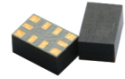


**Features**

- Ultra Stable
- Wide Temperature Range
- SMD Package (5.0x3.2mm)

**Applications**

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


**BT0503 Specifications**

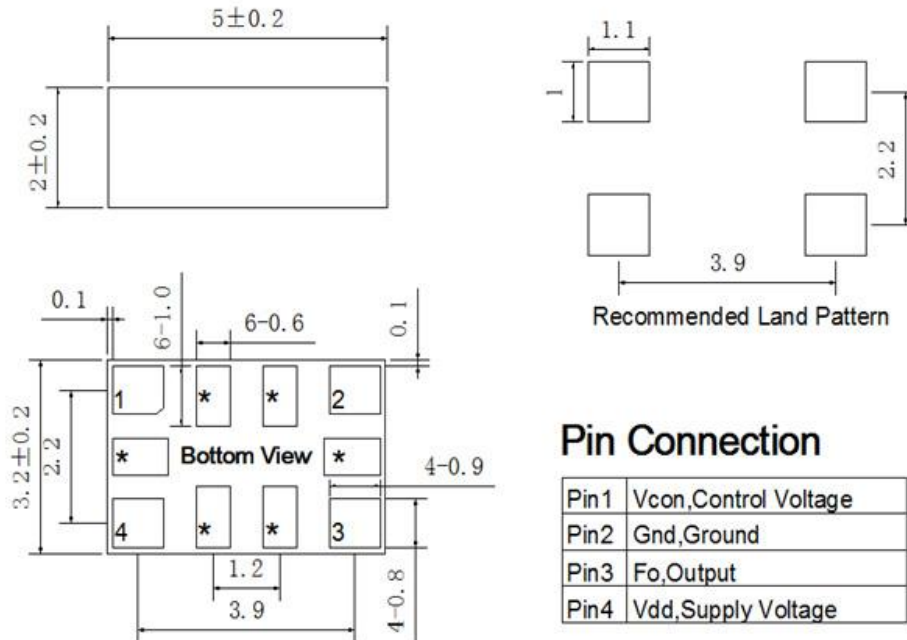
Parameter	Value			Unit	Conditions	
	Min.	Typ.	Max.			
Supply Voltage	-	3.3	-	V		
	-	5	-	V		
Supply Current	3	-	6	mA		
Frequency Range	10 ~ 52			MHz		
Nominal Frequency	10, 12.8, 16.384, 19.2, 20, 24.576, 25, 26, 30.72, 40, 50			MHz		
Initial Frequency Tolerance	±0.05	-	±0.5	ppm	At shipment, nominal EFC, +25°C	
Freq. Stability Vs. Temp.	±0.05	-	±0.5	ppm	-20°C ~ +70°C	
	±0.1	-	±0.5	ppm	-40°C ~ +85°C	
	±0.2	-	±1.0	ppm	-50°C ~ +90°C	
	±0.5	-	±1.0	ppm	-55°C ~ +95°C	
Clipped Sine Wave	Output Level	0.8	-	Vp-p		
	Load	10kΩ//10pF				
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 Edge	-	-	6	ns	LVCMOS Output, Load=15pf
	Load	-	-	15	pf	
RMS Jitter(By E5052B)	-	-	1.3	ps	12KHz~5MHz	
Supply Sensitivity	-	-	±0.1	ppm	V <sub>cc</sub> ±5%	
Load Sensitivity	-	-	±0.2		Load±5%	
Aging/ First Year	-	-	±1.0		Standard	
	±0.3	-	±0.8	Customized		
SSB Phase Noise @10MHz	-	-	-95	dBc/Hz	Offset 10Hz	
	-	-	-120		Offset 100Hz	
	-	-	-140		Offset 1kHz	
	-	-	-145		Offset 10kHz	
	-	-	-150		Offset 100kHz	
Control Voltage Range	1.5 ± 1.0			V		
Frequency Turning Range	±5	-	±12	ppm		
Tuning Slope	Positive					
Non-linearity	-	-	10	%		

**Phase Noise @1KHz**

Freq. Range	<-125dBc	<-130dBc	<-135dBc	<-140dBc	
10MHz				A	A=Available N/A=Not Available
12.8~20MHz			A	N/A	
20.48~38.4MHz		A	N/A	N/A	
40MHz	A	N/A	N/A	N/A	

**Outline Dimension & Pin Connections**

Outline Dimensions: mm


**Pin Connection**

Pin1	Vcon,Control Voltage
Pin2	Gnd,Ground
Pin3	Fo,Output
Pin4	Vdd,Supply Voltage

**Note:**

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

**Environmental Conditions**

Operating Temperature Range	-55°C ~ +95°C
Storage Temperature Range	-55°C ~ +125°C

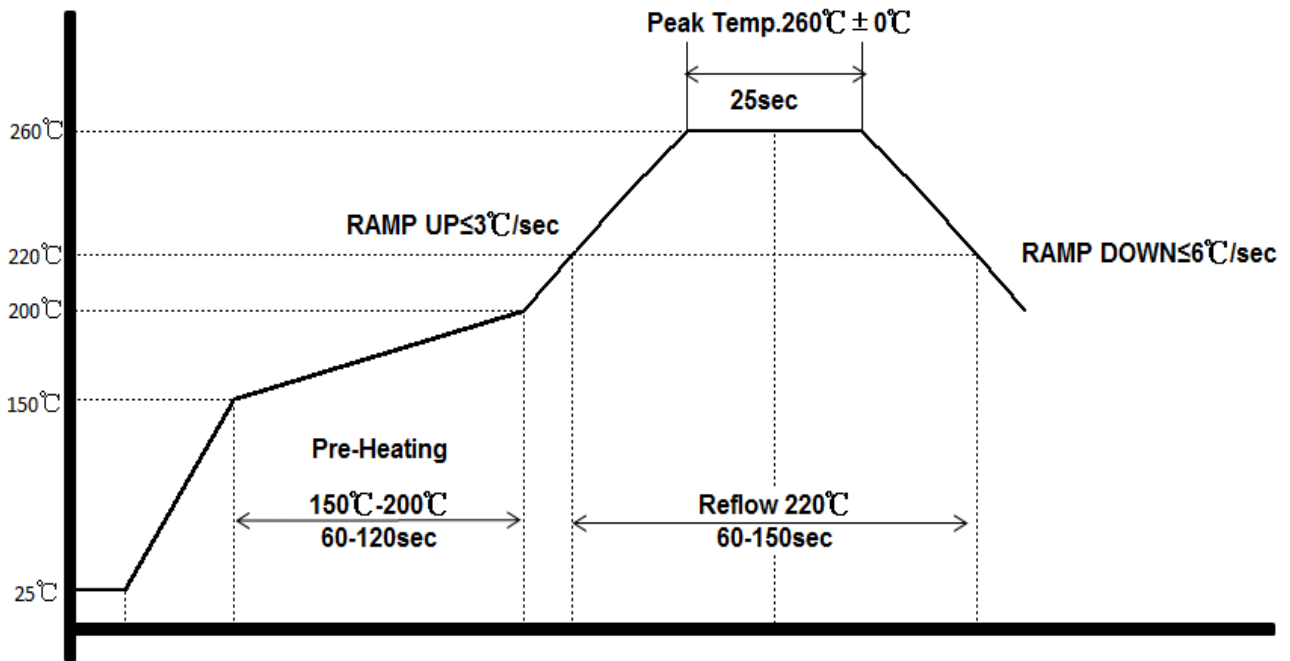
**Maximum Ratings**

Parameter	Symbol	Rating
Supply Voltage	Vdd	-0.5V / 6V
Control Voltage	Vcon	0V / 3V
ESD, HBM/CDM/MM		4KV/ 2KV/ 200V

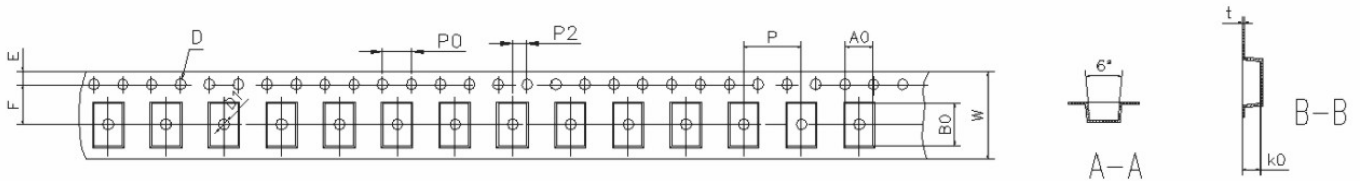
**Reliability**

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

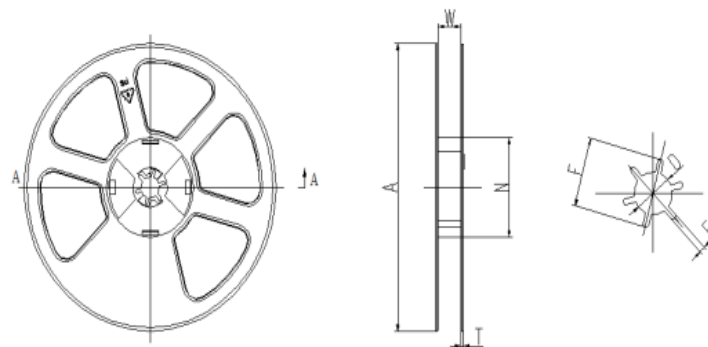
IR Reflow Profile



Tape & Reel



ITEM	W	A0	B0	K0	P	F	E	D	D1	P0	P2	t	7"
DIM	16.0	3.7	5.6	2.0	8.00	7.50	1.75	1.50	1.50	4.00	2.00	0.3	L/R QTY/PCS
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 -0.00	+0.10 -0.10	+0.10 -0.10	+0.05 -0.05	4M 500PCS



Item	W	A	N	T	E	F	D
Size	16.4	178	62	1.8	2	21.8	13.5
TOL	$\pm 0.3$	$\pm 0.5$	$\pm 0.4$	$\pm 0.2$	$\pm 0.5$	$\pm 0.8$	$\pm 0.3$

Ordering Guide

**BT 0503 X X X XXX X X XX.XX**

Product:  
TCXO

Outline:  
5.0mm x 3.2mm

Output:  
H:LVC MOS  
C:Clipped Sine

Supply Voltage:  
3: 3.3 Vdc  
5: 5.0 Vdc

Temp. Range:  
C: -20°C ~ +70°C  
I: -40°C ~ +85°C  
M: -50°C ~ +90°C  
U: -55°C ~ +95°C  
F: Customized

Frequency:  
xx MHz

Tuning Range:  
N:No Tuning  
A: ±5ppm  
B: ±7ppm  
C: ±10ppm

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

Temp. Stability:  
507: ±0.5ppm  
287: ±0.28ppm  
207: ±0.2ppm  
107: ±0.1ppm  
508: ±0.05ppm

**Example:** BT0503H3C107DN12.8

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