XtalTQ Technologies

Features

- Ultra Stable
- Low Phase Noise
- Freq. Range 50~156.25MHz
- High Precision
- DIP 20*12mm

Applications

- Wireless Communication System
- instruments and apparatus
- Navigation

BT1220H Vibration Insensitive Specifications

Parameter		Value			Unit	Conditions	
		Min.	Typ.	Max.			
Supply Voltage		–	3.3	–	V	Vcc±5%	
		–	5	–	V		
Supply Current		–	–	45	mA		
Frequency Range		50~ 156.25			MHz		
Nominal Frequency		50,80,100,122.88			MHz		
Initial Frequency Tolerance		±0.5	–	±1.5	ppm	At shipment, nominal EFC, +25℃	
Freq.Stability Vs.Temp.		±0.20	±0.28	±2	ppm	-20℃~70℃@Height above 6mm	
		±0.28	±0.50	±2	ppm	-40℃~85℃@Height above 6mm	
		±0.5	±1.0	±2	ppm	-50℃~85℃@Height above 6mm	
Sine Wave	Output	7	–	–	dBm		
	Harmonic Suppression	–	–	-30	dBc		
	Spur Suppression	–	–	-70	dBc		
	Load	–	50	–	Ω		
HCMOS	Voh	2.4	–	–	V	HCMOS Output，Load=15pf	
	Vol	–	–	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(E5052B)		–	–	1000	fs	12KHz~20MHz	
Supply Sensitive		–	–	±0.2	ppm	Vcc±5%	
Load Sensitive		–	–	±0.2		Load±5%	
Aging/First Year		–	–	±1.0		Standard	
SSB Phase Noise @100MHz		–	-80	-75	dBc/Hz	Offset 10Hz	Static phase noise at +25°C
		–	-112	-110		Offset 100Hz	
		–	-142	-140		Offset 1kHz	
		–	-158	-155		Offset 10kHz	
			-161	-158		Offset 100kHz	
		–	-162	-160		Offset 1000kHz	
SSB Phase Noise @100MHz		–	-75	-70	dBc/Hz	Offset 10Hz	X-axis dynamic phase noise at +25°C
		–	-102	-95		Offset 100Hz	
		–	-115	-100		Offset 1kHz	
		–	-155	-145		Offset 10kHz	
			-158	-155		Offset 100kHz	
		–	-160	-158		Offset 1000kHz	
SSB Phase Noise @100MHz		–	-75	-70	dBc/Hz	Offset 10Hz	Y-axis dynamic phase noise at +25°C
		–	-102	-95		Offset 100Hz	
		–	-115	-100		Offset 1kHz	
		–	-155	-145		Offset 10kHz	
			-158	-155		Offset 100kHz	
		–	-160	-158		Offset 1000kHz	
SSB Phase Noise @100MHz		–	-74	-70	dBc/Hz	Offset 10Hz	Z-axis dynamic phase noise at +25°Cse)
		–	-96	-95		Offset 100Hz	
		–	-102	-100		Offset 1kHz	
		–	-150	-145		Offset 10kHz	
			-158	-155		Offset 100kHz	
		–	-160	-158		Offset 1000kHz	
Control Voltage Range		1.5 ± 1.0			V		
Frequency Tunning Range		±3	±5	±10	ppm		
Tunning Slope		Positive					
Non-Lineraity		–	–	10	%		

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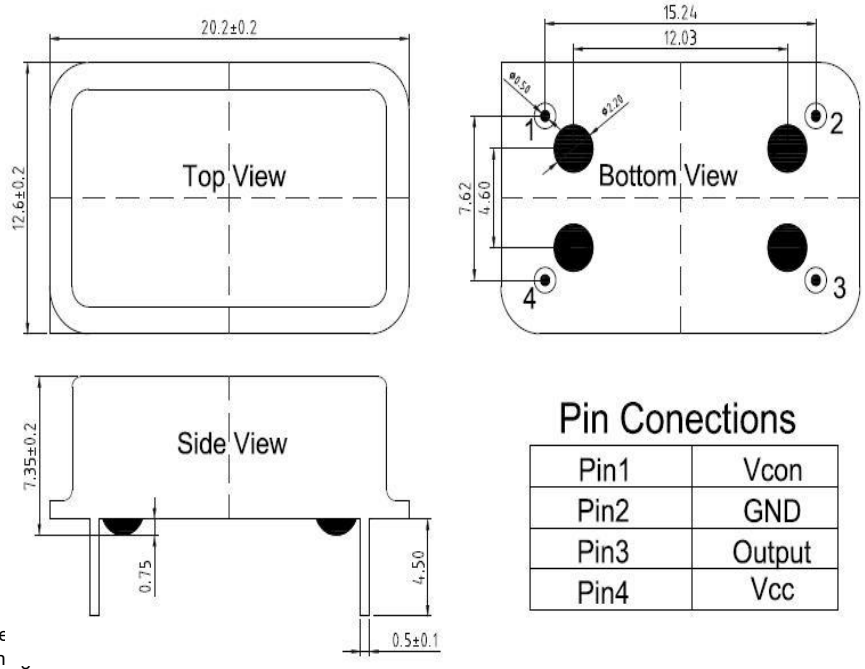
Phase Noise @1kHz					
Frequency Range	<-130dBc	<-135dBc	<-140dBc	<-145dBc	
50～100MHz	○	○	○	○	○= Availavle X= Not Available
102.4～122.88MHz	○	○	○	X	
125～156.25MHz	○	○	X	X	

Environmental Conditions	
Operating Temp. Range	-50℃ ~ +85℃
Storage Temp.Range	-55℃ ~ +125℃
Note: The minimum to maximum value indicates the range of indicators	

Outline Dimension & Pin Connections



Pin Conections

Pin1	Vcon
Pin2	GND
Pin3	Output
Pin4	Vcc

Note:
1、Leave
2、The h

Maximun Ratings		
Parameter	**Symbol**	**Rating**
Supply Voltage	Vcc	3.3V/5V
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
Contact Pads	Gold over Nickel
RoHS	RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC

Ordering Guide

BT1220XXXXXXXXXXX.XXZ

- Product: TCXO
- Outline: 20mm x 12mm
- Frequency Range: L: < 50MHz; H: ≥ 50MHz
- Output: H: CMOS; S: Sine Wave
- Supply Voltage: 3: 3.3 Vdc; 5: 5.0 Vdc
- Temp. Range: C: -20℃ ~ +70℃; I: -40℃ ~ +85℃; M: -50℃ ~ +85℃; F: F: Customized
- Z: Vibration Insensitive
- Frequency: xx MHz
- Tuning Range: N: No Tuning; A: Typ. ±5ppm
- 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
- Temp. Stability: 206: ±2ppm; 106: ±1ppm; 507: ±0.5ppm; 207: ±0.2ppm

Example: BT1220HS5I106CA100Z

Random Vibration Condition

The crystal oscillator is subjected to the random vibration tests specified in Table 1 and Figure 1

Table 1. Flight vibration requirements

direction of vibration	time of vibration
X、Y、Z	1 minute per axis

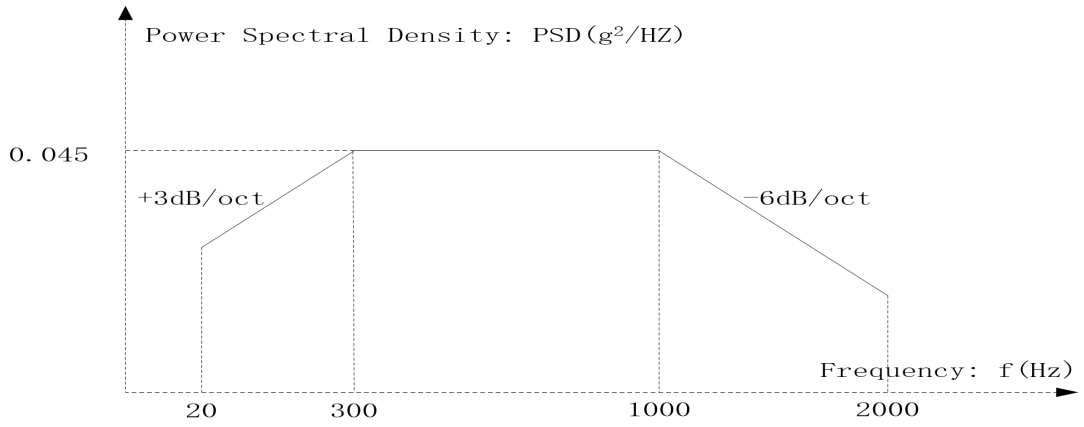


Figure 1. Random vibration test curve