



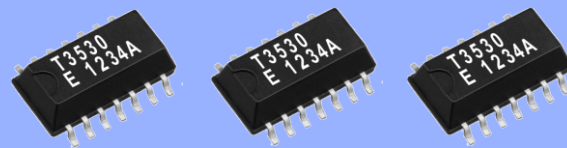
TCXO
32.768 kHz

TG - 3530 SA

- Built-in 32.768 kHz crystal oscillator with high accuracy. (adjustment-free efficient operation)
- Temperature compensated circuit : Stabilized frequency tolerance at any operating temperature.
- Oscillation output voltage : 1.5 V to 5.5 V
- Temperature Compensated Voltage : 2.2 V to 5.5 V
- 32.768 kHz output : C-MOS output, output load : 15 pF



Product Number
Q3721SA02000100



Actual size



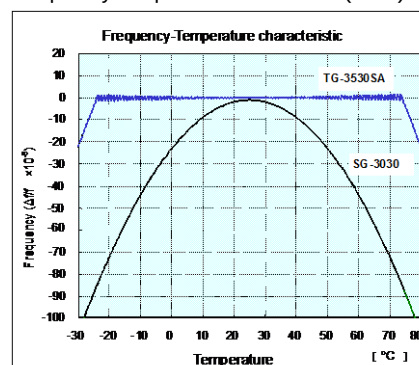
Specifications (characteristics)

Item	Symbol	Specifications	Conditions
Output frequency	f_o	32.768 kHz	
Oscillation output voltage	V_{cc}	1.5 V to 5.5 V	
Temperature compensated voltage	V_{cc}	2.2 V to 5.5 V	
Storage temperature	T_{stg}	-55 °C to +125 °C	Store as bare product.
Operating temperature	T_{use}	-40 °C to +85 °C	
Frequency temperature characteristic	f_o-T_c	$\pm 3.8 \times 10^{-6}$ * Equivalent to 10 seconds of monthly deviation	-10 °C to +60 °C $V_{cc} = 3.0$ V
		$\pm 5.0 \times 10^{-6}$ * Equivalent to 13 seconds of monthly deviation	-20 °C to +70 °C $V_{cc} = 3.0$ V
Frequency voltage coefficient	f_o-V_{cc}	$\pm 1.0 \times 10^{-6}$ / V Max.	+25 °C $V_{cc} = 2.2$ V to 5.5 V
Current consumption	I_{cc}	6.0 μ A (Max.) 3.0 μ A (Typ.)	$V_{cc} = 5.0$ V, No load condition
		4.0 μ A (Max.) 1.7 μ A (Typ.)	$V_{cc} = 3.0$ V, No load condition
Output voltage ("H" level)	V_{OH}	$V_{cc} - 0.4$ V Min.	$I_{OH} = -0.1$ mA $V_{cc} = 3.0$ V
Output voltage ("L" level)	V_{OL}	0.4 V Max.	$I_{OL} = 0.1$ mA $V_{cc} = 3.0$ V
Output load condition	L_{CMOS}	15 pF Max.	CMOS load
Symmetry	SYM	40 % to 60 %	$V_{cc} = 1.5$ V to 5.5 V 1 / 2 V_{cc} level
Rise time	t_r	200 ns Max.	CMOS load 20 % $V_{cc} \rightarrow 80$ % V_{cc}
Fall time	t_f	200 ns Max.	CMOS load 80 % $V_{cc} \rightarrow 20$ % V_{cc}
Start-up time	t_{str}	1.0 s Max. ⁺¹⁾	+25 °C $V_{cc} = 3.0$ V
		3.0 s Max. ⁺¹⁾	-40 °C to +85 °C $V_{cc} = 3.0$ V
Frequency aging	f_{age}	$\pm 3.0 \times 10^{-6}$ / year	+25 °C $V_{cc} = 3.0$ V, first year

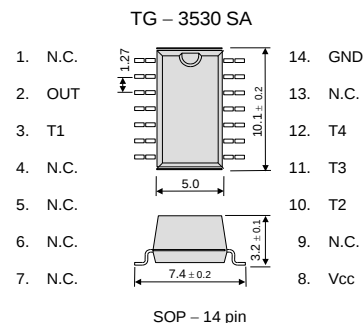
*1) V_{cc} rise time < 10ms (10 % V_{cc} - 90 % V_{cc})

*2) If not specifically indicated, -40 °C to +85 °C.

Frequency temperature coefficient (Ex.)



Terminal connection



Signal Name	Input / Output	Function
V_{cc}	—	Connected to a positive power supply.
OUT	OUTPUT	32.768 kHz clock output pin (C-MOS).
GND	—	Connected to a ground.
T1, T2, T3, T4	—	* Used by the manufacture for testing. (Do not connect externally.)

REAL TIME CLOCK IC. For TG - 3530SA

RX - 4574 SG

- By combining TG-3530SA with RX-4574SG (real-time clock IC), it is possible to achieve a very high accuracy clock system.
- Functions are compatible with RX-4574 LC and RTC-4574 series (except 32 kHz oscillation function).
- Complies with EU RoHS directive

Note) RX-4574SG does not include the crystal unit.
The external clock resources (CMOS) of 32.768 kHz are necessary.
Please input it from the XIN terminal.

Pin map

