



# VC-TCXO / TCXO

## HIGH STABILITY / Low noise



Product Number  
**TG2016SMN : X1G005441xxxx25**  
**TG2520SMN : X1G005421xxxx27**

# TG2016SMN / TG2520SMN

- Output frequency : 10 MHz to 55MHz
- 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. (-40 C to +85 C)
  - :  $\pm 2.0 \times 10^{-6}$  Max. (-40 C to +85 C)
- External dimensions: 2.0 x 1.6 x 0.73 mm / 2.5 x 2.0 x 0.8 mm
- Applications : GPS, RF  
Wireless communication devices  
(LTE, WiMAX, Wi-Fi, W-LAN, IoT other)
- Features : Low noise



TG2016SMN  
(2.0 x 1.6 x 0.73 mm)



TG2520SMN  
(2.5 x 2.0 x 0.8 mm)

### Specifications (characteristics)

Item	Symbol	VC-TCXO	TCXO	Conditions / Remarks
Output frequency range	fo	10 MHz to 55MHz		Standard frequency
		16, 16.368, 16.369, 19.2, 20, 24, 25, 26, 27, 27.6, 30, 32, 38.4, 40, 48, 50, 52 MHz		
Supply voltage	Vcc	1.8 V $\pm 0.1$ V / 2.8 V $\pm 5$ % / 3.0 V $\pm 5$ % / 3.3 V $\pm 5$ %		Supply voltage range : 1.7 V to 3.63 V
Storage temperature	T stg	-40 °C to +90 °C		Storage as single product.
Operating temperature	T use	G: -40 C to +85 C		
Frequency tolerance	f tol	$\pm 1.5 \times 10^{-6}$ Max.		After reflow, +25 C
Frequency/temperature characteristics	fo-Tc	C: $\pm 0.5 \times 10^{-6}$ Max. / G: -40 C to +85 C F: $\pm 2.0 \times 10^{-6}$ Max. / G: -40 C to +85 C		Standard stability version
Frequency/load coefficient	fo-Load	$\pm 0.1 \times 10^{-6}$ Max.		10 k $\Omega$ // 10 pF $\pm 10$ %
Frequency/voltage coefficient	fo-Vcc	$\pm 0.1 \times 10^{-6}$ Max.		Vcc $\pm 5$ %
Frequency aging	f age	$\pm 0.5 \times 10^{-6}$ Max.		+25 C, First year, 10MHz, 12 MHz $\leq$ fo $\leq$ 20 MHz, 24 MHz $\leq$ fo $\leq$ 40 MHz
		$\pm 1.5 \times 10^{-6}$ Max.		+25 C, First year, 10 MHz $<$ fo $<$ 12 MHz, 20 MHz $<$ fo $<$ 24 MHz, 40 MHz $<$ fo $\leq$ 55 MHz
Current consumption	Icc	1.5 mA Max.		10 MHz $\leq$ fo $\leq$ 26 MHz
		1.8 mA Max.		26 MHz $<$ fo $\leq$ 40 MHz
		2.0 mA Max.		40 MHz $<$ fo $\leq$ 50 MHz
		2.1 mA Max.		50 MHz $<$ fo $\leq$ 55 MHz
Input resistance	Rin	500 k $\Omega$ Min.	-	Vc - GND (DC)
Frequency control range	f cont	$\pm 8.0 \times 10^{-6}$ to $\pm 12.0 \times 10^{-6}$	-	B: Vc = 0.9 V $\pm 0.6$ V (Vcc = 1.8 V) or C: Vc = 1.4 V $\pm 1.0$ V (Vcc = 2.8 V) or D: Vc = 1.5 V $\pm 1.0$ V (Vcc = 3.0 V) or E: Vc = 1.65 V $\pm 1.0$ V (Vcc = 3.3 V)
Frequency change polarity	-	Positive polarity	-	
Symmetry	SYM	45 % to 55 %		GND level (DC cut)
Output voltage	Vpp	0.8 V Min.		Peak to Peak
Start-up time	t str	1.0 ms Max.		T=0 at 90% Vcc
Output load condition	Load R	10 k $\Omega$		DC cut capacitor = 0.01 $\mu$ F
	Load C	10 pF		

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

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

① Model (TG2016, TG2520)

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., F:  $\pm 2.0 \times 10^{-6}$  Max.)

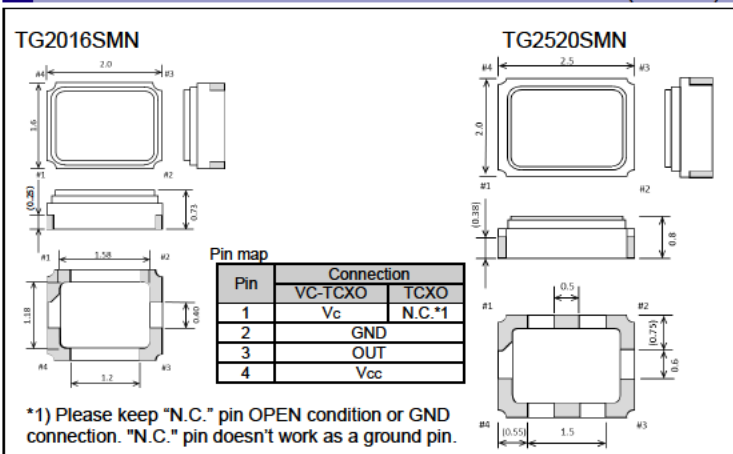
⑥ Operating temperature (G: -40 C to +85 C) ⑦ ST function (N: Non)

⑧ Vc function (Refer to symbol table, A: Vc = any) ⑨ Internal identification code ("M" is default)

④ Supply voltage [Vcc], ⑧ Vc function [Vc] (Symbol table)				
Voltage [V]	TCXO		VC-TCXO	
	④ Vcc (Typ.)	E: 1.8 M: 2.8 to 3.3	E: 1.8	B: 2.8
⑧ Vc (Typ.)	N: Non	B: 0.9	C: 1.4	D: 1.5 E: 1.65

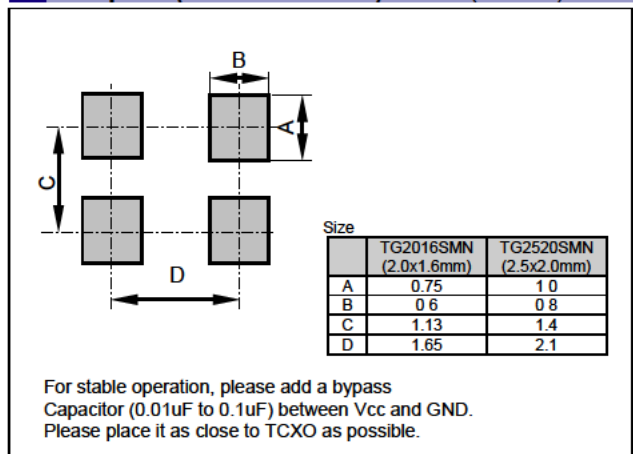
### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit:mm)



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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.

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	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
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