

# TTS14NSB/VSB-A8

## High precision Temperature Compensated Crystal Oscillator (TCXO)

### ◆ Feature

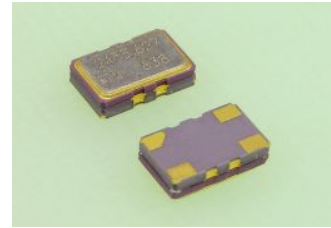
Reflow solderable , Ceramic SMD package base offers superior flatness.

Ultra-compact (5.0×3.2), lowest height , light weight

and low current consumption type.

Suitable for GPS , Cell phone , WiMax , IEEE802.11n, 802.11r.

RoHS compliant



### ◆ Specifications

Item	Symbol	Specifications		Conditions
		TTS14NSB (TCXO)	TTS14VSB (VC-TCXO)	
Output frequency	$f_0$	10.0 MHz to 27.0 MHz		
Supply voltage	Vcc	+2.4V to +5.5V		
Current consumption	Icc	2.0 mA max.		Vcc=3.0V , 10 kOhm//10 pF
Output voltage	Vpp	0.8 V min.		NOTE 1) DC coupling
Load	Load_R,C	10 kOhm // 10 pF		
Frequency Stability				
/Frequency tolerance	$f_{tol}$	$\pm 2.0 \times 10^{-6}$ max.		After reflow , at 25 °C
/ temperature characteristics	$f_{0\_Tc}$	$\pm 0.5 \times 10^{-6}$ max.		-30 °C to +85 °C , Vc=1.5V
/ voltage coefficient	$f_{0\_Vcc}$	$\pm 0.2 \times 10^{-6}$ max.		at 3.0V $\pm 5\%$
/load coefficient	$f_{0\_Load}$	$\pm 0.2 \times 10^{-6}$ max.		at (10kOhm // 10pF) $\pm 5\%$
/ Frequency ageing	$f_{age}$	$\pm 1.0 \times 10^{-6}$ max.		1 year , at 25 °C
Frequency control range	$f_{cont}$	---	$\pm 3$ to $\pm 5 \times 10^{-6}$	Vc=1.5V $\pm 1.0$ V , Positive polarity

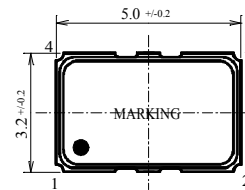
NOTE 1) DC-cut capacitor of output is not put in TCXO. Please add DC-cut capacitor (1,000pF) in oscillator output line.

### ◆ Phase Noise

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

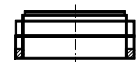
at  $f_0=24.5535\text{MHz}$  (25 $\pm 2^\circ\text{C}$ )

### ◆ Outline

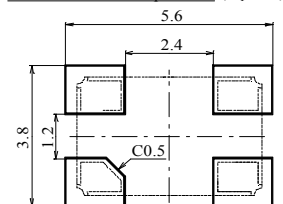
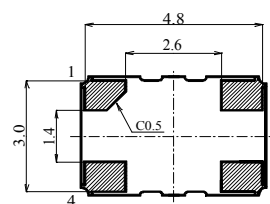


#### Pin Connections

- 1 : Vc (VSB)
- GND or NC (NSB)
- 2 : GND
- 3 : OUTPUT
- 4 : Vcc



#### Recommended land pattern (Top View)



unit (mm)

Products with specific requirements are available upon request.