
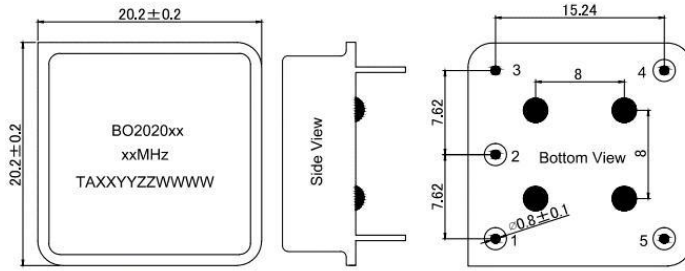


Features		Applications				
<ul style="list-style-type: none"> <li>● Ultra Stable</li> <li>● Wide Temperature Range</li> <li>● Fast Warming-up</li> <li>● Ultra Low Phase Noise</li> </ul>		<ul style="list-style-type: none"> <li>● Base Stations</li> <li>● Instrumentations</li> <li>● Synthesizer</li> <li>● Medical Electronics</li> </ul>				
						
BO2020H Specifications						
Parameter	Value			Unit	Condition	
	Min.	Typ.	Max.			
Supply Voltage	–	5.0	–	V	V <sub>cc</sub> ±5%	
	–	12.0	–	V	V <sub>cc</sub> ±5%	
Power Consumption	–	–	4.5	W		
	–	–	1.5	W		
Frequency Range	50 ~ 120			MHz		
Nominal Frequency	50, 80, 100, 120			MHz		
Initial Frequency Tolerance	±100	–	±300	ppb	At shipment, nominal EFC	
Freq. Stability Vs. Temp.	±50	–	±100	ppb	-40°C ~ +70°C	
	±100	–	±200	ppb	-40°C ~ +85°C	
	±200	–	±500	ppb	-55°C ~ +85°C	
	–	–	–	–	–	
Sine Wave	Output Level	7	–	–	dBm	
	Harmonics	–	–	-40	dBc	
	Spurious	–	–	-80	dBc	
	Load	–	50	–	Ω	
HCMOS	V <sub>OH</sub>	2.4	–	–	V	HCMOS Output, Load=15pf
	V <sub>OL</sub>	–	–	0.4	V	HCMOS Output, Load=15pf
	Duty Cycle	45	–	55	%	(V <sub>OH</sub> - V <sub>OL</sub> )/2
	Rise/Fall edge	–	–	6	ns	HCMOS Output, Load=15pf
	Load	–	15	–	pf	
Short-term Stability@100MHz	–	–	1×10 <sup>-11</sup>	ppb/s	Test after 15 Min.	
Warm-up Time	–	–	5	Min	At +25°C, with tolerance ±100ppb	
Supply Sensitivity	–	–	±10	ppb	V <sub>cc</sub> ±5%	
Load Sensitivity	–	–	±10		Load±5%	
Aging per Day	–	–	±2		After 30 days of operation	
Aging per Year	–	–	±200		After 30 days of operation	
SSB Phase Noise @100MHz	–	–	-100	dBc/Hz	Offset 10Hz	At +25°C, 12V
	–	–	-130		Offset 100Hz	
	–	–	-160		Offset 1kHz	
	–	–	-170		Offset 10kHz	
	–	–	-170		Offset 100kHz	
Control Voltage Range	0	–	5	V		
Frequency Tuning Range	±0.5	–	±2.0	ppm		
Tuning Slope	Positive					
Environmental Conditions						
Operating Temperature Range	-55°C ~ +85°C					
Storage Temperature Range	-55°C ~ +125°C					

## Outline Dimension & Pin Connections



Pin Connections

Pin	Function	Description
Pin1	Vcon	Control Voltage
Pin2	Ref	Voltage Reference
Pin3	GND	Ground Case
Pin4	Fout	Output
Pin5	Vdd	Power Supply

**Note:**

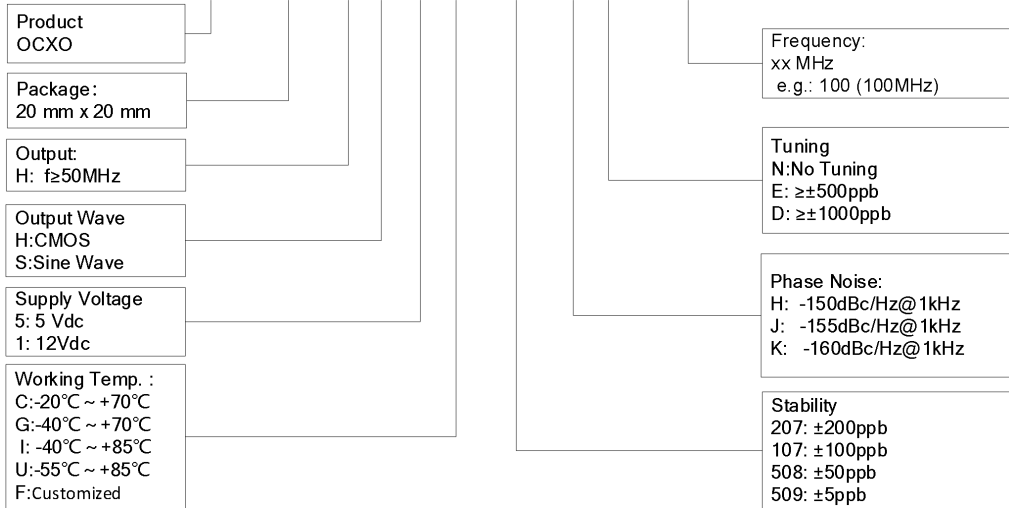
1. Leave Pin 1 unconnected if Vcon is not used.
2. Leave Pin 2 unconnected if Ref is not used.
3. Reference connection of voltage control circuit.

### Reliability

Parameter	Condition
Temperature Stress Test	IEC60068, GJB360B
Mechanical Stress Test	IEC60068, GJB360B
EMC Test (ESD)	IEC61000, JESD22
Solderability	EIA/JESD22-B102-C
RoHS	RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC

### Ordering Guide

## BO 2020H X X X XXX X X XXX.X



**Example:** BO2020HS1C107KN100

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