



TTS30NSL / VSL

Ultra-compact Temperature Compensated Crystal Oscillator

Features

Reflow solderable, SMD package base offers superior flatness.
 Ultra-compact (2.0 x 1.6), lowest height (0.8t max.), light weight and Low current consumption type.
 High frequency ($f_0=52\text{MHz}$) and low frequency available using built in 1/2 frequency divide down function.

Applications

Suitable for cell phone, base station, GPS and mobile radio application. RoHS compliant

Specifications

Item	Symbol	Specifications		Conditions
		TTS30NS (TCXO)	TTS30VS (VC-TCXO)	
Output frequency	f_0	13.0 MHz to 52.0 MHz		
Supply voltage	Vcc	+1.7V to 3.7V		
Current consumption	Icc	2.0 mA max.		Vcc=2.8 V , 10 kOhm//10 pF
Output voltage	Vpp	0.8V min.		NOTE1) DC coupling
Load	Load_R,C	10kOhm // 10 pF		
Frequency stability				
/ Frequency tolerance	f_{tol}	$\pm 1.0 \times 10^{-6}$ max.		after reflow, at 25 °C
/ Temperature	f_{0_Tc}	$\pm 0.5 \times 10^{-6}$ to $\pm 2.5 \times 10^{-6}$ max.		-30 °C to +85 °C
/ Voltage coefficient	f_{0_Vcc}	$\pm 0.2 \times 10^{-6}$ max.		At Vcc=2.8V \pm 5%
/ Load coefficient	f_{0_Load}	$\pm 0.2 \times 10^{-6}$ max.		at (10kOhm // 10pF) \pm 5%
/ Frequency aging	f_{age}	$\pm 1.0 \times 10^{-6}$ max.		1 year, at 25 °C
Frequency control range	f_{cont}	---	± 5 to $\pm 15 \times 10^{-6}$	Vc=1.4V \pm 1.0V, positive polarity

NOTE 1) DC-cut capacitor of output is not put in TCXO. Please add DC-cut capacitor (1,000pF) in oscillator output line.

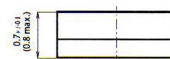
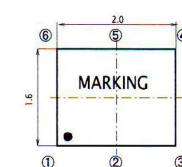
Phase Noise

Frequency Offset (Hz)	Phase Noise (dBc/Hz)
100	-110 typ.
1k	-130 typ.
10k	-145 typ.
100k	-145 typ.

at $f_0=26.000\text{MHz}$ (25 \pm 2°C)

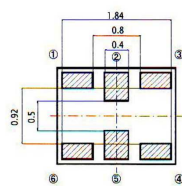
*Please consult us for customized specifications.

Outline



Pin Connections

1. VC (VS)
GND or NC (NS)
2. NC or GND
3. GND
4. OUTPUT
5. NC or GND
6. Vcc



Recommended land pattern(Top View)

