

**Features**

- Ultra Stable
- Wide Temperature Range
- SMD Package (7x5x1.9mm)
- Provide Stratum III Level Frequency Stability

**Applications**

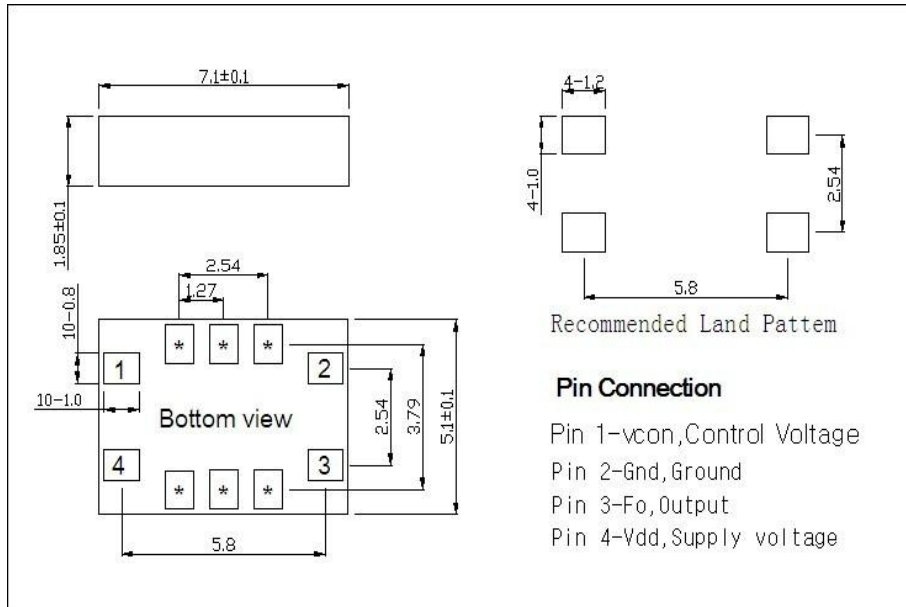
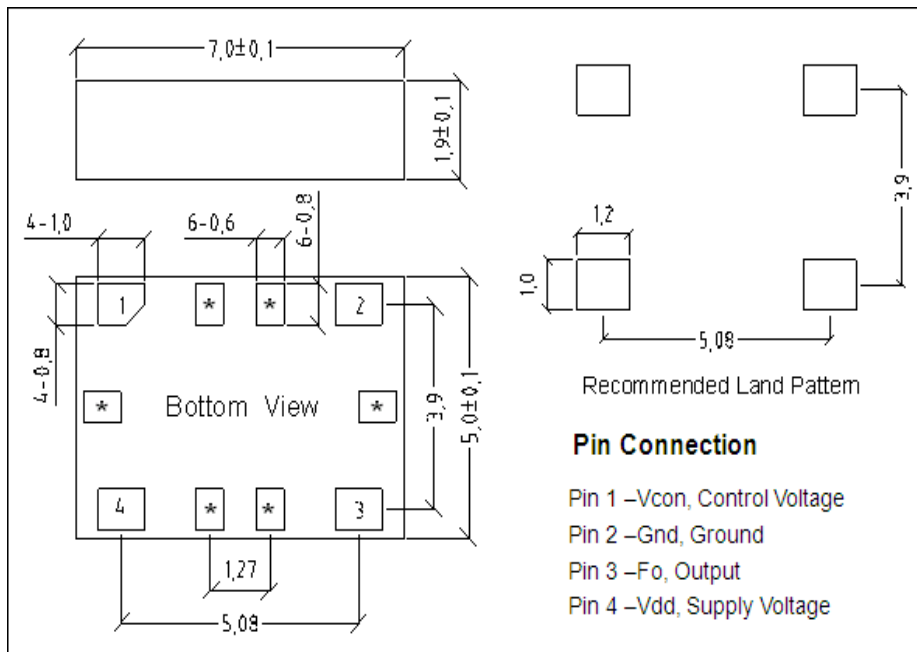
- Base Stations
- Instrumentations
- Synthesizer
- SDH/SONET
- Medical Electronic


**BT0507 Specifications**

Parameter	Value			Unit	Conditions	
	Min.	Typ.	Max.			
<b>Power Supply</b>						
Supply Voltage	-	3.3	-	Vdc		
	-	5	-	Vdc		
Supply Current	3	-	6	mA		
<b>RF Output</b>						
Frequency Range	10 to 40			MHz		
Nominal Frequency	10, 12.8, 13, 15.36, 16.32, 18.432, 19.2, 19.44, 20, 20.48, 25, 26, 30.72, 32.768, 38.4, 40			MHz		
Clipped Sine Wave	Output Level	0.8	-	-	Vp-p	
	Load	10kΩ//10pF				
Square LVCMOS	V <sub>OH</sub>	2.4	-	-	V	LVCMOS Output, Load=15pf
	V <sub>OL</sub>	-	-	0.4	V	LVCMOS Output, Load=15pf
	Duty Cycle	45	-	55	%	(V <sub>OH</sub> - V <sub>OL</sub> )/2
	Rise/Fall	-	-	6	ns	LVCMOS Output, Load=15pf
	Load	-	-	15	pf	
<b>Frequency Stability</b>						
Initial Frequency Tolerance	±0.05	-	±0.5	ppm	At shipment, nominal EFC, +25°C	
RMS Jitter(By E5052B)	0.4	-	1.3	ps	12KHz~5MHz	
Freq. Stability Vs. Temp.	±0.05, ±0.1, ±0.2, ±0.5			ppm	-20°C~+70°C	
	±0.1, ±0.2, ±0.5			ppm	-40°C~+85°C	
	±0.2, ±0.5, ±1.0			ppm	-50°C~+90°C	
	±0.5, ±1.0			ppm	-55°C~+95°C	
Supply Sensitivity	±0.1			ppm	V <sub>cc</sub> ±5%	
Load Sensitivity	±0.2				Load±5%	
Aging/ First Year	±1.0				Standard	
SSB Phase Noise @10MHz	±0.3	-	±0.8	dBc/Hz	Customized	
	-	-	-95		Offset 10Hz	At +25°C
	-	-	-120		Offset 100Hz	
	-	-	-140		Offset 1kHz	
	-	-	-145		Offset 10kHz	
-	-	-150	Offset 100kHz			

**Electronic Frequency Control**

Control Voltage Range	1.5 ± 1.0			Vdc		
Frequency Turning Range	±5	–	±12	ppm		
Tuning Slope	positive					
Non-linearity	–	–	1	%		

**Outline Dimension & Pin Connections**
**Package A:**

**Package B:**

**Note:**

1. The pins with "\*" are for factory test.
2. Leave pin 1 unconnected If Vcon is not used.

**Environmental Conditions**

Operating Temperature Range	-20°C ~ +70°C
	-40°C ~ +85°C
	-50°C ~ +90°C
	-55°C ~ +95°C

**Maximum Ratings**

Parameter	Symbol	Rating
Storage Temperature Range	Ts	-55°C ~ +125°C
Supply Voltage	Vdd	-0.5V / 6V
Control Voltage	Vcon	0V / 3V
ESD, HBM/CDM/MM		4KV/ 2KV/ 200V

**Reliability**

Parameter	Condition
Temperature Stress Test	IEC60068, GJB360B
Mechanical Stress Test	IEC60068, GJB360B
EMC Test (ESD)	IEC61000, JESD22
Solderability	EIA/JESD22-B102-C
Moisture Sensitivity Level	MSL3
Contact Pads	Gold over Nickel
RoHS	RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC

**Ordering Guide**

**BT 0507 X X X X XXX X X XX.XX**

**Product**  
TCXO

**Outline**  
5.0mm x 7.0mm

A: Package A  
B: Package B

H:LVC MOS  
C:Clipped Sine

3: 3.3 Vdc  
5: 5.0 Vdc

C: -20°C ~ +70°C  
I: -40°C ~ +85°C  
M: -50°C ~ +90°C  
U: -55°C ~ +95°C

Frequency in MHz

Tuning  
N:No Tuning  
A: ±5ppm  
B: ±7ppm  
C: ±12ppm

Phase Noise  
A: -120dBc/Hz@1kHz  
B: -125dBc/Hz@1kHz  
C: -130dBc/Hz@1kHz  
D: -135dBc/Hz@1kHz  
E: -140dBc/Hz@1kHz  
G: -145dBc/Hz@1kHz

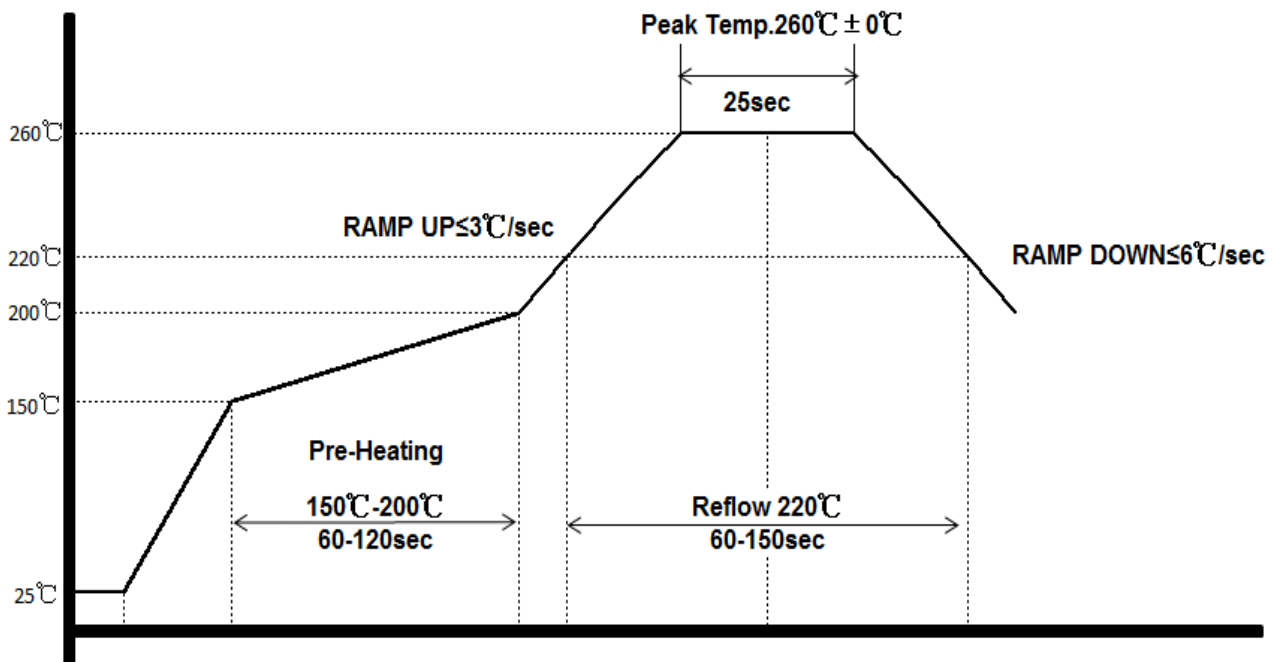
Stability  
507: ±0.5ppm  
207: ±0.2ppm  
107: ±0.1ppm  
508: ±0.05ppm

**Example:** BT0507AH3C107DN12.8

Phase Noise @1KHz					
Frequency Range	<-125dBc	<-130dBc	<-135dBc	<-140dBc	
10MHz				●	● = Available ● = Unavailable
12.8~20MHz			●	●	
20.48~38.4MHz		●	●	●	
40MHz	●	●	●	●	

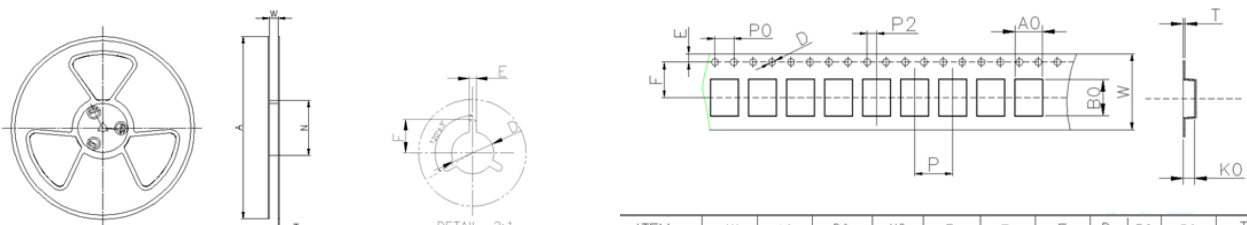
**IR Reflow Profile**

**Suggested IR Reflow**  
 Devices are built using lead-free epoxy and can be subjected to standard lead free IR reflow conditions shown in the figure:



**Tape & Reel**

**Tape & Reel Information**



ITEM	W	A	N	T	E	F	D
DIM	16.5	330	100	1.8	2.1	10.75	13.5
TOLE	±0.4	±0.5	±0.3	±0.2	±0.3	±0.3	+0.5 -0.2

ITEM	W	A0	B0	K0	P	F	E	D	P0	P2	T
DIM	16.0	5.7	7.6	2.4	8	7.5	1.75	1.50	4.00	2.00	0.30
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.10	+0.10 -0.10	+0.05 -0.05

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