



Product Number  
**TG7050CKN: X1G005661xxxx14**  
**TG7050SKN: X1G005671xxxx14**  
**TG7050CMN: X1G005681xxxx14**  
**TG7050SMN: X1G005691xxxx14**

**TCXO HIGH STABILITY**  
**105 °C HIGH TEMPERATURE**

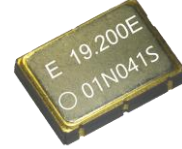
# TG7050CKN / TG7050SKN

# TG7050CMN / TG7050SMN

- Frequency range : 10 MHz to 54 MHz
- Supply voltage : 3.3 V Typ.
- Frequency / temperature characteristics :  $\pm 0.1 \times 10^{-6}$  Max. (-40 °C to +105 °C)
- Free-run accuracy :  $\pm 4.6 \times 10^{-6}$  Max. / 20 years (for Stratum3)
- External dimensions : 7.0 × 5.0 × 1.5 mm (10 pins or 4 pins)
- Applications : Network synchronization, BTS, Microwave, Stratum3, SyncE, IEEE1588
- Features : 105 °C High temp, High stability



TG7050CKN  
 TG7050SKN  
 (10 pins)



TG7050CMN  
 TG7050SMN  
 (4 pins)

## Specifications (characteristics)

Item	Symbol	CMOS	Clipped sine wave	Condition
Output frequency range	fo	10 MHz to 54 MHz		Please contact us about available frequencies.
Supply voltage	V <sub>CC</sub>	3.3 V ±5 %		
Storage temperature	T <sub>stg</sub>	-40 °C to +105 °C		Storage as single product.
Operating temperature	T <sub>use</sub>	-40 °C to +105 °C		
a) Frequency tolerance	f <sub>tol</sub>	±1.0 × 10 <sup>-6</sup> Max.		After reflow, +25 °C
b) Frequency/temperature characteristics	fo-Tc	±0.1 × 10 <sup>-6</sup> Max.		-40 °C to +105 °C
c) Frequency/load coefficient	fo-Load	±0.1 × 10 <sup>-6</sup> Max.		Load ±10 %
d) Frequency/voltage coefficient	fo-V <sub>CC</sub>	±0.1 × 10 <sup>-6</sup> Max.		V <sub>CC</sub> ± 5 %
e) Frequency aging	f <sub>age</sub>	±0.5 × 10 <sup>-6</sup> Max.		+25 °C, First year
		±3.0 × 10 <sup>-6</sup> Max.		+25 °C, 20 years
Holdover stability (Constant temperature)	-	±0.01 × 10 <sup>-6</sup> Max. (+25 °C, 24 hours)		After 10 days of continuous operation
		±0.04 × 10 <sup>-6</sup> Max. (+25 °C, 24 hours)		After 48 hours of continuous operation
Wander generation (MTIE, TDEV)		Compliant with GR-1244CORE, ITU-T G.8262		
Free-run accuracy	-	±4.6 × 10 <sup>-6</sup> Max. / 20 years		This includes Item a), b), c), d) and e)
Current consumption	I <sub>CC</sub>	7.0 mA Max.	6.0 mA Max.	10 MHz ≤ fo ≤ 26 MHz
		9.0 mA Max.		26 MHz < fo ≤ 40 MHz
		10.0 mA Max.		40 MHz < fo ≤ 54 MHz
Symmetry	SYM	45 % to 55 %	-	GND level (DC cut)
Output voltage	V <sub>OH</sub>	90 % V <sub>CC</sub> Min.	-	
	V <sub>OL</sub>	10 % V <sub>CC</sub> Max.	-	
Rise time / Fall time	tr/tf	8.0 ns Max.	-	10 % V <sub>CC</sub> to 90 % V <sub>CC</sub> level, Load:15 pF
Start-up time	t <sub>str</sub>	5 ms. Max.		T = 0 at 90 % V <sub>CC</sub>
Output level	V <sub>pp</sub>	-	0.8 V Min.	Peak to Peak
Output load condition	Load	15 pF	10 kΩ/10 pF	
Input voltage	V <sub>IH</sub>	70 % V <sub>CC</sub> Min.		OE terminal (Enable voltage)
	V <sub>IL</sub>	30 % V <sub>CC</sub> Max.		OE terminal (Disable voltage)

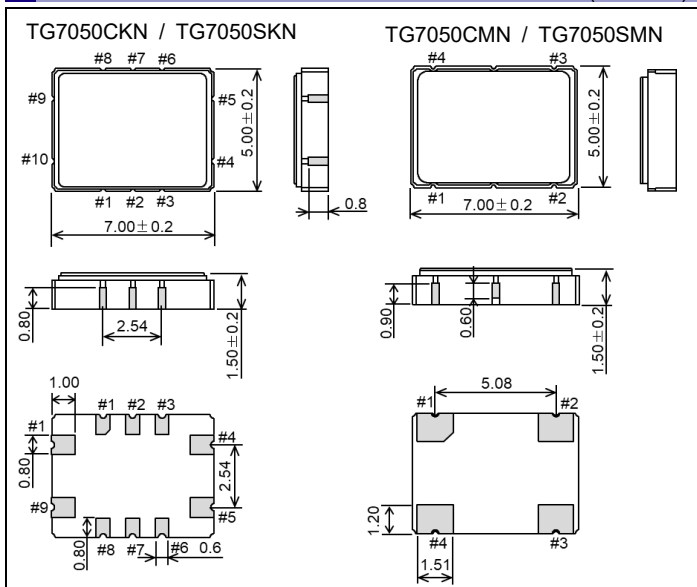
\* Note : Please contact us for requirements not listed in this specification.

Product Name **TG7050CKN30.720000MHzCAHHGA**  
 (Standard form) ① ②③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Model ② Output (C: CMOS, S: Clipped sine wave) ③ Package type (K: 10 pins, M: 4 pins) ④ Frequency ⑤ Supply voltage (C: 3.3 V Typ.)
- ⑥ Frequency/temperature characteristics (A:  $\pm 0.1 \times 10^{-6}$  Max.) ⑦ Operating temperature (H: -40 °C to +105 °C)
- ⑧ OE function (H: Active High, N: Non) ⑨ V<sub>C</sub> function (G: V<sub>C</sub> Non) ⑩ Internal identification code ("A" is default)

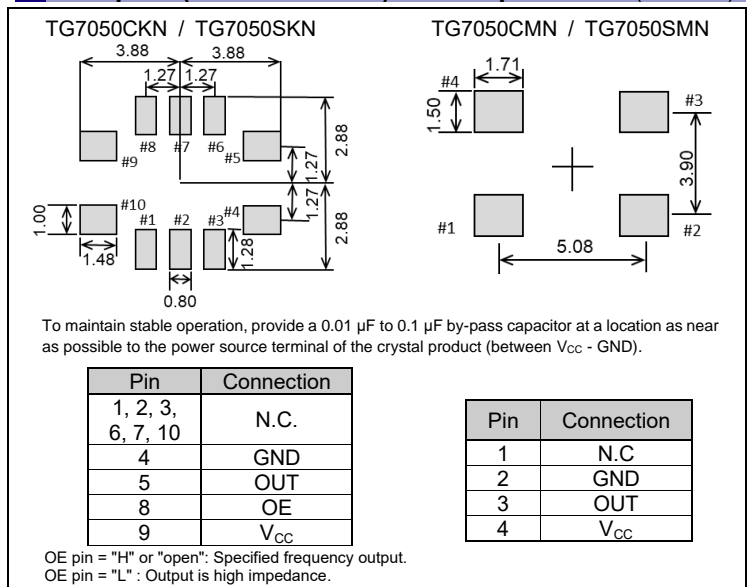
## External dimensions

(Unit :mm)



## Footprint (Recommended) / Pin Map

(Unit :mm)



## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.





ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

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IATF 16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

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	► Pb free.
	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
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