

**Features**

- Ultra Stable
- Wide Temperature Range
- Small Packaging(12.6x20.2mm)

**Applications**

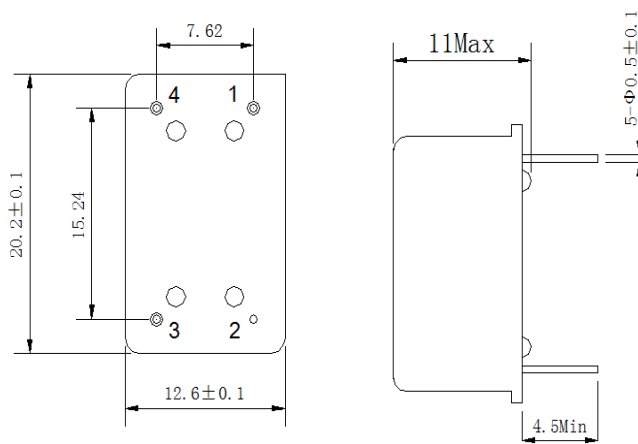
- Base Stations
- Instrumentations
- Synthesizer
- SDH/SONET
- Medical Electronics


**BT1220L Series Specifications**

Parameter	Value			Unit	Conditions	
	Min.	Typ.	Max.			
Supply Voltage	-	3.3	-	V		
	-	5	-	V		
Supply Current	-	-	30	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	
	±0.05	-	±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	
Sine Wave	Output Level	0.8	-	Vp-p		
	Load	50ohm				
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	A=Available N/A=Not Available
10MHz				A	
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**
**Bottom View**

**Pin Connections**

Pin	Symbol	Description
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.

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**Environmental Conditions**

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

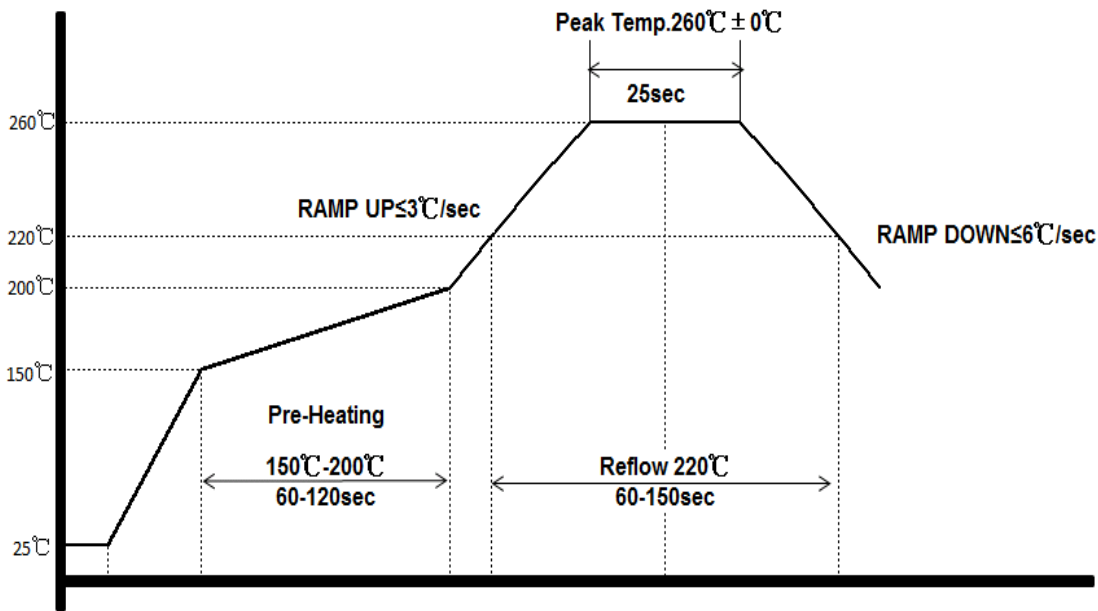
**Maximum Ratings**

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

**Reliability**

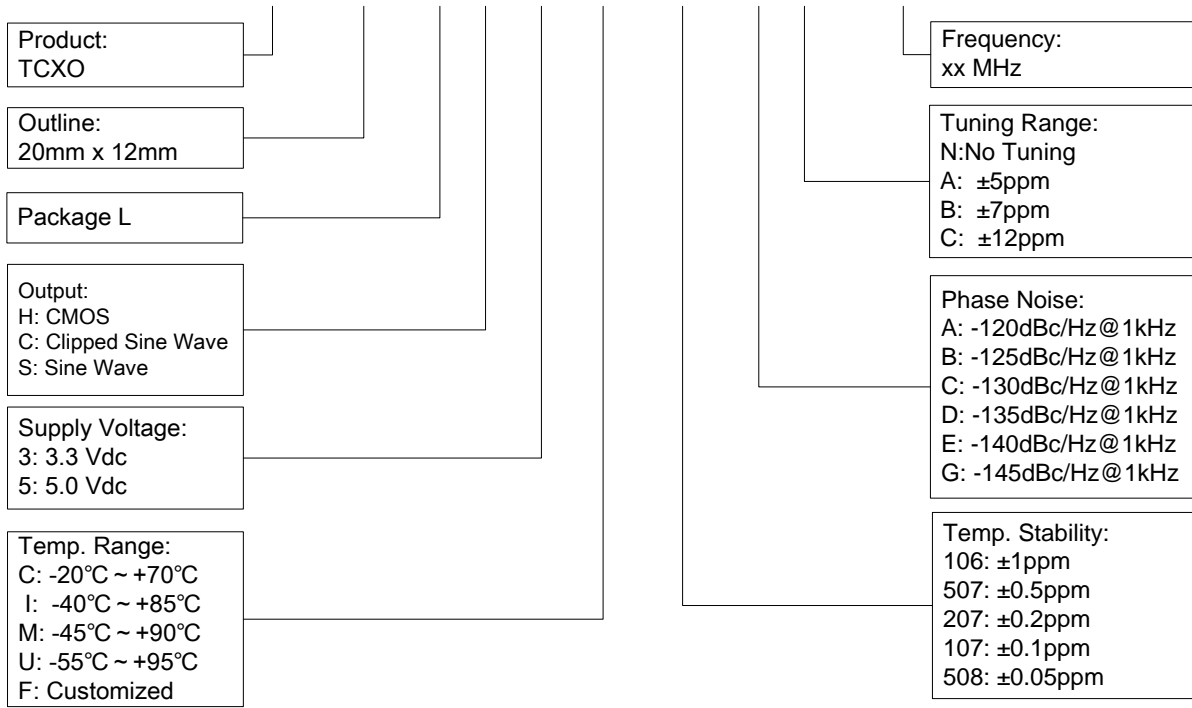
Parameter	Condition
Temperature Stress Test	IEC60068, GJB360B
Mechanical Stress Test	IEC60068, GJB360B
EMC Test (ESD)	IEC61000, JESD22
Solder Ability	EIA/JESD22-B102-C
Moisture Sensitivity Level	MSL3
Contact Pads	Gold over Nickel
RoHS	RHOS Directive 2011/65/EU Annex II Recasting 2002/95/EC

IR Reflow Profile



Ordering Guide

**BT 1220 L X X X XXX X X XX.XX**



Example: BT1220LS5C107DN10

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