

**Built-in 32.768 kHz-DTCXO, High Stability  
I<sup>2</sup>C-Bus INTERFACE REAL TIME CLOCK MODULE**

**RX-8025T**

- Built in frequency adjusted 32.768 kHz crystal unit and DTCXO.
- Interface Type : I<sup>2</sup>C-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 I<sup>2</sup>C-Bus is a trademark of NXP Semiconductors



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

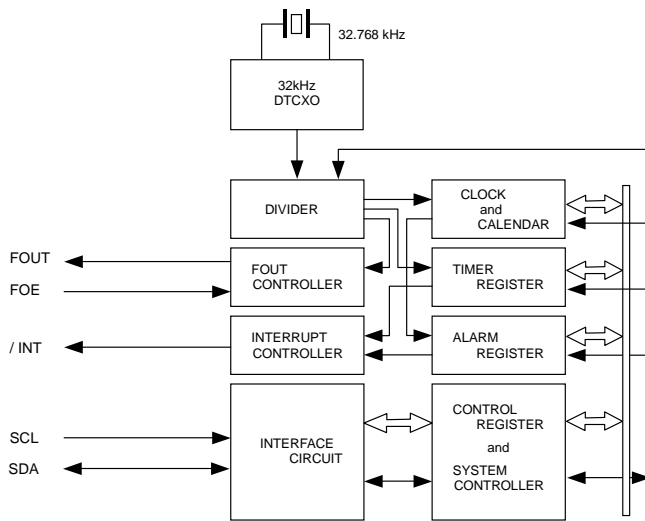


Actual size



**NEW**

**Block diagram**



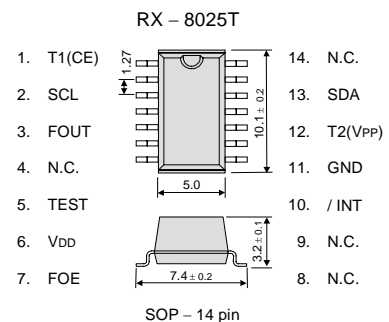
**Overview**

- High Stability
  - JA
    - ± 1.9 x 10<sup>-6</sup> / 0 °C to +40 °C  
( Equivalent to 5 seconds of month deviation )
    - ± 3.4 x 10<sup>-6</sup> / -40 °C to +85 °C  
( Equivalent to 9 seconds of month deviation )
  - UB
    - ± 3.8 x 10<sup>-6</sup> / 0 °C to +50 °C  
( Equivalent to 10 seconds of month deviation )
    - ± 5.0 x 10<sup>-6</sup> / -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

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	Δf/f	JA	Ta = 0 °C to +40 °C	±1.9 <sup>*1</sup>		× 10 <sup>-6</sup>	
			Ta = -40 °C to +85 °C	±3.4 <sup>*2</sup>			
		UB	Ta = 0 °C to +50 °C	±3.8 <sup>*3</sup>			
			Ta = -40 °C to +85 °C	±5.0 <sup>*4</sup>			
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	μA

<sup>\*1</sup>) Equivalent to 5 seconds of month deviation. <sup>\*2</sup>) Equivalent to 9 seconds of month deviation.  
<sup>\*3</sup>) Equivalent to 10 seconds of month deviation. <sup>\*4</sup>) Equivalent to 13 seconds of month deviation.

■ 32.768 kHz-DTCXO Frequency temperature characteristics (Example)

