

### Features

Frequency range : 10MHz to 52MHz  
 SMD seam sealing ceramic package  
 Supply voltage : 3.3V  
 Free Run Stability for 20 Years :  
 ±4.6ppm (Stratum 3)  
 CMOS output  
 Voltage control function available  
 External dimensions (mm)  
 L : 7.0 x W : 5.0 x H : 2.0  
 RoHS compliant & Pb free

### Applications

Wireless communications,  
 Smallcell, Base station  
 Precise timing & synchronization  
 network (IEEE1588, Sync.E),  
 OTN, PTN, Switch  
 Test and measurement equipment  
 Smart grid  
 Stratum 3

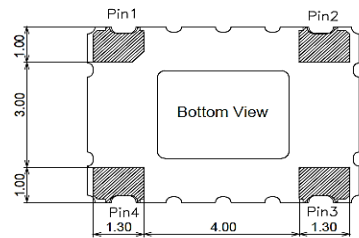
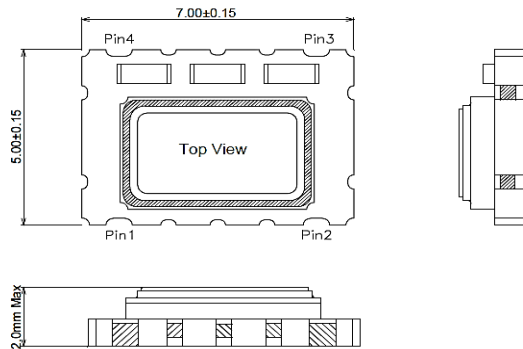
### Electrical Characteristics

Item		7N	Conditions
Nominal Frequency Range ( $F_0$ )		10MHz ~ 52MHz	
Frequency Tolerance ( $F_{tol}$ )		±2.0 ppm Max.	Note [1]
Frequency Stability	vs Temperature	±0.1, ±0.28, ±0.5, ±1.0 ppm	Note [2]
	vs Load	±0.1 ppm Max.	Load ±5%
	vs Supply Voltage	±0.1 ppm Max.	$V_{DD} \pm 5\%$
Operating Temperature Range ( $T_{OTR}$ )		-40°C ~ +85°C	
Supply Voltage ( $V_{DD}$ )		3.3V	
Current Consumption ( $I_{DD}$ )		5.0 mA Max.	
Output Type		CMOS	
Output Load		15 pF	
Output Voltage High ( $V_{OH}$ )		90% $V_{DD}$ Min.	
Output Voltage Low ( $V_{OL}$ )		10% $V_{DD}$ Max.	
Start-up Time		2.5 ms Max.	
Auto Frequency Control (AFC) Range		±5ppm ~ ±16ppm	VCTCXO, optional $V_C = 1.5 \pm 1.0V$
Phase Noise		-135 dBc/Hz Typ.	at 1kHz offset
Aging ( $F_{aging}$ )		±1 ppm Max.	at 25°C, first year
24 Hours Holdover Stability		±40 ppb Max.	Note [3]
Free Run Stability for 20 Years		±4.6 ppm Max.	Note [4]
Storage Temperature Range ( $T_{STR}$ )		-55°C ~ +125°C	

**Notes:**

- [1] Refer to nominal frequency, operation after 2 times of reflow at 25°C.
- [2] Refer to  $(F_{max} + F_{min})/2$ .
- [3] 24 hours at constant temperature after 48 hours operation
- [4] Inclusive of initial tolerance at 25°C, variations over temperature, supply voltage, load, reflow soldering and aging for 20 years.

**Dimensions**

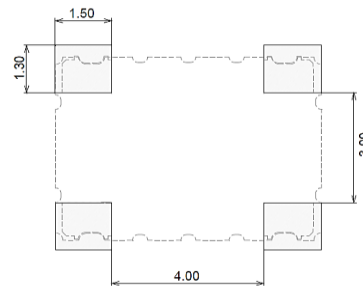


(Unit: mm)

**Pin function**

Pin	Function	
	TCXO	VCTCXO
Pin 1	GND or NC	AFC
Pin 2	GND	
Pin 3	OUTPUT	
Pin 4	V <sub>DD</sub>	

**Recommended pad layout**



**Ordering Information**

7N - 19.200M B P - T

Frequency in Hz

Please contact us for available frequencies

Packaging Method

T Tape & Reel

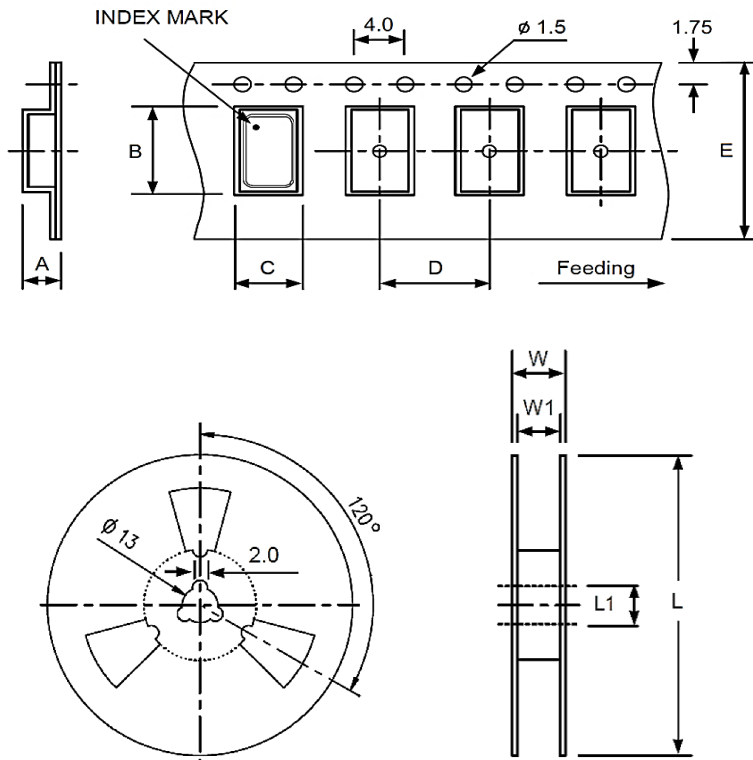
Supply Voltage

B 3.3 V

Frequency Stability (over Temp.)

I	± 1.0 ppm	(-40°C ~ +85°C),	TCXO
F	± 0.5 ppm	(-40°C ~ +85°C),	VCTCXO
G	± 0.5 ppm	(-40°C ~ +85°C),	TCXO
O	± 0.28 ppm	(-40°C ~ +85°C),	VCTCXO
P	± 0.28 ppm	(-40°C ~ +85°C),	TCXO
T	± 0.1 ppm	(-40°C ~ +85°C),	VCTCXO
U	± 0.1 ppm	(-40°C ~ +85°C),	TCXO

### Packing



DIMENSIONS	A	B	C	D	E	L	L1	W	W1
	2.00	7.90	5.45	8.00	16.0	180.0	13.0	20.5	16.0

(Unit: mm)

### Reflow Profile

Solder melting point : 220°C ± 10°C, 60 sec. Min., 200 sec. Max.

Peak temperature : 260°C ± 10°C, 10 sec. Min., 30 sec. Max.

