

## Package : TTS30NSL-A7 / TTS30VSL-A7

### Ultra-compact high precision Temperature Compensated Crystal Oscillator (TCXO/VC-TCXO)

#### ◆ Feature

Reflow solderable, SMD package base offers superior flatness.  
 Ultra-compact (2.0×1.6), lowest height (0.8t max), light weight,  
 and low Current consumption type. Low supply voltage (V<sub>cc</sub> =1.7V min)  
 High frequency (f<sub>0</sub>=52MHz) available, and low frequency available  
 using built in 1/2 frequency divide down function . RoHS compliant.



◆ Applications Cell phone, Base station, GPS, and mobile radio application.

#### ◆ Specifications

Note : Modified specifications are available upon request for specific applications.

Item	Symbol	Specifications		Conditions
		TTS30NSL-A7 (TCXO)	TTS30VSL-A7 (VC-TCXO)	
Output frequency	f <sub>0</sub>	13.0 MHz to 52.0 MHz		
Supply voltage	V <sub>cc</sub>	+1.8V ± 5%		+1.7V to +3.3V
Current consumption	I <sub>cc</sub>	2.0mA max.		at V <sub>cc</sub> =+1.8V , 10 kOhm//10 pF
Output voltage	V <sub>pp</sub>	0.8 V min.		NOTE 1) DC coupling
Load	Load_R,C	10 kOhm // 10 pF		
Frequency Stability				
/Frequency tolerance	f <sub>tol</sub>	± 1.0×10 <sup>-6</sup> max.		After reflow , at +25 °C
/ temperature characteristics	f <sub>0</sub> -T <sub>C</sub>	± 0.5×10 <sup>-6</sup> max.		-30 °C to +85 °C , at V <sub>c</sub> =+0.9V
/ voltage coefficient	f <sub>0</sub> -V <sub>cc</sub>	± 0.2×10 <sup>-6</sup> max.		at V <sub>cc</sub> =+1.8V ± 5%
/load coefficient	f <sub>0</sub> -Load	± 0.2×10 <sup>-6</sup> max.		at (10kOhm // 10pF) ± 10%
/ Frequency ageing	f <sub>age</sub>	NOTE 2) ± 1.0×10 <sup>-6</sup> max.		1 year , at +25 °C
Frequency controlled range	f <sub>cont</sub>	---	±3 to ±5×10 <sup>-6</sup>	V <sub>c</sub> =+0.9V±0.6V , Positive polarity

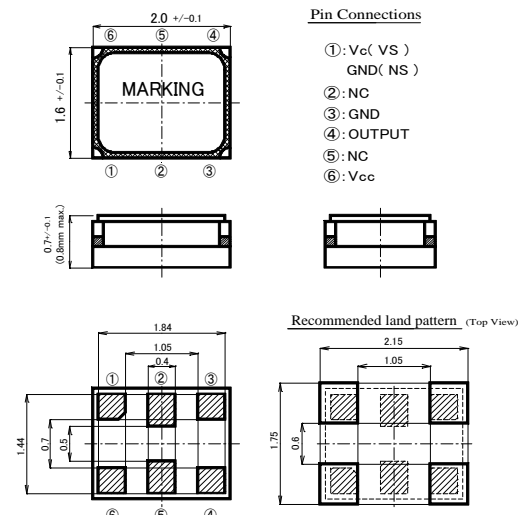
NOTE 1) DC-cut capacitor of output is not put in TCXO. Please add DC-cut capacitor (1,000pF) in oscillator output line.

#### ◆ Phase Noise

Frequency Offset (Hz)	Phase Noise (dBc/Hz)
100	-110 typ.
1k	-132 typ.
10k	-147 typ.
100k	-151 typ.

at f<sub>0</sub>=26.000MHz (25±2°C)

#### ◆ Outline



The ordering number will be obtained separately by customer's requirement.