VC-TCXO / TCXO
HIGH STABILITY / Low noise

Pb Free RoHS Compliant

Product Number (Please contact us)
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
  : ±0.5 × 10^{-6} Max. (-40 °C to +85 °C)
  : ±2.0 × 10^{-6} Max. (-40 °C to +85 °C)
- External dimensions: 2.0 × 1.6 × 0.73 mm / 2.5 × 2.0 × 0.8 mm
- Applications : GPS, RF
  Wireless communication devices
  (LTE, WiMAX, Wi-Fi, W-LAN, IoT other)
- Features : Low noise


TG2016SMN
(2.0 × 1.6 × 0.73 mm)


TG2520SMN
(2.5 × 2.0 × 0.8 mm)

Specifications (characteristics)

Item	Symbol	VC-TCXO	TCXO	Conditions / Remarks
Output frequency range	f0	10 MHz to 55MHz		
		16, 16.368, 16.369, 19.2, 20, 24, 25, 26, 27, 27.6, 30, 32, 38.4, 40, 48, 50, 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 °C to +90 °C		Storage as single product.
Operating temperature	T_use	G: -40 °C to +85 °C		
Frequency tolerance	f_tol	±1.5 × 10^{-6} Max.		After reflow, +25 °C
Frequency/temperature characteristics	f0-Tc	C: ±0.5 × 10^{-6} Max. / G: -40 °C to +85 °C F: ±2.0 × 10^{-6} Max. / G: -40 °C to +85 °C		Standard stability version
Frequency/load coefficient	f0-Load	±0.1 × 10^{-6} Max.		10 kΩ // 10 pF ±10 %
Frequency/voltage coefficient	f0-Vcc	±0.1 × 10^{-6} Max.		Vcc ± 5 %
Frequency aging	f_age	±0.5 × 10^{-6} Max.		+25 °C, First year, 10MHz, 12 MHz≤ f0 ≤20 MHz, 24 MHz≤ f0 ≤40 MHz
		±1.5 × 10^{-6} Max.		+25 °C ,First year, 10 MHz< f0 <12 MHz, 20 MHz< f0 <24 MHz, 40 MHz< f0 ≤55 MHz
Current consumption	Icc	1.5 mA Max.		10 MHz≤ f0 ≤26 MHz
		1.8 mA Max.		26 MHz< f0 ≤40 MHz
		2.0 mA Max.		40 MHz< f0 ≤50 MHz
		2.1 mA Max.		50 MHz< f0 ≤55 MHz
Input resistance	Rin	500 kΩ Min.	-	Vc - GND (DC)
Frequency control range	f_cont	±8.0 × 10^{-6} to ±12.0 × 10^{-6}	-	B: Vc =0.9 V ±0.6 V (Vcc =1.8 V) or C: Vc =1.4 V ±1.0 V (Vcc =2.8 V) or D: Vc =1.5 V ±1.0 V (Vcc =3.0 V) or E: Vc =1.65 V ±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 kΩ		DC cut capacitor = 0.01 μF
	Load_C	10 pF		

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

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

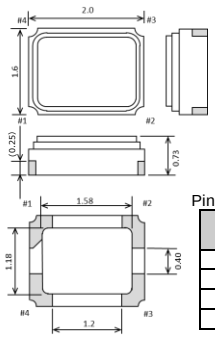
①Model(TG2016, TG2520)
②Output (S: Clipped sine wave) ③Frequency
④Supply voltage (Refer to symbol table) ⑤Frequency / temperature characteristics (C: ±0.5 × 10^{-6} Max., F: ±2.0 × 10^{-6} Max.)
⑥Operating temperature (G: -40 °C to +85 °C) ⑦ST function (N: Non)
⑧Vc function(Refer to symbol table , A: Vc =any) ⑨Internal identification code (“M” is default)

④Supply voltage[Vcc] ,⑧Vc function[Vc] (Symbol table)

Voltage [V]	TCXO	VC-TCXO			
④Vcc (Typ.)	E:1.8 M:2.8 to 3.3	E:1.8	B:2.8	A:3.0	C:3.3
⑧Vc (Typ.)	N: Non	B 0.9	C:1.4	D 1.5	E 1.65

External dimensions (Unit:mm)

TG2016SMN

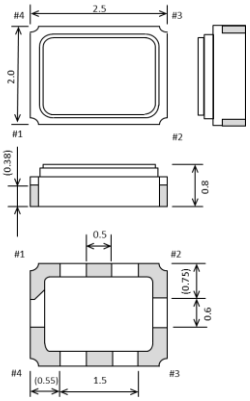


Pin map

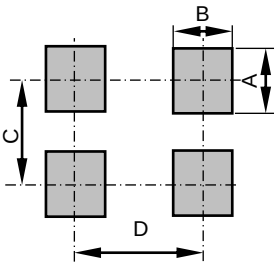
Pin	Connection	
	VC-TCXO	TCXO
1	Vc	N.C.*1
2	GND	
3	OUT	
4	Vcc	

*1) Please keep “N.C.” pin OPEN condition or GND connection. "N.C." pin doesn’t work as a ground pin.

TG2520SMN



Footprint (Recommended) (Unit:mm)



Size

	TG2016SMN (2.0x1.6mm)	TG2520SMN (2.5x2.0mm)
A	0.75	1.0
B	0.6	0.8
C	1.13	1.4
D	1.65	2.1

For stable operation, please add a bypass Capacitor (0.01uF to 0.1uF) between Vcc and GND. Please place it as close to TCXO as possible.

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