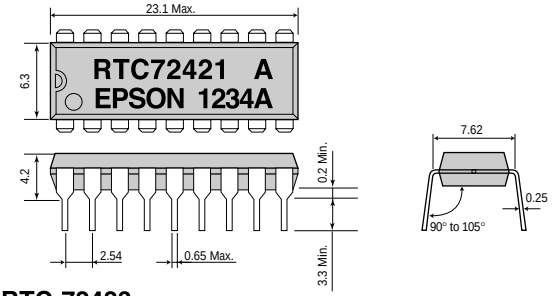
No.	Pin terminal	No.	Pin terminal
1	STD. P	24	V_{DD}
2	$\overline{CS_0}$	23	(V_{DD})
3	NC	22	(V_{DD})
4	ALE	21	NC
5	A_0	20	CS_1
6	NC	19	D_0
7	A_1	18	NC
8	NC	17	NC
9	A_2	16	D_1
10	A_3	15	D_2
11	$\overline{RD}$	14	D_3
12	GND	13	$\overline{WR}$

- (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)