

# Package : TTS11NSA / TTS11VSA

## Temperature Compensated Crystal Oscillator (TCXO)

### ◆ Feature

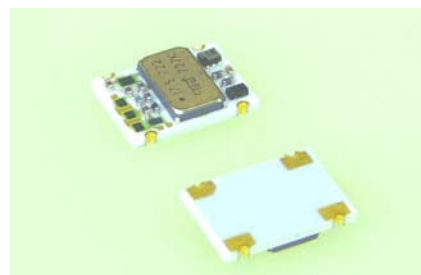
- Reflow solderable, Ceramic SMD type with superior flatness.
- Low height , light weight , and low Current consumption type.
- RoHS compliant.

### ◆ Applications

Cell phone , mobile radio application.

### ◆ Specifications

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



Item	Symbol	Specifications		Conditions
		TTS11NSA(TCXO)	TTS11VSA (VC-TCXO)	
Output frequency	$f_0$	10.0 MHz to 38.0 MHz		
Supply voltage	Vcc	+3.0V±5%		
Current consumption	Icc	1.5 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	$f_{tol}$	± 2.0×10 <sup>-6</sup> max.		After reflow , at 25 °C
/ temperature characteristics	$f_{0\_Tc}$	± 1.0×10 <sup>-6</sup> max.		-20 °C to +75 °C , Vc=1.3V
/ voltage coefficient	$f_{0\_Vcc}$	± 0.2×10 <sup>-6</sup> max.		at 3.0V ± 5%
/load coefficient	$f_{0\_Load}$	± 0.2×10 <sup>-6</sup> max.		at (10kOhm // 10pF) ± 5%
/ Frequency ageing	$f_{age}$	± 1.0×10 <sup>-6</sup> max.		1 year , at 25 °C
Frequency control range	$f_{cont}$	---	±5 to ±15×10 <sup>-6</sup>	Vc=1.3V±1.0V , Positive polarity

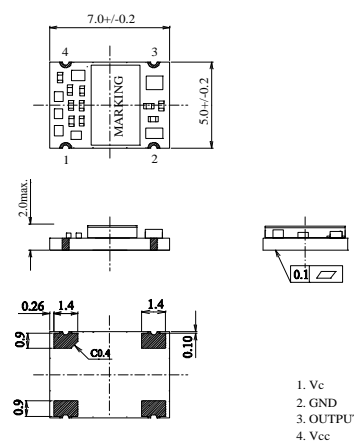
NOTE 1) DC-cut capacitor of output is not put in TCXO. Please add DC-cut capacitor (1,000pF) in oscillator output line.

### ◆ Phase Noise

Frequency Offset (Hz)	Phase Noise (dBc/Hz)
100	-120 typ.
1k	-140 typ.
10k	-145 typ.
100k	-148 typ.

at  $f_0=20.000\text{MHz}$  (25±2°C)

### ◆ Outline



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

**TEW** TEW AMERICA, INC.,

<http://www.tewamerica.com>

Specifications subject to change without notice. Jan / 2011