



Built-in 32.768 kHz-DTCXO, High Stability I²C-Bus INTERFACE REAL TIME CLOCK MODULE

RX-8025T

- Built in frequency adjusted 32.768 kHz crystal unit and DTCXO.
- Interface Type : I²C-Bus Interface (400 kHz)
- Interface voltage range : 1.8 V to 5.5 V
- Temp.compensated voltage range: 2.2 V to 5.5 V
- Wide Timekeeper voltage range : 1.6 V to 5.5 V
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer.

* The I²C-Bus is a trademark of NXP Semiconductors



Product Number (Please contact us)
RX-8025T : X1B0000120010

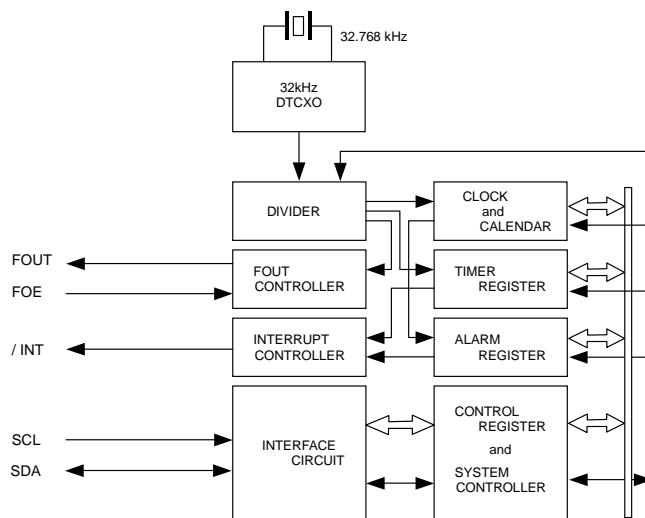


Actual size



NEW

Block diagram



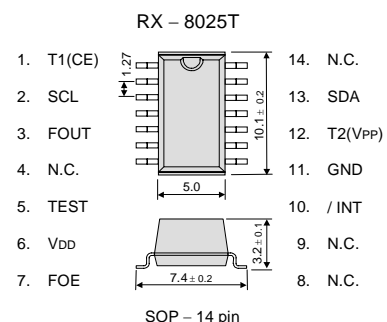
Overview

- High Stability
 - UA
 - $\pm 1.9 \times 10^{-6}$ / 0 °C to +40 °C
(Equivalent to 5 seconds of month deviation)
 - $\pm 3.4 \times 10^{-6}$ / -40 °C to +85 °C
(Equivalent to 9 seconds of month deviation)
 - UB
 - $\pm 3.8 \times 10^{-6}$ / 0 °C to +50 °C
(Equivalent to 10 seconds of month deviation)
 - $\pm 5.0 \times 10^{-6}$ / -40 °C to +85 °C
(Equivalent to 13 seconds of month deviation)
- 32.768 kHz frequency output function
 - FOUT pin output (C-MOS output), CL=30 pF
 - Output selectable
< 32.768 kHz, 1024 Hz, 1 Hz >
- The various interrupt
 - Timer Function can be set up between 1/4096 second and 255 minutes.
 - Alarm Function can be set to day of week, day, hour, or minute.

Pin Function

Signal Name	Pin No.	I / O	Function
T1(CE)	1	input	* Use by the manufacture for testing. (Do not connect externally.)
SCL	2	input	Serial clock input pin
FOUT	3	Output	The pin outputs the reference clock signal. (CMOS output)
TEST	5	input	* Use by the manufacture for testing. (Do not connect externally.)
VDD	6	-	Connected to a positive power supply
FOE	7	input	The input pin for the FOUT output control.
/INT	10	Output	Interrupt output (N-ch open drain)
GND	11	-	Connected to a ground
T2(VPP)	12	-	* Use by the manufacture for testing. (Do not connect externally.)
SDA	13	I / O	Data input and output pin

Terminal connection / External dimensions (Unit:mm)



Metal may be exposed on the top or bottom of this product.
This will not affect any quality, reliability or electrical spec.

Specifications (characteristics)

* Refer to application manual for details.

Electrical Characteristics

■ Electrical Characteristics							
Item	Symbol	Condition		Min.	Typ.	Max.	Unit
Interface voltage	VDD	Interface voltage		1.8	3.0	5.5	V
Temp. compensated voltage	VTEM	Temp. compensated voltage		2.2	3.0	5.5	V
Clock voltage	VCLK	-		1.6	3.0	5.5	V
Operating temperature	TOPR	-		-40	+25	+85	°C
Stability	$\Delta f / f$	UA	Ta = 0 °C to +40 °C	$\pm 1.9^{*1}$			$\times 10^{-6}$
			Ta = -40 °C to +85 °C	$\pm 3.4^{*2}$			
		UB	Ta = 0 °C to +50 °C	$\pm 3.8^{*3}$			
			Ta = -40 °C to +85 °C	$\pm 5.0^{*4}$			
Current consumption (1)	IBK1	Backup Mode FOE = GND, /INT = VDD FOUT output : OFF	VDD = 5 V	-	1.2	3.4	μA
Current consumption (2)	IBK2		VDD = 3 V	-	0.8	2.8	

^{*1}) Equivalent to 5 seconds of month deviation. ^{*2}) Equivalent to 9 seconds of month deviation.

^{*3}) Equivalent to 10 seconds of month deviation. ^{*4}) Equivalent to 13 seconds of month deviation.

32.768 kHz-DTCXO Frequency temperature characteristics (Example)

