

TCXO/VC-TCXO HIGH STABILITY







Product Number (Please contact us) X1G004691xxxx00

TG2016SBN

•Output frequency : 13 MHz to 52MHz

•Supply voltage : 1.8 V Typ./ 2.8 V Typ./ 3.0 V Typ./ 3.3 V Typ.

•Frequency / temperature characteristics

: $\pm 0.5 \times 10^{-6}$ Max. or $\pm 2.0 \times 10^{-6}$ Max.

•External dimensions: 2.0 x 1.6 x 0.73 mm

Applications : GPS, RF

Wireless communication devices (CDMA, WCDMA, LTE, WiMAX, other)

•Features : Wide supply voltage (1.7 to 3.63V)

Low noise





Actual size

50

Specifications (characteristics)

Item	Symbol	VC-TCXO	TCXO	Conditions / Remarks
		13 MHz to 52MHz		
Output frequency range	fo	13 MHz, 16.367667 MHz, 16.368 MHz, 16.369 MHz, 16.8 MHz, 19.2 MHz, 26 MHz, 27MHz, 30 MHz, 32 MHz, 33.6MHz, 38.4 MHz, 40 MHz and 52 MHz		Standard frequency
Supply voltage	Vcc	1.8 V ±0.1 V / 2.8 V ±5 % / 3.0 V ±5 % / 3.3 V ±5 %		Supply voltage range :1.7 V to 3.63 V
Storage temperature	T_stg	-40 ℃ to +90 ℃		Storage as single product.
Operating temperature	T_use	-40 °C to +85 °C		
Frequency tolerance	f_tol	$\pm 2.0 \times 10^{-6}$ Max.		After reflow, +25 °C
Frequency/temperature characteristics	fo-Tc	$\pm 0.5 \times 10^{-6}$ Max. / -30 °C to +85 °C		High stability version (for GPS)
		$\pm 2.0 \times 10^{-6}$ Max. / -30 °C to +85 °C		Standard stability version (for RF)
		$\pm 0.5 \times 10^{-6}$ Max. / -40 °C to +85 °C (Option)		Customized product
Frequency/load coefficient	fo-Load	$\pm 0.2 \times 10^{-6}$ Max.		10 kΩ // 10 pF ±10 %
Frequency/voltage coefficient	fo-Vcc	$\pm 0.2 \times 10^{-6}$ Max.		Vcc ± 5 %
Frequency aging	f_age	±1.0 × 10 ⁻⁶ Max.		+25 °C, First year, 13 MHz≤ fo ≤40 MHz
		±1.5 × 10 ⁻⁶ Max.		+25 °C ,First year, 40 MHz< f ₀ ≤52 MHz
Current consumption	Icc	1.5 mA Max.		13 MHz≤ fo ≤26 MHz
<u>'</u>			nA Max	26MHz <f0< td=""></f0<>
Input resistance	Rin	500 kΩ Min.	-	Vc - GND (DC)
Frequency control range	f_cont	$\pm 8.0 \times 10^{-6} \text{ to } \pm 15.0 \times 10^{-6}$		$Vc = 0.9 V \pm 0.6 V (Vcc = 1.8 V) \text{ or}$
			-	$Vc = 1.4 V \pm 1.0 V (Vcc = 2.8 V) or$
				$Vc = 1.5 V \pm 1.0 V (Vcc = 3.0 V) or$
				Vc =1.65 V ±1.0 V (Vcc =3.3 V)
Frequency change polarity	-	Positive polarity	-	
Symmetry	SYM	40 % to 60 %		GND level (DC cut)
Output voltage	VPP	0.8 V Min.		Peak to Peak
Output load condition	Load_R Load_C	10 kΩ 10 pF		DC cut capacitor = 0.01 μF

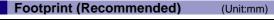
^{*} Note: Please contact us for requirements not listed in this specification.

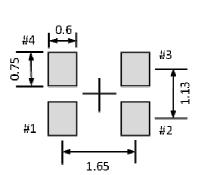
Product Name (Standard form)

① Model ②Output (S: Clipped sine wave) ③Frequency ④Supply voltage (T: 1.8 to 3.3 V)

⑤Frequency / temperature characteristics (C: ±0.5 × 10⁻⁶ Max.) ⑥Operating temperature (N: -30 °C to +85 °C)

External dimensions (Unit:mm) 2.0±0.15 $.6\pm0.15$ Pin map Connection C0<u>.15</u> Pin 1.58 VC-TCXO TCXO 40 N.C. 2 GND 3 OUT Vcc #3 1.2





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

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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In order provide high quality and reliable products and services than meet customer needs.

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ISO/TS16949 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.



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

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