



TCXO / VC-TCXO
ULTRA HIGH STABILITY

TG5032CAN
TG5032SAN



Product Number (please contact us)
TG5032CAN :X1G004431xxxxxx
TG5032SAN :X1G004441xxxxxx



Actual size



- Frequency range : 10 MHz to 50 MHz
- Supply voltage : 3.3 V Typ. / 5.0V Typ.
- Frequency / temperature characteristics : $\pm 0.1 \times 10^{-6}$ Max. *1
- Frequency aging : $\pm 0.02 \times 10^{-6}$ Max./24 hours *2
- External dimensions: 5.0 x 3.2 x 1.45 mm (10 pads)
- Applications : FemtoCell, Small Cells
- Features : Ultra high stability

Specifications (characteristics)

Item	Symbol	TG5032CAN (CMOS output)		TG5032SAN(Clipped sine wave)		Conditions / Remarks	
		VC-TCXO	TCXO	VC-TCXO	TCXO		
Output frequency range	f _o	10 MHz to 50 MHz 19.2, 26, 30.72, 40 MHz				Standard frequency	
Supply voltage	V _{CC}	C: 3.3 V $\pm 5\%$, H: 5.0 V $\pm 5\%$ (Supply voltage range :2.7 V to 5.5 V)					
Storage temperature	T _{stg}	-40 °C to +90 °C				Storage as single product	
Operating temperature	T _{use}	A: 0 °C to +70 °C				Standard temp. range	
Frequency tolerance	f _{tol}	$\pm 2.0 \times 10^{-6}$ Max.				After reflow, +25 °C	
Frequency/temperature Characteristics *1	f _o -Tc	A: $\pm 0.1 \times 10^{-6}$ Max. / A: 0 to +70 °C (standard spec.)				C: 0 to +85 °C or L: -10 to +70 °C : Option1 or 2 (Temperature range)	
		H: $\pm 0.25 \times 10^{-6}$ Max. / G: -40 to +85 °C				Option3	
		$\pm 0.08 \times 10^{-6}$ Max. / +50 to +70 °C, $\pm 0.1 \times 10^{-6}$ Max. / +15 to +85 °C and $\pm 0.25 \times 10^{-6}$ Max. / -5 to +85 °C				Option4 (Please contact us about suffix)	
		$\pm 0.08 \times 10^{-6}$ Max. / +40 to +60 °C, $\pm 0.1 \times 10^{-6}$ Max. / 0 to +70 °C and $\pm 0.25 \times 10^{-6}$ Max. / -20 to +70 °C				Option5 (Please contact us about suffix)	
Frequency/load coefficient	f _o -Load	$\pm 0.1 \times 10^{-6}$ Max. (10 MHz \leq f _o \leq 40 MHz) $\pm 0.2 \times 10^{-6}$ Max. (40 MHz < f _o \leq 50 MHz)				Load ± 10 %	
Frequency/voltage coefficient	f _o -V _{CC}	$\pm 0.1 \times 10^{-6}$ Max. (10 MHz \leq f _o \leq 40 MHz) $\pm 0.2 \times 10^{-6}$ Max. (40 MHz < f _o \leq 50 MHz)				V _{CC} $\pm 5\%$	
Frequency aging *2	f _{age}	$\pm 0.02 \times 10^{-6}$ Max. $\pm 1.0 \times 10^{-6}$ Max.				+25 °C, 24h +25 °C, First year	
Current consumption	I _{CC}	5.0 mA Max. / 6.0 mA Max.		5.0 mA Max.		10 MHz \leq f _o \leq 26 MHz (3.3V / 5.0V)	
		6.0 mA Max. / 8.0 mA Max.				26 MHz < f _o \leq 40 MHz (3.3V / 5.0V)	
		8.0 mA Max. / 10.0 mA Max.				40 MHz < f _o \leq 50 MHz (3.3V / 5.0V)	
Input resistance	R _{in}	100 k Ω Min.	—	100 k Ω Min.	—	Vc- GND (DC)	
Frequency control range	f _{cont}	$\pm 5 \times 10^{-6}$ to $\pm 10 \times 10^{-6}$	—	$\pm 5 \times 10^{-6}$ to $\pm 10 \times 10^{-6}$	—	J,D : Vc=1.5 V \pm 1.0 V at V _{CC} =3.3 V K,E : Vc=1.65 V \pm 1.0 V at V _{CC} =3.3 V L,H : Vc=2.5 V \pm 2.0 V at V _{CC} =5.0 V	
Frequency change polarity	—	Positive polarity	—	Positive polarity	—		
Symmetry	SYM	45 % to 55 %				GND level (DC cut)	
Output voltage	V _{OH}	90 % V _{CC} Min.					
	V _{OL}	10 % V _{CC} Max.					
Output level	V _{PP}	—				0.8 V Min.	Peak to Peak
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}	2.0 sec. Max.(Filter: Standard) / 5.0 ms Max.(Non-Filter: Option)				—	T=0 at 90% V _{CC}
Output load condition	Load	15 pF		10 k Ω /10 pF			

* Note : Please contact us for requirements not listed in this specification. *1 Based on frequency at (f_{max}+f_{min})/2. *2 After 48 hours operating

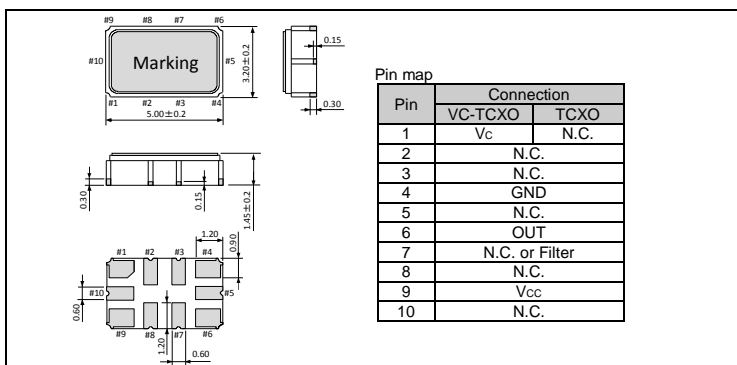
Product Name **TG5032 C AN 19.200000MHz** C A A N D A
(Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

⑩ Vc function (symbol table)					
Vc [V]	Non	1.5	1.65	2.5	Any
Filter ON	G	J	K	L	F
Non Filter	N	D	E	H	A

- 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.) ⑥ Operating temperature (A: 0 °C to +70 °C)
- ⑦ OE function (N: Non) ⑧ Vc function(Refer to symbol table) ⑨ Internal identification code ("A" is default)

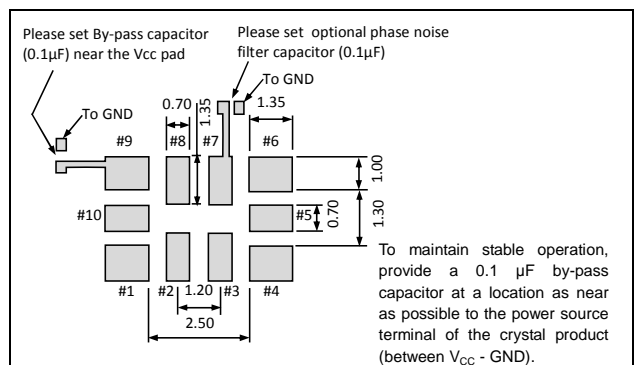
External dimensions

(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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► 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).

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