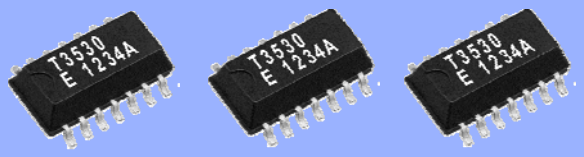
TCXO
32.768 kHz

TG-3530 SA

RoHS Compliant

Product Number
Q3721SA02000100



Actual size

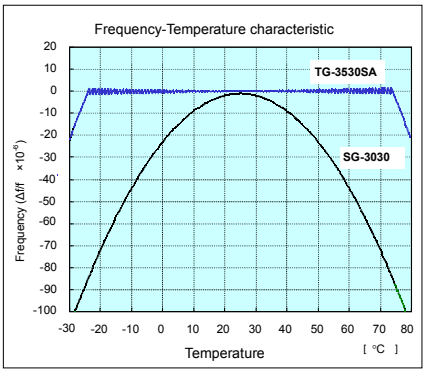
- Built-in 32.768 kHz crystal oscillator with high accuracy. (adjustment-free efficient operation)
- Temperature compensated circuit : Stabilized frequency tolerance at any operating temperature.
- Oscillation output voltage : 1.5 V to 5.5 V
- Temperature Compensated Voltage : 2.2 V to 5.5 V
- 32.768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

Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
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	Storage as single product.
Operating temperature	T_use	–40 °C to +85 °C	
Frequency temperature characteristic	fo-Tc	± 3.8 × 10^{-6} ∗ Equivalent to 10 seconds of monthly deviation	-10 °C to +60 °C V_{CC} = 3.0 V
		± 5.0 × 10^{-6} ∗ Equivalent to 13 seconds of monthly deviation	–20 °C to +70 °C V_{CC} = 3.0 V
Frequency voltage coefficient	fo-V_{CC}	± 1.0 × 10^{-6} / V Max.	+25 °C V_{CC} = 2.2 V to 5.5 V
Current consumption	I_{CC}	6.0 µA (Max.) 3.0 µA (Typ.)	V_{CC} = 5.0 V , No load condition
		4.0 µA (Max.) 1.7 µA (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} → 80 % V_{CC}
Fall time	t_f	200 ns Max.	CMOS load 80 % V_{CC} → 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	± 3.0 × 10^{-6} / year	+25 °C V_{CC} = 3.0 V , first year

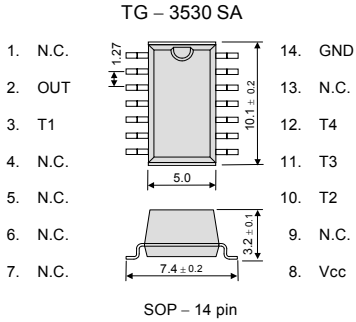
∗1) V_{CC} rise time< 10ms (10 % V_{CC} – 90 % V_{CC})
∗2) If not specifically indicated, –40 °C to +85 °C.

■Frequency temperature coefficient (Ex.)



■Terminal connection

TG – 3530 SA



SOP – 14 pin

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

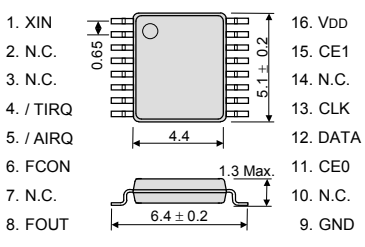
RX-4574 SG

- 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

RX – 4574 SG



VSOP - 16 pin

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For Automotive	►The products have been designed for high reliability applications such as Automotive.

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Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9