

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).



Product Number (Please contact us)
RTC-72421 : Q42724212xxxx00
RTC-72423 : Q42724232xxxx00



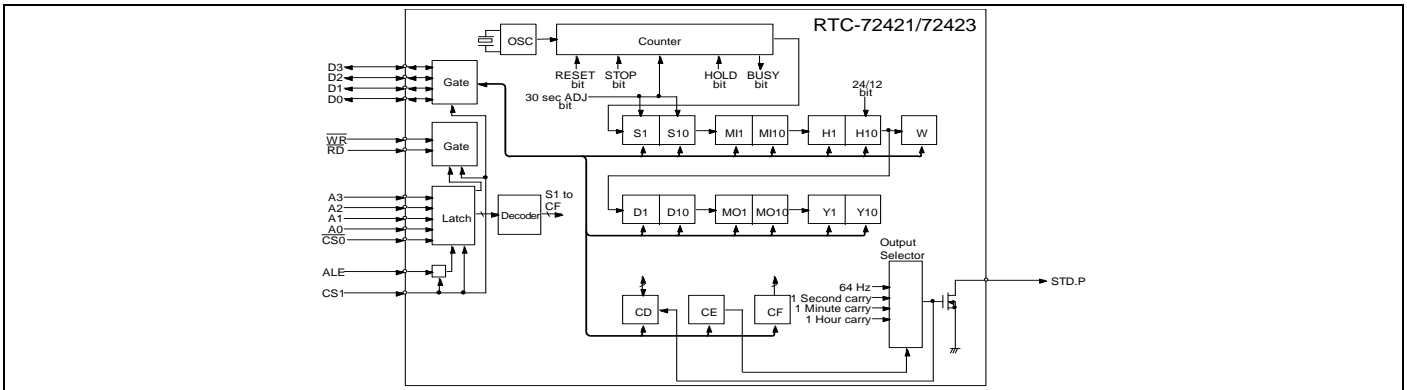
Actual size

RTC-72421

RTC-72423



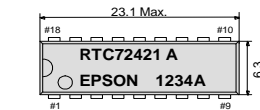
Block diagram



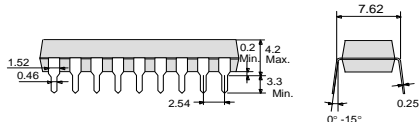
Terminal connection/External dimensions

(Unit:mm)

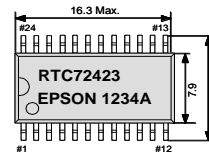
● RTC-72421 (DIP 18-pin)



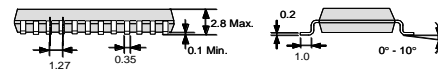
No.	Pin terminal	No.	Pin terminal
1	STD.P	18	V _{DD}
2	/CS ₀	17	(V _{DD})
3	ALE	16	(V _{DD})
4	A ₀	15	CS ₁
5	A ₁	14	C ₀
6	A ₂	13	D ₁
7	A ₃	12	D ₂
8	/RD	11	D ₃
9	GND	10	/WR



● RTC-72423 (SOP 24-pin)



No.	Pin terminal	No.	Pin terminal
1	STD.P	24	V _{DD}
2	/CS ₀	23	(V _{DD})
3	N.C.	22	(V _{DD})
4	ALE	21	N.C.
5	A ₀	20	CS ₁
6	N.C.	19	D ₀
7	A ₁	18	N.C.
8	N.C.	17	N.C.
9	A ₂	16	D ₁
10	A ₃	15	D ₂
11	/RD	14	D ₃
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	V _{DD}	T _a =+25 °C	-0.3	+7.0	V
Input 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	Conditions	Min.	Max.	Unit
Power voltage	V _{DD}	—	4.5	5.5	V
Clock voltage	V _{CLK}	—	2.0	5.5	
Operating temperature	T _{OPR}	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	T _a =+25 °C V _{DD} =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 ⁻⁶
		-40 °C to +85 °C(+25 °C)	+10 / -220	
Frequency voltage characteristics	f/V	T _a =+25 °C, V _{DD} =2.0 V to 5.5 V	±5.0 Max.	×10 ⁻⁶ /V
Aging	fa	T _a =+25 °C, V _{DD} =5.0 V, First year	±5.0 Max.	×10 ⁻⁶ /year

DC characteristics

Item	Symbol	Conditions	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		
HIGH input voltage (1)	V _{IH1}	—	2.2	—	—	V	All inputs other than CS ₁
LOW input voltage (1)	V _{IL1}	—	—	0.8			
LOW output voltage (1)	V _{OL1}	I _{OL} =2.5 mA	—	0.4	—	V	D ₀ to D ₃
HIGH output voltage	V _{OH}	I _{OH} =-400 μA	2.4	—			
LOW output voltage (2)	V _{OL2}	I _{OL} =2.5 mA	—	0.4	—	μA	STD.P
OFF leak current	I _{OFFLK}	V _I =V _{DD} /0 V	—	10/-10			
Input capacity	C ₁	Input frequency 1 MHz	—	10	—	pF	Input other than D ₀ to D ₃ , STD.P
			4/5 V _{DD}	20			
HIGH input voltage (2)	V _{IH2}	V _{DD} =2.0 V to 5.5 V	—	—	1/5 V _{DD}	V	CS ₁
LOW input voltage (2)	V _{IL2}	—	—	—			
Input leak current (1)	I _{LK1}	V _I =V _{DD} /0 V	—	—	1/-1	μA	Input other than D ₀ to D ₃
Input leak current (2)	I _{LK2}	—	—	—	10/-10		