Features

- Ultra Stable
- Wide Temperature Range
- Fast Warming-up
- SMD Package (5.2×3.4mm)

Applications

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

BT0503C Specifications

Parameter		Value			Unit	Conditions	
		Min.	Typ.	Max.			
Supply Voltage		–	3.3	–	V	Vcc±5%	
		–	5	–	V	Vcc±5%	
Supply current		–	–	10	mA	10MHz~26MHz（Including26MHz）	
		–	–	20	mA	26MHz~52MHz	
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		±0.3	–	±1	ppm	At shipment, nominal EFC, +25℃	
Freq. Stability Vs. Temp.		±0.05	–	±0.5	ppm	-20℃~+70℃	
		±0.1	–	±0.5	ppm	-40℃～+85℃	
		±0.2	–	±1.0	ppm	-50°C～+90°C（except for 10MHz）	
		±0.5	–	±1.0	ppm	-55°C～+95°C（except for 10MHz）	
Clipped Sine Wave	Output Level	0.8	–	–	Vp-p		
	Load	10kΩ//10pF					
HCMOS	V_{OH}	2.4	–	–	V	HCMOS Output, Load=15pf	
	V_{OL}	–	–	0.4	V	HCMOS Output, Load=15pf	
	Duty Cycle	45	–	55	%	(V_{OH} - V_{OL})/2	
	Rise/Fall Edge	–	–	6	ns	HCMOS Output, Load=15pf	
	Load	–	–	15	pf		
RMS Jitter(By E5052B)		0.4	–	1.3	ps	12KHz~5MHz	
Supply Sensitivity		–	–	±0.1	ppm	Vcc±5%	
Load Sensitivity		–	–	±0.2		Load±5%	
Aging/ First Year		–	–	±1.0		Standard	
SSB Phase Noise @10MHz		–	–	-92	dBc/Hz	Offset 10Hz	At +25℃
		–	–	-120		Offset 100Hz	
		–	–	-140		Offset 1kHz	
		–	–	-145		Offset 10kHz	
		–	–	-150		Offset 100kHz	
Control Voltage Range		1.5 ± 1.0			V		
Frequency Tuning Range		±5	–	±12	ppm		
Tuning Slope		positive					
Non-linearity		–	–	10	%		

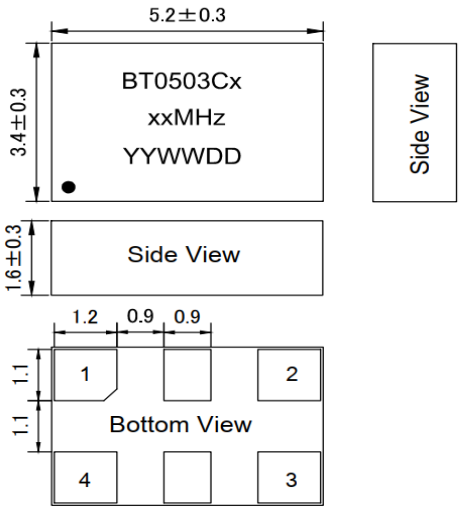
Phase Noise @1KHz

Frequency Range	<-125dBc	<-130dBc	<-135dBc	<-140dBc	
10MHz	○	○	○	○	○=Available X= Not Available
12.8MHz~20MHz	○	○	○	X	
20.48MHz~38.4MHz	○	○	X	X	
⩾40MHz	○	X	X	X	

Environmental Conditions

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

Outline Dimension & Pin Connections

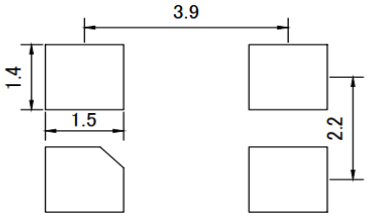


Pin Connections

#1	NC / Vcont
#2	GND
#3	Output
#4	Vcc

unit : mm
Dimensional Tolerance : ±0.3

Recommended Land Pattern



Note:

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

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 sensitivity Level	MSL3
Contact Pads	Gold over Nickel
RoHS	RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC

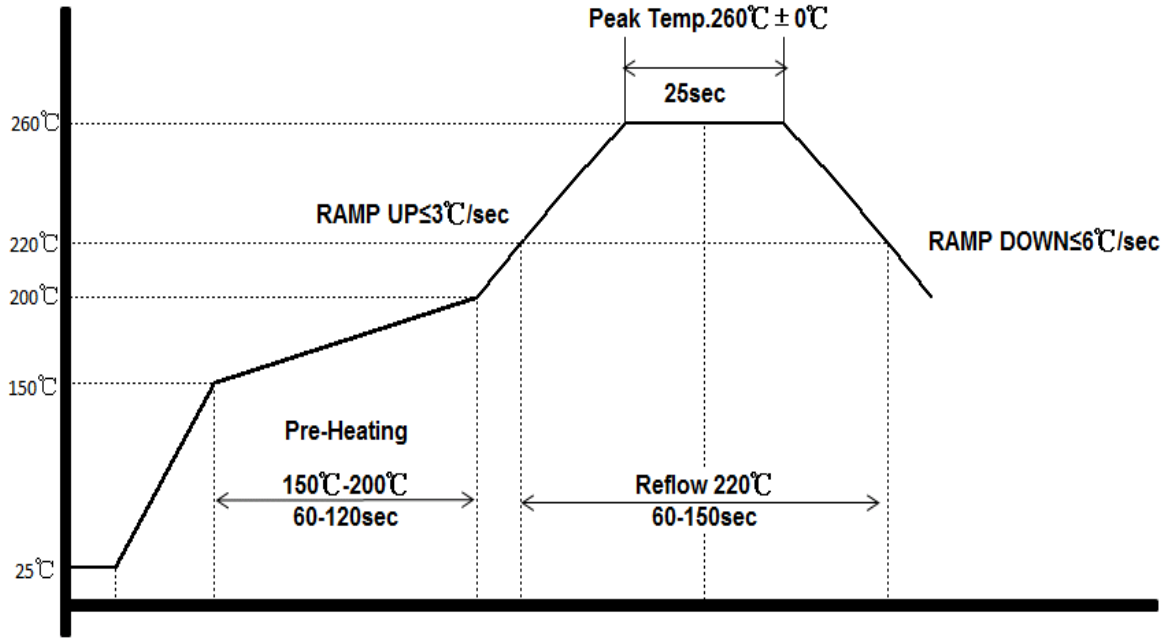
Ordering Guide

BT 0503C X X X XXX X X XX.XX

- Product: TCXO
- Outline: 5.2mm x 3.4mm
- Output: H:HCMOS C:Clipped Sine
- Supply Voltage: 3: 3.3 Vdc 5: 5.0 Vdc
- Temp. Range: C: -20℃ ~ +70℃ I: -40℃ ~ +85℃ M: -50℃ ~ +90℃ U: -55℃ ~ +95℃ F: Customized
- Temp. Stability: 507: ±0.5ppm 287: ±0.28ppm 207: ±0.2ppm 107: ±0.1ppm 508: ±0.05ppm
- Phase Noise: A: -120dBc/Hz@1kHz B: -125dBc/Hz@1kHz C: -130dBc/Hz@1kHz D: -135dBc/Hz@1kHz E: -140dBc/Hz@1kHz
- Tuning Range: N:No Tuning A: ±5ppm B: ±7ppm C: ±10ppm
- Frequency: xx MHz

Example: BT0503CH3M287BN50

Reflow Profile



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