

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
 Tri-state function available
 External dimensions (mm)
 L : 5.0 x W : 3.2 x H : 2.1
 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

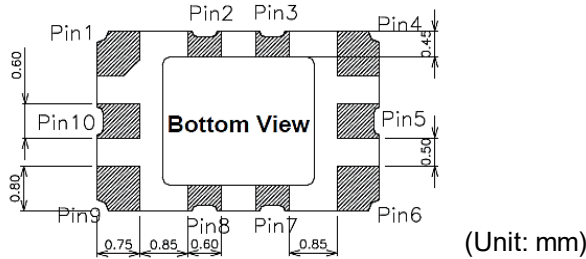
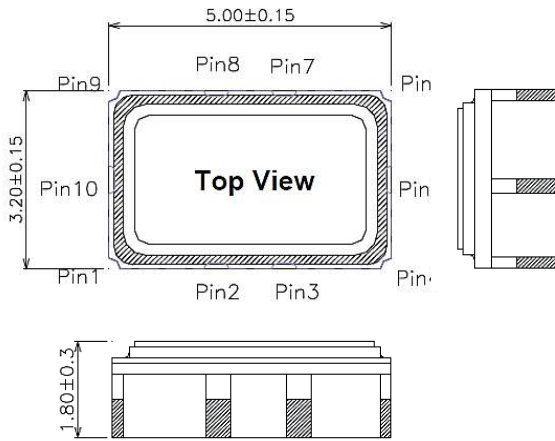
Electrical Characteristics

Item		7P	Conditions
Nominal Frequency Range (F_0)		10MHz ~ 52MHz	
Frequency Tolerance (F_{tol})		±2.0 ppm Max.	Note [1]
Frequency Stability	vs Temperature	±0.1ppm, ±0.28ppm, ±0.5ppm	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.	
	Low (V_{OL})	10% V_{DD} Max.	
Tri-state Input	High (output enable)	80% V_{DD} Min.	
	Low (output disable)	20% 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.

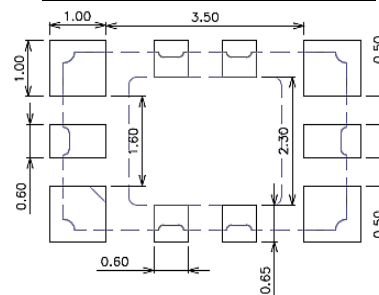
Dimensions



Pin function

Pin	Function	
	TCXO	VCTCXO
Pin 1	GND or NC	AFC
Pin 2	Do not connection	
Pin 3	Tri-state	
Pin 4	GND	
Pin 5	Do not connection	
Pin 6	OUTPUT	
Pin 7	Do not connection	
Pin 8	Do not connection	
Pin 9	V _{DD}	
Pin 10	Do not connection	

Recommended pad layout



Ordering Information

7P - 19.200M B P - T

Frequency in Hz

Please contact us for available frequencies

Package Method

T Tape & Reel

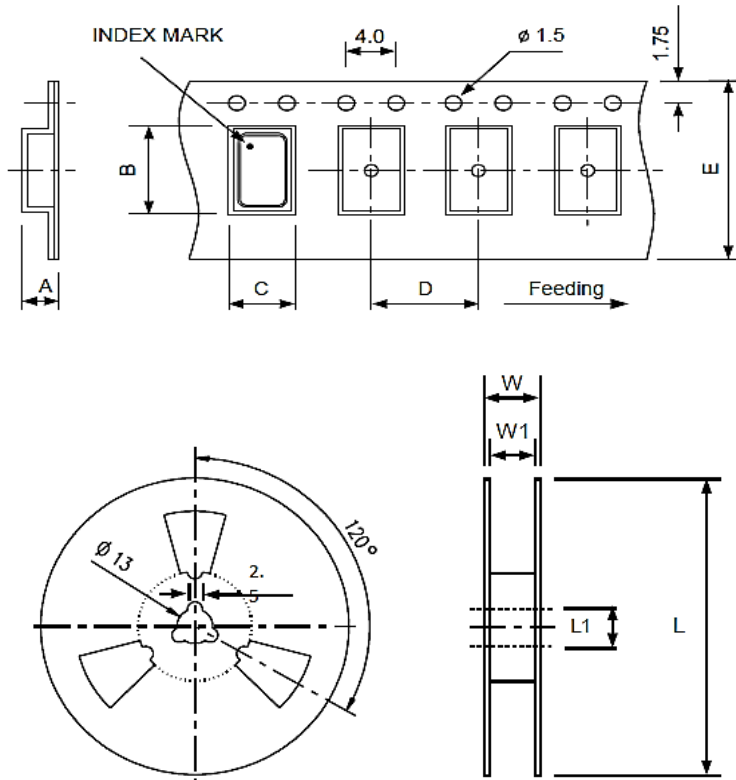
Supply Voltage

B 3.3 V

Frequency Stability (over Temp.)

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

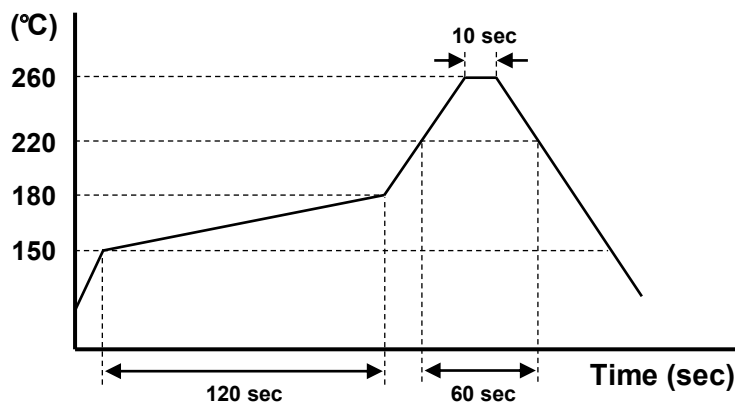
Packing



DIMENSIONS (mm)	A	B	C	D	E	L	L1	W	W1
	2.20	5.30	3.50	8.00	12.00	178	17.3	16.1	13.5

(Unit: mm)

Reflow Profile



Notes:

- [1] Period while temperature exceeds the solder melting point 220°C should be less than 200 sec.
- [2] Period while temperature stays at the top melting point 260°C should be less than 30 sec.