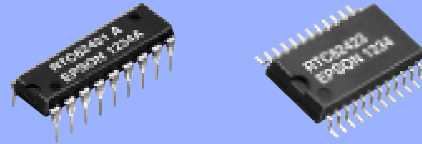


4-bit REAL TIME CLOCK MODULE

RTC-62421  
RTC-62423

- Built-in crystal unit allows adjustment-free efficient operation.
- 24 h / 12 h changeable and leap year automatically adjustable (Gregorian calendar).
- Pins and functions are compatible with the MSM6242 series.



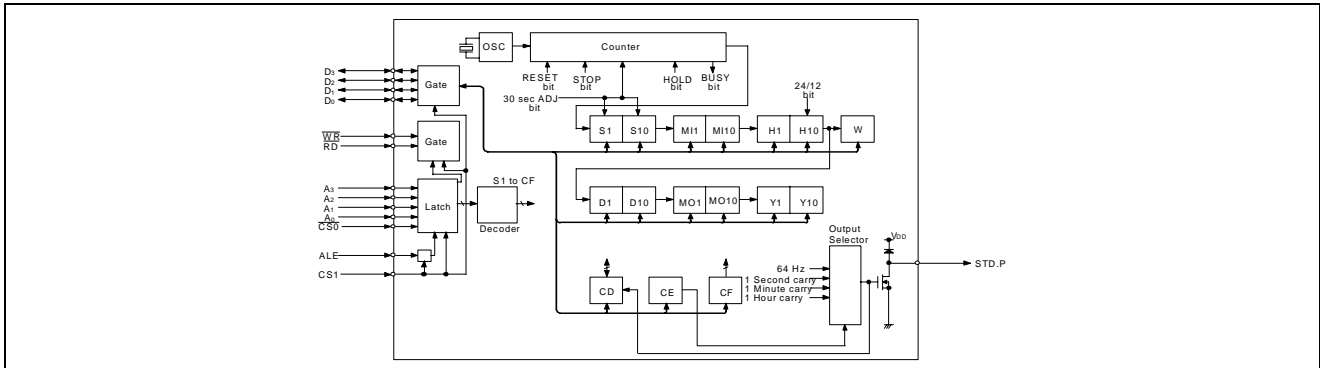
Actual size

RTC-62421

RTC-62423



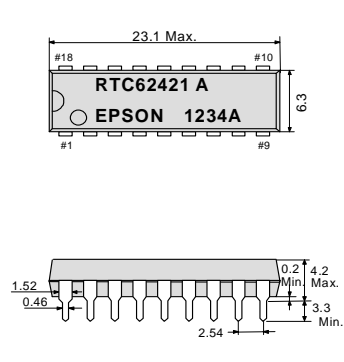
Block diagram



Terminal connection/External dimensions

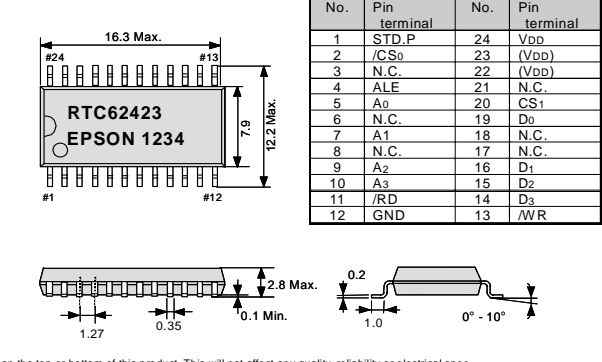
(Unit:mm)

● RTC-62421 (DIP 18-pin)



| No. | Pin terminal | No. | Pin terminal |
|-----|--------------|-----|--------------|
| 1   | STD.P        | 18  | VDD          |
| 2   | /CS0         | 17  | (VDD)        |
| 3   | ALE          | 16  | (VDD)        |
| 4   | A0           | 15  | CS1          |
| 5   | A1           | 14  | C0           |
| 6   | A2           | 13  | D1           |
| 7   | A3           | 12  | D2           |
| 8   | /RD          | 11  | D3           |
| 9   | GND          | 10  | /WR          |

● RTC-62423 (SOP 24-pin)



| No. | Pin terminal | No. | Pin terminal |
|-----|--------------|-----|--------------|
| 1   | STD.P        | 24  | VDD          |
| 2   | /CS0         | 23  | (VDD)        |
| 3   | N.C.         | 22  | (VDD)        |
| 4   | ALE          | 21  | N.C.         |
| 5   | A0           | 20  | CS1          |
| 6   | N.C.         | 19  | D0           |
| 7   | A1           | 18  | N.C.         |
| 8   | N.C.         | 17  | N.C.         |
| 9   | A2           | 16  | D1           |
| 10  | A3           | 15  | D2           |
| 11  | /RD          | 14  | D3           |
| 12  | GND          | 13  | /WR          |

Specifications (characteristics)

\*Refer to application manual for details.

Absolute Max. rating

| Item                  | Symbol | Condition | Min.    | Max.    | Unit |
|-----------------------|--------|-----------|---------|---------|------|
| Supply voltage        | VDD    | Ta=+25 °C | -0.3    | +7.0    | V    |
| Input voltage         | VIO    | Ta=+25 °C | GND-0.3 | VDD+0.3 |      |
| Storage temperature * | TSTG   | RTC-62421 | -55     | +85     | °C   |
|                       |        | RTC-62423 | -55     | +125    |      |

\*Stored as bare product after unpacking

Operating range

| Item                  | Symbol | Condition                              | Min. | Max. | Unit |
|-----------------------|--------|--|------|------|------|
| Power voltage         | VDD    | —                                      | 4.5  | 5.5  | V    |
| Clock voltage         | VCLK   | —                                      | 2.0  | 5.5  | V    |
| Operating temperature | TOPR   | Stored as bare product after unpacking | -40  | +85  | °C   |

Frequency characteristics

| Item                                  | Symbol | Condition                        | Range      | Unit                    |
|---------------------------------------|--------|----------------------------------|------------|-------------------------|
| Frequency precision                   | Δf/f   | Ta=+25 °C<br>VDD=5.0 V           | 62421A     | ±10                     |
|                                       |        |                                  | 62421B     | ±50                     |
|                                       |        |                                  | 62423A     | ±20                     |
|                                       |        |                                  | 62423      | ±50                     |
| Frequency temperature characteristics | TOP    | -10 °C to +70 °C (+25 °C)        | +10 / -120 |                         |
|                                       |        | -40 °C to +85 °C(+25 °C)         | +10 / -220 |                         |
| Frequency voltage characteristics     | f/V    | Ta=+25 °C, VDD=4.5 V to 5.5 V    | ±5.0 Max.  | ×10 <sup>-6</sup> /V    |
| Aging                                 | fa     | Ta=+25 °C, VDD=5.0 V, First year | ±5.0 Max.  | ×10 <sup>-6</sup> /year |

DC characteristics

| Item                   | Symbol | Condition                      | Min.    | Typ. | Max.    | Unit | Applicable terminal       |
|------------------------|--------|--------------------------------|---------|------|---------|------|---------------------------|
| Current consumption    | Ibd1   | CS1= 0 V<br>VDD=5 V<br>VDD=2 V | —       | 15   | 30      | μA   | —                         |
|                        | Ibd2   |                                | —       | 1    | 1.8     |      |                           |
| HIGH input voltage (1) | VIH1   | —                              | 2.2     | —    | —       | V    | All inputs other than CS1 |
| LOW input voltage (1)  | VIL1   |                                | —       | —    | 0.8     |      |                           |
| LOW output voltage (1) | VOL1   | IOL=2.5 mA                     | —       | —    | 0.4     | V    | D0 to D3                  |
| HIGH output voltage    | VOH    | Ioh=-400 μA                    | 2.4     | —    | —       |      |                           |
| LOW output voltage (2) | VOL2   | IOL=2.5 mA                     | —       | —    | 0.4     | V    | STD.P                     |
| OFF leak current       | IoffLK | V1=VDD/0 V                     | —       | —    | 10/-10  |      |                           |
| Input capacity         | C1     | Input frequency 1 MHz          | —       | 5    | —       | pF   | Input Pins                |
| HIGH input voltage (2) | VIH2   | VDD=2.0 V to 5.5 V             | 4/5 VDD | —    | —       | V    | CS1                       |
| LOW input voltage (2)  | VIL2   |                                | —       | —    | 1/5 VDD |      |                           |
| Input leak current (1) | ILK1   | V1=VDD/0 V                     | —       | —    | 1/-1    | μA   | Input other than D0 to D3 |
| Input leak current (2) | ILK2   | —                              | —       | —    | 10/-10  |      |                           |