

**Features**

- Ultra Stable
- Wide Temperature Range
- Fast Warming-up
- DIP Package(20mm\*12mm)

**Applications**

- Base Stations
- Instrumentations
- Medical Electronics
- Others

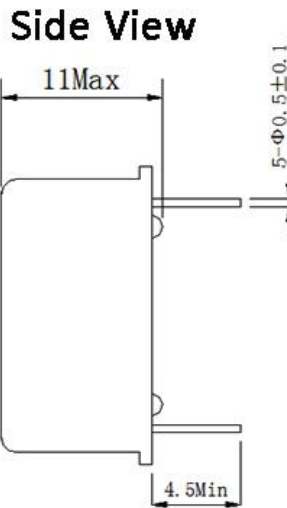
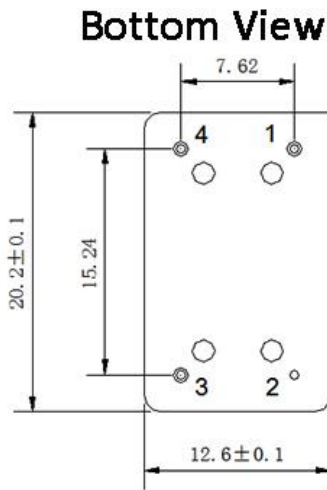

**BO1220L Specifications**

Parameter	Value			Unit	Conditions	
	Min.	Typ.	Max.			
Supply Voltage	-	3.3	-	V		
	-	5.0	-	V		
Power Consumption	-	-	3.0	W	During Warming-up	
	-	-	1.5	W	Steady at +25°C & Still air	
Frequency Range	10 ~ 40			MHz		
Nominal Frequency	10					
Initial Frequency Tolerance	-	-	±100	ppb	At shipment, nominal EFC, +25°C	
Freq. Stability Vs. Temp.	±20	-	±50	ppb	-20°C ~ +70°C	
	±50	-	±100	ppb	-40°C ~ +70°C	
	±50	-	±100	ppb	-40°C ~ +85°C	
	-	-	±200	ppb	-55°C ~ +85°C	
Sine Wave	Output Level	7	-	-	dBm	
	Harmonious	-	-	-30	dBc	
	Spurious	-	-	-70	dBc	
	Load	-	50	-	Ω	
CMOS	V <sub>OH</sub>	2.4	-	-	V	CMOS Output, Load=15pf
	V <sub>OL</sub>	-	-	0.4	V	CMOS Output, Load=15pf
	Duty Cycle	45	-	55	%	(V <sub>OH</sub> - V <sub>OL</sub> )/2
	Rise/Fall edge	-	-	6	ns	CMOS Output, Load=15pf
	Load	-	15	-	pf	
Supply Sensitivity	-	-	±5	ppb	V <sub>cc</sub> ±5%	
Load Sensitivity	-	-	±5		Load±5%	
Aging per Day	-	-	±1		After 30 days of operation	
Aging per Year	-	-	±100		After 30 days of operation	
SSB Phase Noise @10MHz	-	-	-115	dBc/Hz	Offset 10Hz	At +25°C
	-	-	-130		Offset 100Hz	
	-	-	-150		Offset 1kHz	
	-	-	-155		Offset 10kHz	
	-	-	-160		Offset 100kHz	
Control Voltage Range	0	-	3	V	3.3V	
	0	-	5	V	5V	
Frequency Turning 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					

### Reliability

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

### Outline Dimension & Pin Connections



#### Pin Connections

Pin1	Vcon	Control Voltage
Pin2	GND	Ground, Case
Pin3	Fout	Output
Pin4	Vdd	Power Supply

#### Note:

Leave pin 1 unconnected if vcon is not used.

### Ordering Guide

## BO 1220 L X X X XXX X X XX.XX

Product  
OCXO

Outline  
12mm x 20mm

Freq. Range:  
L: <50MHz

Output:  
H: LVTTTL  
S: Sine Wave

Supply Voltage:  
5: 5.0 Vdc  
3: 3.3 Vdc

Temp. Range:  
C: -20°C ~ +70°C  
G: -40°C ~ +70°C  
I: -40°C ~ +85°C  
U: -55°C ~ +85°C

Frequency:  
xx MHz

Tuning:  
N: No Tuning  
E: ≥±500ppb  
D: ≥±1000ppb

Phase Noise  
D: -135dBc/Hz@1kHz  
E: -140dBc/Hz@1kHz  
G: -145dBc/Hz@1kHz  
H: -150dBc/Hz@1kHz

Stability  
107: ±100ppb  
508: ±50ppb  
208: ±20ppb  
108: ±10ppb

**Example:** BO1220LH5C107DN10