

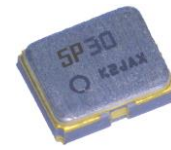
TCXO / VC-TCXO / TCXO-Standby For Automotive 85 °C High temperature range



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 × 1.6 × 0.7 mm Max.
- Applications : GNSS for Automotive, V2X (TCU, DSRC)*
- Features : Low noise, Stand-by function (\overline{ST})
- AEC-Q100 compliant



TG2016SLA

(2.0 × 1.6 × 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	TCXO	VC-TCXO	TCXO-Standby	Conditions / Remarks
Output frequency range	f_o	13 MHz to 55 MHz 26 MHz, 49.58 MHz			Standard frequency
Supply voltage	V_{cc}	1.8 V \pm 0.1 V / 3.3 V \pm 5 %			Supply voltage range: 1.7 V to 3.63 V
Storage temperature range	T_{stg}	-55 °C to +125 °C			Storage as single product.
Operating temperature range	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	f_o -Tc	C: $\pm 0.5 \times 10^{-6}$ Max.			Standard stability version
Frequency/load coefficient	f_o -Load	$\pm 0.2 \times 10^{-6}$ Max.			10 k Ω // 10 pF \pm 10 %
Frequency/voltage coefficient	f_o - V_{cc}	$\pm 0.2 \times 10^{-6}$ Max.			$V_{cc} \pm 5$ %
Frequency aging	f_{age}	$\pm 1.0 \times 10^{-6}$ Max.			+25 °C, First year, 13 MHz $\leq f_o \leq$ 20 MHz, 26 MHz $\leq f_o \leq$ 40 MHz
		$\pm 1.5 \times 10^{-6}$ Max.			+25 °C, First year, 20 MHz < f_o < 26 MHz, 40 MHz < $f_o \leq$ 55 MHz
Current consumption	I_{cc}	2.0 mA Max. 2.5 mA Max.			13 MHz $\leq f_o \leq$ 40 MHz 40 MHz < $f_o \leq$ 55 MHz
Input resistance	Z_{in}	-	500 k Ω Min.	-	V_c - GND (DC)
Frequency control range	f_{cont}	-	$\pm 5.0 \times 10^{-6}$ Min.	-	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	Load_R	10 k Ω			DC cut capacitor = 0.01 μ F
	Load_C	10 pF			
G-sensitivity	G_s	1.5×10^{-9} / G Max.			30 Hz to 3 kHz, sinewave, 3axes

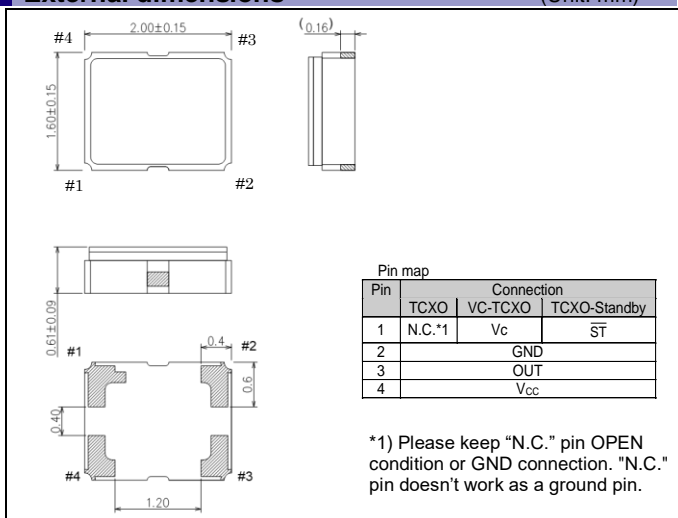
* Note : Please contact us for requirements not listed in this specification.

- 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 Vc function (Refer to symbol table) ⑨ Internal identification code

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

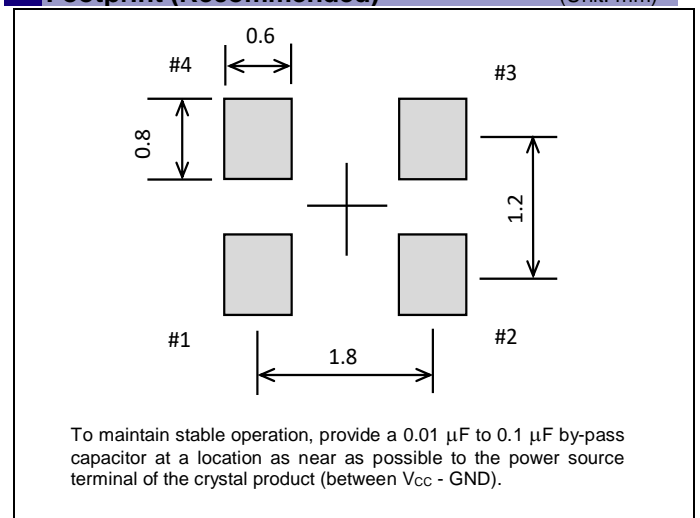
External dimensions

(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.

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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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	► 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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