

TCXO HIGH STABILITY  
105 °C HIGH TEMPERATURE



Product Number  
**TG7050CKN: X1G005661xxx99**  
**TG7050SKN: X1G005671xxx99**  
**TG7050CMN: X1G005681xxx99**  
**TG7050SMN: X1G005691xxx99**

# 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, Stratum3, BTS, SyncE, IEEE1588, Microwave, BTS
- 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	f <sub>o</sub>	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	f <sub>o</sub> -Tc	±0.1 × 10 <sup>-6</sup> Max.		-40 °C to +105 °C
c) Frequency/load coefficient	f <sub>o</sub> -Load	±0.1 × 10 <sup>-6</sup> Max.		Load ± 10 %
d) Frequency/voltage coefficient	f <sub>o</sub> -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 ≤ f <sub>o</sub> ≤ 26 MHz
		9.0 mA Max.		26 MHz < f <sub>o</sub> ≤ 40 MHz
		10.0 mA Max.		40 MHz < f <sub>o</sub> ≤ 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>	-		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)

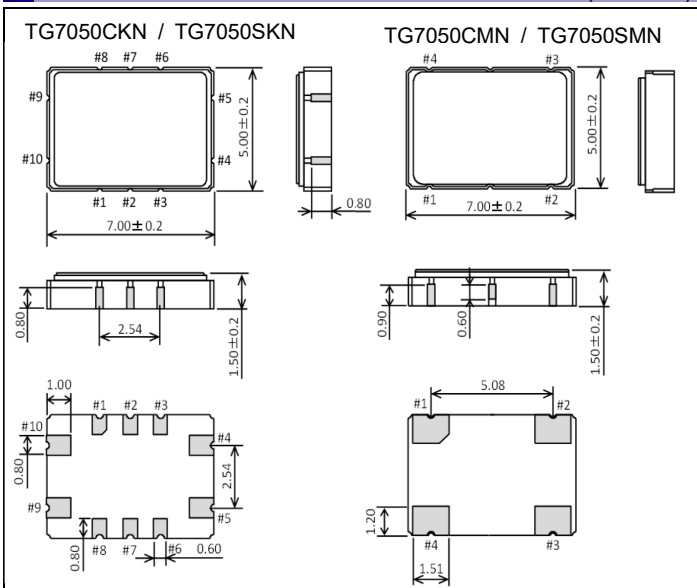
\* Note : Please contact us for requirements not listed in this specification.

Product Name **TG7050CKN30.720000MHzCAHHGA**  
 (Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

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

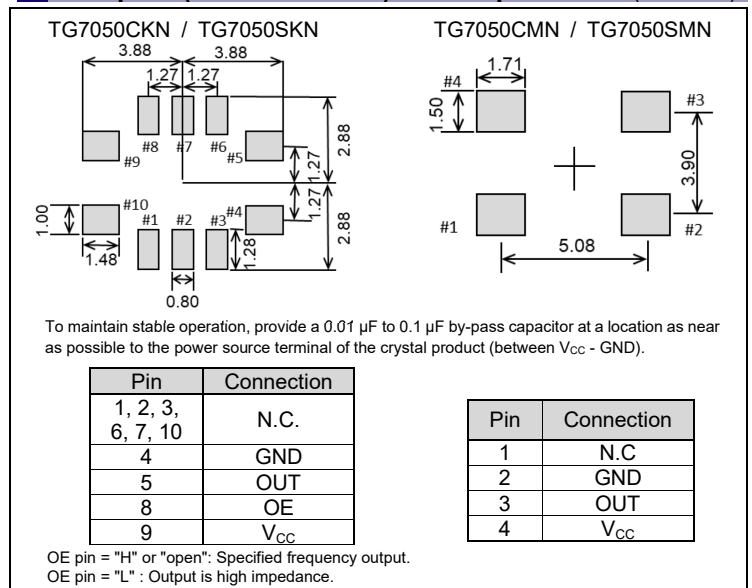
### External dimensions

(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.

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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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