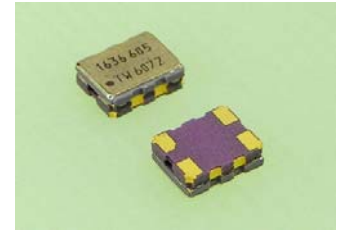


Package : TTS18NSH-A7 / TTS18VSH-A7

Low Voltage high precision Temperature Compensated Crystal Oscillator (TCXO / VC-TCXO)

◆ Feature

Reflow solderable, Ceramic SMD package base offers superior flatness.
 Ultra-compact (3.2×2.5), lowest height, light weight,
 and low Current consumption type. Low supply voltage (Vcc=1.7V min)
 available. 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
		TTS18NSH-A7 (TCXO)	TTS18VSH-A7(VC-TCXO)	
Output frequency	f ₀	10.0 MHz to 52.0 MHz		
Supply voltage	V _{cc}	+1.7V to +3.3V		
Current consumption	I _{cc}	NOTE 2) 1.5 mA max.		at V _{cc} =+1.8V, 10 kOhm//10 pF
Output voltage	V _{pp}	0.8 V min.		NOTE 1) DC coupling
Load	Load_R,C	10 kOhm // 10 pF		
Frequency Stability				
/Frequency tolerance	f _{tol}	± 1.0×10 ⁻⁶ max.		After reflow , at +25 °C
/ temperature characteristics	f _{0-Tc}	± 0.5×10 ⁻⁶ max.		-30 °C to +85 °C , at V _c =+0.9V
/ voltage coefficient	f _{0-Vcc}	± 0.2×10 ⁻⁶ max.		at V _{cc} =+1.8V ± 5%
/ load coefficient	f _{0-Load}	± 0.2×10 ⁻⁶ max.		at (10kOhm // 10pF) ± 10%
/ Frequency ageing	f _{age}	NOTE 2) ± 1.0×10 ⁻⁶ max.		1 year , at +25 °C
Frequency controlled range	f _{cont}	---	±3 to ±5×10 ⁻⁶	V _c =+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.

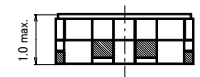
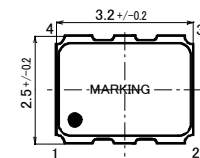
NOTE 2) at f₀=26.000MHz

◆ Phase Noise

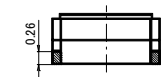
Frequency Offset (Hz)	Phase Noise (dBc/Hz)
100	-110 typ.
1k	-130 typ.
10k	-145 typ.
100k	-145 typ.

at f₀=26.000MHz (25±2°C)

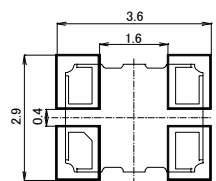
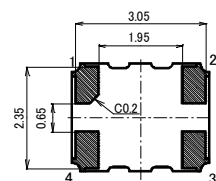
◆ Outline



- Pin connections
1. V_c (VSH)
GND(NSH)
 2. GND
 3. OUTPUT
 4. V_{cc}



Recommended land pattern(Top View)



unit (mm)

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