

TCXO / VC-TCXO  
HIGH STABILITY



Product Number  
TG5032CFN : X1G005391xxxxxx  
TG5032SFN : X1G005401xxxxxx

TG5032CFN / TG5032SFN

- Frequency range : 10 MHz to 40 MHz
- Supply voltage : 3.3 V Typ.
- Frequency / temperature characteristics :  $\pm 0.1 \times 10^{-6}$  Max. (-40 °C to +85 °C)
- Frequency aging :  $\pm 3.0 \times 10^{-6}$  Max. / 20years
- External dimensions: 5.0 x 3.2 x 1.45 mm (4 pins)
- Applications : Small Cells, Stratum3, SyncE, IEEE1588
- Features : High stability, Wide temperature range



Specifications (characteristics)

Item	Symbol	TG5032CFN (CMOS output)		TG5032SFN(Clipped sine wave)		Conditions / Remarks
		TCXO	VC-TCXO	TCXO	VC-TCXO	
Output frequency range	fo	10 MHz to 40 MHz				Standard frequency
Supply voltage	V <sub>CC</sub>	10, 12.8, 19.2, 20, 24.576, 25, 25.6, 26, 30.72, 38.4, 38.88, 40 MHz				
Storage temperature	T <sub>stg</sub>	C: 3.3 V $\pm$ 5 % (Supply voltage range: 2.375 V to 3.63 V)				Storage as single product
Operating temperature	T <sub>use</sub>	-40 °C to +90 °C				Standard temp. range
a) Frequency tolerance	f <sub>tol</sub>	G: -40 °C to +85 °C				After reflow, +25 °C
b) Frequency/temperature Characteristics	fo-Tc	$\pm 1.0 \times 10^{-6}$ Max.				Reference to (fmax + fmin) / 2
c) Frequency/load coefficient	fo-Load	A: $\pm 0.1 \times 10^{-6}$ Max. / -40 °C to +85 °C				
d) Frequency/voltage coefficient	fo-V <sub>CC</sub>	H: $\pm 0.25 \times 10^{-6}$ Max. / -40 °C to +85 °C				
e) Frequency aging	f <sub>age</sub>	B: $\pm 0.28 \times 10^{-6}$ Max. / -40 °C to +85 °C				Load $\pm$ 10 %
Holdover stability (Constant temperature)	-	$\pm 0.1 \times 10^{-6}$ Max.				V <sub>CC</sub> $\pm$ 5%
Wander generation (MTIE, TDEV)	-	$\pm 0.1 \times 10^{-6}$ Max.				+25 °C, First year
Free-run accuracy	-	$\pm 0.5 \times 10^{-6}$ Max.				+25 °C, 20 years
Current consumption	I <sub>CC</sub>	$\pm 3.0 \times 10^{-6}$ Max.				After 10 days of continuous operation.
Input resistance	R <sub>in</sub>	$\pm 0.01 \times 10^{-6}$ Max. (+25 °C, 24 hours)				After 48 hours of continuous operation.
Frequency control range	f <sub>cont</sub>	$\pm 0.04 \times 10^{-6}$ Max. (+25 °C, 24 hours)				Compliant with GR-1244CORE, ITU-T G.8262
Frequency change polarity	-	-				This includes Item a), b), c), d) and e)
Symmetry	SYM	$\pm 4.6 \times 10^{-6}$ Max.				10 MHz $\leq$ fo $\leq$ 26 MHz
Output voltage	V <sub>OH</sub> V <sub>OL</sub>	5.0 mA Max. 6.0 mA Max.		5.0 mA Max.		26 MHz < fo $\leq$ 40 MHz
Output level	V <sub>pp</sub>	-		-		Vc - GND (DC)
Rise time / Fall time	tr/tf	-		-		D : Vc = 1.5 V $\pm$ 1.0 V at V <sub>CC</sub> = 3.3 V
Start-up time	t <sub>str</sub>	-		-		E : Vc = 1.65 V $\pm$ 1.0 V at V <sub>CC</sub> = 3.3 V
Output load condition	Load	15 pF		10 k $\Omega$ // 10 pF		50 % V <sub>CC</sub> level, L_CMOS $\leq$ 15 pF

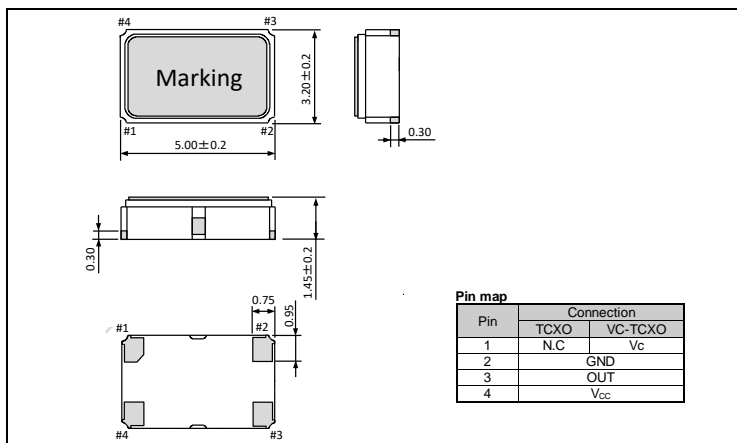
\* Note : Please contact us for requirements not listed in this specification.

Product Name TG5032 C FN 30.720000MHz C A G N D A  
(Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Model ② Output (C: CMOS, S: Clipped sine wave) ③ Frequency ④ Supply voltage (C: 3.3 V Typ.)
- ⑤ Frequency / temperature characteristics (A:  $\pm 0.1 \times 10^{-6}$  Max., H:  $\pm 0.25 \times 10^{-6}$  Max., B:  $\pm 0.28 \times 10^{-6}$  Max.)
- ⑥ Operating temperature (G: -40 °C to +85 °C) ⑦ OE function (N: Non)
- ⑧ Vc function (A: Vc = any, D: Vc = 1.5 V, E: Vc = 1.65 V, N: Non) ⑨ Internal identification code ("A" is default)

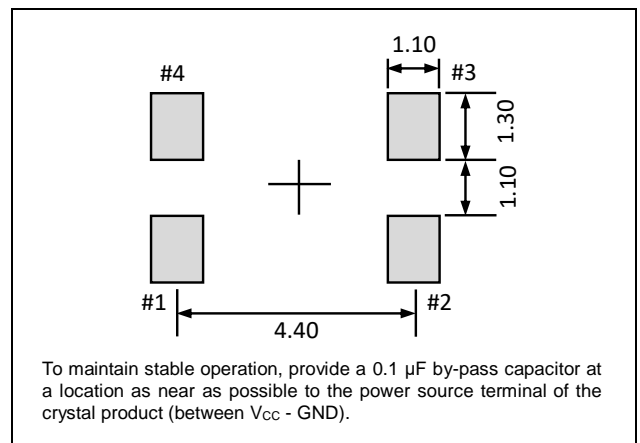
External dimensions

(Unit : mm)



Footprint (Recommended)

(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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