TCXO HIGH STABILITY
105 ºC HIGH TEMPERATURE

Product Number
TG-5510CA: X1G006001xxxx99
TG-5511CA: X1G006011xxxx99

TG-5510CA / TG-5511CA

- Frequency range : 10 MHz to 54 MHz
- Supply voltage : 3.3 V Typ.
- Frequency / temperature characteristics : ±0.28 × 10^{-6} Max. (-40 ºC to +85 ºC, 105 ºC option)
- Free-run accuracy : ±4.6 × 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 ºC High temp, High stability

TG-5510CA
(10 pins)

TG-5511CA
(4 pins)

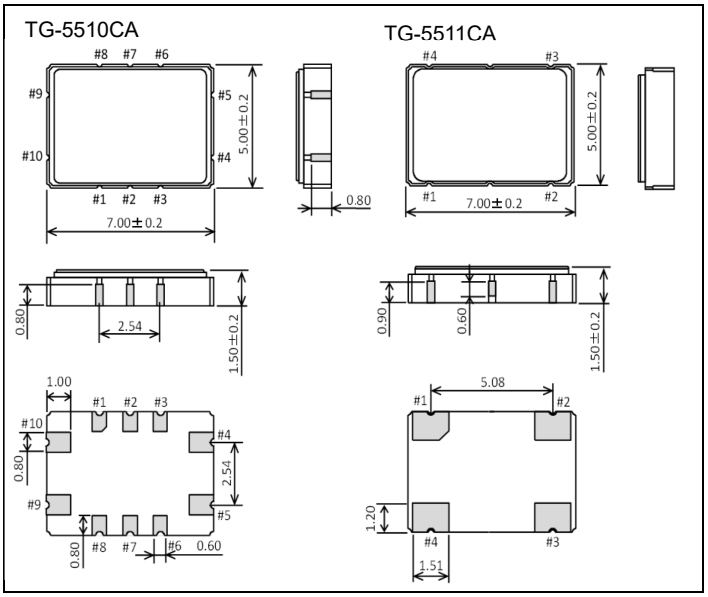
Specifications (characteristics)

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_{CC}	3.3 V ± 5 %		
Storage temperature	T_stg	-40 °C to +105 °C		Storage as single product.
Operating temperature	T_use	-40 °C to +85 °C (-40 °C to +105 °C)		Standard (Option)
a) Frequency tolerance	f_tol	±1.0 × 10^{-6} Max.		After reflow, +25 °C
b) Frequency/temperature characteristics	fo-Tc	±0.28 × 10^{-6} Max. (±0.25 × 10^{-6} Max.)		Standard (Option)
c) Frequency/load coefficient	fo-Load	±0.1 × 10^{-6} Max.		Load ± 10 %
d) Frequency/voltage coefficient	fo-V_{CC}	±0.1 × 10^{-6} Max.		V_{CC} ± 5 %
e) Frequency aging	f_age	±0.5 × 10^{-6} Max.		+25 °C, First year
		±3.0 × 10^{-6} Max.		+25 °C, 20 years
Holdover stability (Constant temperature)	-	±0.01 × 10^{-6} Max. (+25 °C, 24 hours)		After 10 days of continuous operation
		±0.04 × 10^{-6} 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^{-6} Max. / 20 years		This includes Item a), b), c), d) and e)
Current consumption	I_{CC}	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_{OH}	90 % V_{CC} Min.	-	
	V_{OL}	10 % V_{CC} Max.	-	
Rise time / Fall time	tr/tf	8.0 ns Max.	-	10 % V_{CC} to 90 % V_{CC} level, Load: 15 pF
Start-up time	t_str	5 ms. Max.		t = 0 at 90 % V_{CC}
Output level	Vpp	-	0.8 V Min.	Peak to Peak
Output load condition	Load	15 pF	10 kΩ // 10 pF	
Input voltage	V_{IH}	70% V_{CC} Min.		OE terminal (Enable voltage)
	V_{IL}	30% V_{CC} Max.		OE terminal (Disable voltage)

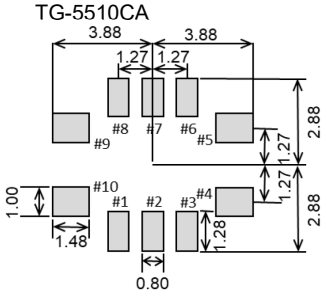
* Note : Please contact us for requirements not listed in this specification.

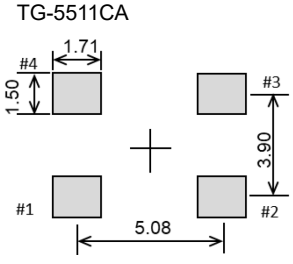
Product Name (Standard form): TG-5510CA-*** 30.720000MHz
①Model ②Package type ③Spec segment (Please contact us) ④Frequency

External dimensions (Unit : mm)



Footprint (Recommended) / Pin Map (Unit : mm)





To maintain stable operation, provide a 0.01 µF to 0.1 µF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between V_{CC} - GND).

Pin	Connection
1, 2, 3, 6, 7, 10	N.C.
4	GND
5	OUT
8	OE
9	V_{CC}

OE pin = "H" or "open": Specified frequency output.
OE pin = "L" : Output is high impedance.

Pin	Connection
1	N.C
2	GND
3	OUT
4	V_{CC}

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.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs, Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired IATF 16949 certification that is requested strongly by major automotive manufacturers as standard.

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

►Explanation of the mark that are using it for the catalog

	►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.
	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).