

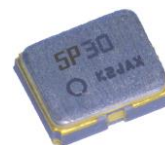
VC-TCXO / TCXO / TCXO-Standby
For Automotive
85 °C High temperature range



Product Number (Please contact us)
TG2016SLA : X1G005741xxxx16

TG2016SLA

- Output frequency : 13 MHz to 55 MHz
- Supply voltage : 1.8 V Typ. / 3.3 V Typ.
- Frequency / temperature characteristics : $\pm 0.5 \times 10^{-6}$ Max. (-40 °C to +85 °C)
- External dimensions: 2.0 x 1.6 x 0.7 mm Max.
- Applications : GNSS for Automotive, V2X (TCU, DSRC)*
- Features : Low noise, Stand-by function (ST)
- Conforms to AEC-Q100



TG2016SLA

(2.0 x 1.6 x 0.7 mm)

* GNSS: Global Navigation Satellite System V2X: Vehicle to Everything TCU: Telematics control unit DSRC: Dedicated Short Range Communication

Specifications (characteristics)

Item	Symbol	VC-TCXO	TCXO	TCXO-Standby	Conditions / Remarks
Output frequency range	fo	13 MHz to 55 MHz			Standard frequency
		26 MHz, 38.4 MHz, 49.58 MHz			
Supply voltage	V _{CC}	1.8 V ± 0.1 V / 3.3 V ± 5 %			Supply voltage range :1.7 V to 3.63 V
Storage temperature	T _{stg}	-55 °C to +125 °C			Storage as single product.
Operating temperature	T _{use}	G: -40 °C to +85 °C			Standard
Frequency tolerance	f _{tol}	$\pm 2.0 \times 10^{-6}$ Max.			After 3 times reflow, +25 °C
Frequency/temperature characteristics	fo-T _C	C: $\pm 0.5 \times 10^{-6}$ Max.			
Frequency/load coefficient	fo-Load	$\pm 0.2 \times 10^{-6}$ Max.			10 k Ω // 10 pF ± 10 %
Frequency/voltage coefficient	fo-V _{CC}	$\pm 0.2 \times 10^{-6}$ Max.			V _{CC} ± 5 %
Frequency aging	f _{age}	$\pm 1.0 \times 10^{-6}$ Max.			+25 °C, First year, 13 MHz \leq fo \leq 20 MHz, 26 MHz \leq fo \leq 40 MHz
		$\pm 1.5 \times 10^{-6}$ Max.			+25 °C, First year, 20 MHz < fo < 26 MHz, 40 MHz < fo \leq 55 MHz
Current consumption	I _{CC}	2.0 mA Max. 2.5 mA Max.			13 MHz \leq fo \leq 40 MHz 40 MHz < fo \leq 55 MHz
Input resistance	Z _{in}	500 k Ω Min.		-	V _C - GND (DC)
Frequency control range	f _{cont}	$\pm 8.0 \times 10^{-6}$ to $\pm 15.0 \times 10^{-6}$		-	B: V _C = 0.9 V ± 0.6 V (V _{CC} = 1.8 V) or E: V _C = 1.65 V ± 1.0 V (V _{CC} = 3.3 V)
Frequency change polarity	f _{cp}	Positive polarity		-	
Stand-by current	I _{std}			10 μ A Max.	\overline{ST} = GND
Input voltage	V _{IH}			80 % V _{CC} Min.	\overline{ST} terminal
	V _{IL}			20 % V _{CC} Max.	
Symmetry	SYM	40 % to 60 %			GND level (DC cut)
Output voltage	V _{pp}	0.8 V Min.			Peak to Peak
Start-up time	t _{str}	2.0 ms Max.			T = 0 at 90 % V _{CC}
Output load condition	Load _R	10 k Ω			DC cut capacitor = 0.01 μ F
	Load _C	10 pF			
G-sensitivity	S _g	1.5 $\times 10^{-9}$ /G Max.			30 Hz to 3 kHz, sinewave, 3axes

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

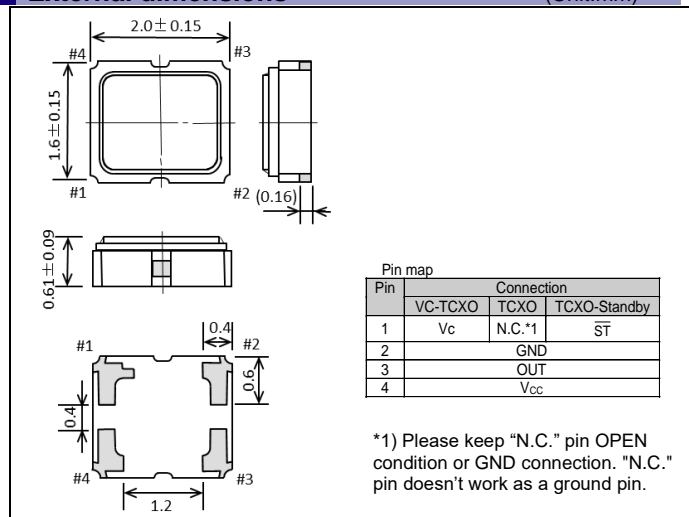
④Supply voltage[V _{CC}], ⑧V _C function[V _C] (Symbol table)			
Voltage [V]	TCXO	VC-TCXO	
④V _{CC} (Typ.)	E: 1.8 C: 3.3	E: 1.8	C: 3.3
⑧V _C (Typ.)	N: Non	B: 0.9	E: 1.65

Product Name **TG2016 SLA 26.000000MHz** **E C G N N M**
 (Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Model(TG2016) ② Output (S: Clipped sine wave)
- ③ Frequency ④ Supply voltage (Refer to symbol table)
- ⑤ Frequency / temperature characteristics (C: $\pm 0.5 \times 10^{-6}$ Max.)
- ⑥ Operating temperature (G: -40 °C to +85 °C) ⑦ ST function (N: Non, S: Standby)
- ⑧ V_C function(Refer to symbol table) ⑨ Internal identification code

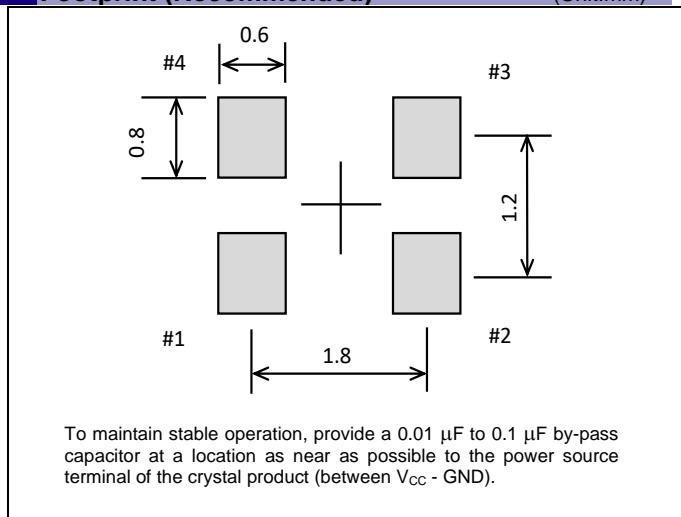
External dimensions

(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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	► 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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