Not PB-Free

APPROVAL SHEET

Customer : _____

Part Number: _____

Part No.: 11420010230.0002

Holder : OCXO-20

Frequency: 10.230MHz

Manufacturer: _____

Date: 2023/5/4

Prepared	Checked	Approved

(For Customer Use)

Acceptable	Non-Acceptable

Revision History

No.	Revised Date	Change Content	Approved	Remark
1.0	2023-5-4	Initial Release		

1. Scope

This document describes technical guidelines of product **11420010230.0002**

2. Electrical Characteristics

SINEWAVE OUTPUT OCXO-20						
PARAMETER	**SYMBOL**	**CONDITIONS**	**MIN**	**TYPE**	**MAX**	**UNIT**
Normal Frequency	F_n	SC	-	10.230	-	MHz
Absolute maximum ratings						
Maximum Supply Range	V_{cc}	-	-0.5	-	+5.5	V
Operating Temperature range	T_A	-	-40	-	70	℃
Storage Temperature range	-	-	-55	-	125	℃
Power						
Operating Supply Voltage	V_{cc}		4.75	5.00	5.25	V
Turn-On Power	-	Nom Vcc	-	-	3.6	W
Steady state Power	-	Ta=25℃	-	-	1.2	W
Frequency Stability						
Calibration	-	T_A=25℃	-	±200	±500	ppb
Freq VS Temperature	T_S	-40°C to 70°C(ref to 25°C)	-100	-	+100	ppb
Freq. VS Voltage	-	Vcc=5V±5% (Vc= constant)	-20	-	+20	ppb
Freq. VS Load	-	Load = 50 Ohm±5%	-20	-	+20	ppb
Short term Frequency Stability	-	1S	⩽5E-11			
Freq VS Time (Aging)	-	Per day	-	-	±1	ppb
	-	Per year	-	-	±100	ppb
	-	10 years	-	-	±300	ppb
Warm up time		to within F ± 1 E-7 where F			≤ 5	minutes

		is the frequency reached after 1 hour of continuous operation				
Electronic Frequency Control						
Control Range	V_c	-	0.0	-	4.5	V
Center control voltage	-	25℃ at time of shipment	-	2.25	-	V
Frequency pull Range	-	Vc=0.0V	-	-	-0.7	ppm
	-	Vc=4.5V	+0.7	-	-	ppm
Frequency pull slope	-	-	Positive			
Vc port impedance	-	-	-	100	-	KΩ
Linerity	Lin	-	-10	-	10	%
Output Parameters						
Output signal	-	-	SINEWAVE			-
Output load	-	Output to ground	Load=50 Ohm±5%			-
Output level	-	-	+5		-	dBm
Harmonics	-	-	-	-	-25	dBc
Spurious	-	-	-	-	-75	dBc
Reference voltage	Vref	-	4.3	4.5	4.7	VDC
Phase noise						
	-	10Hz	-	-100	-	dBc/Hz
	-	100Hz	-	-135	-	dBc/Hz
	-	1KHz	-	-145	-	dBc/Hz
	-	10KHz	-	-150	-	dBc/Hz

3. Construction

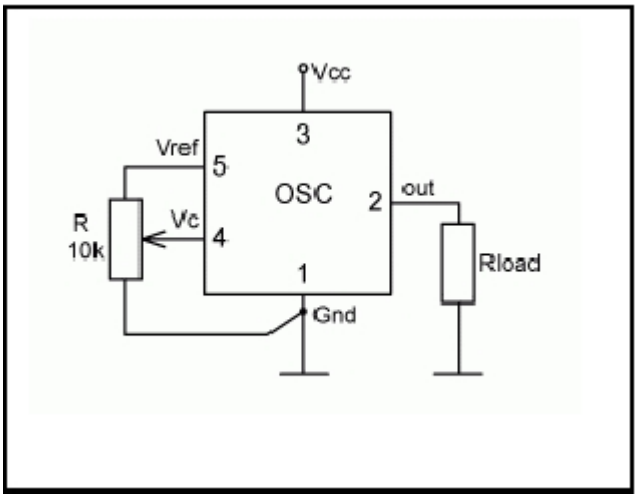
1. Oscillator enclosure seal:

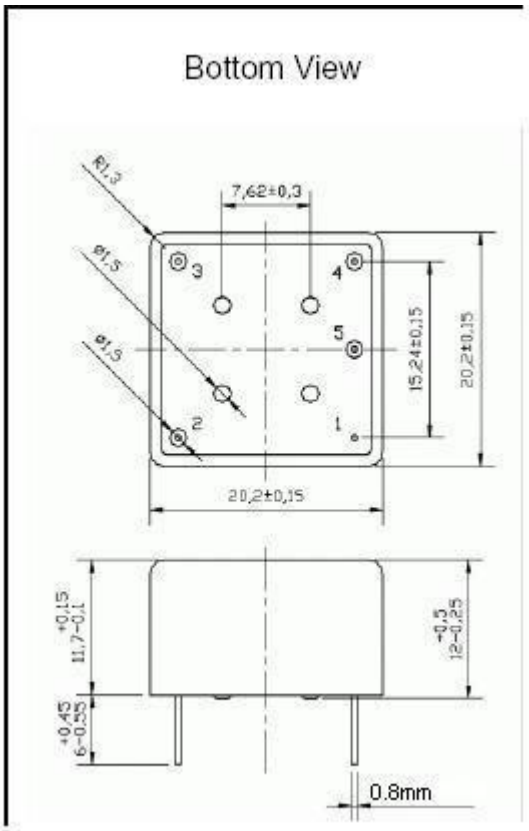
☐Seam seal ■resistance weld ☐cold weld

2. crystal enclosure medium

☐nitrogen ■vacuum ☐dry air

4.Dimension:


Vcc
3
Vref
5
OSC
2
out
R
10k
Vc
4
Rload
1
Gnd

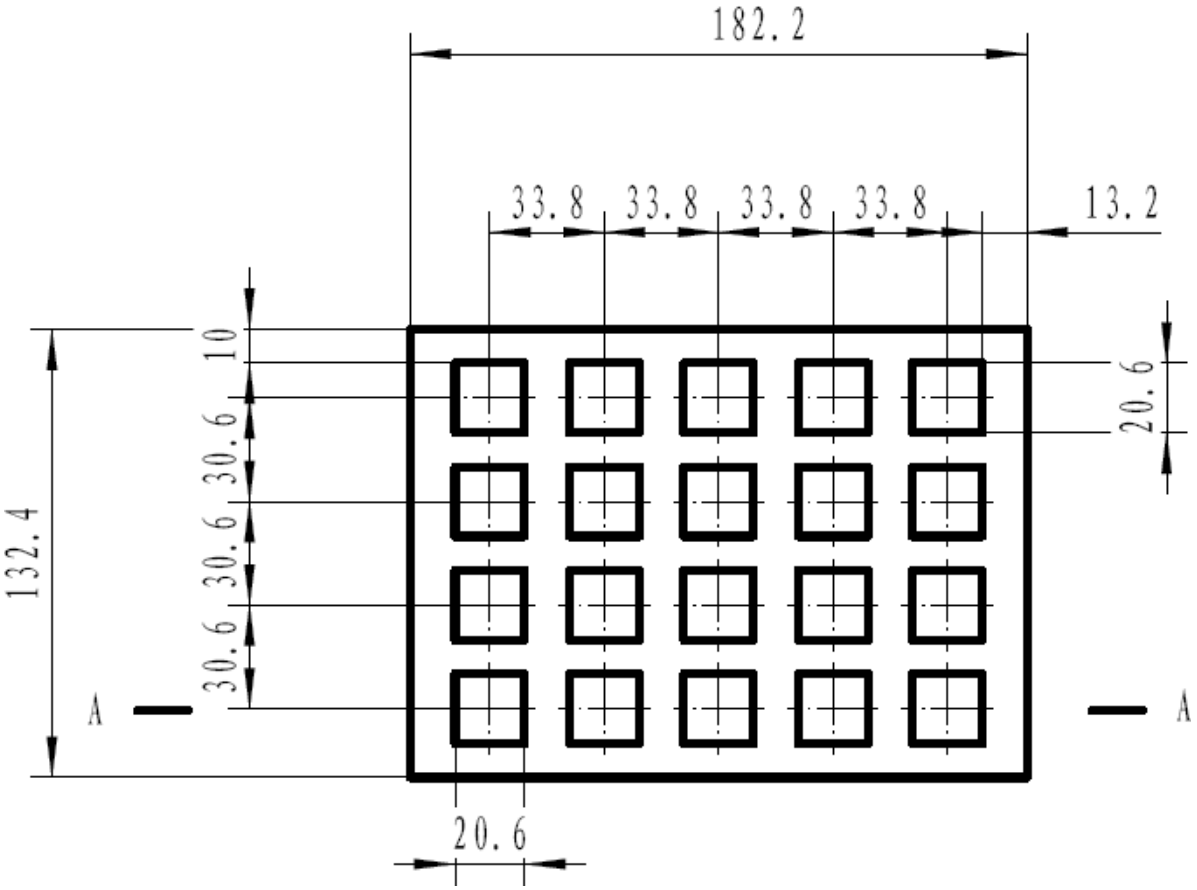

Bottom View
R1.3
7,62±0,3
ø1.5
ø1.5
3
4
5
2
1
15,24±0,15
20,2±0,15
20,2±0,15
+0,15
11,7-0,1
+0,45
6-0,35
+0,5
12-0,25
0.8mm

5. Marking

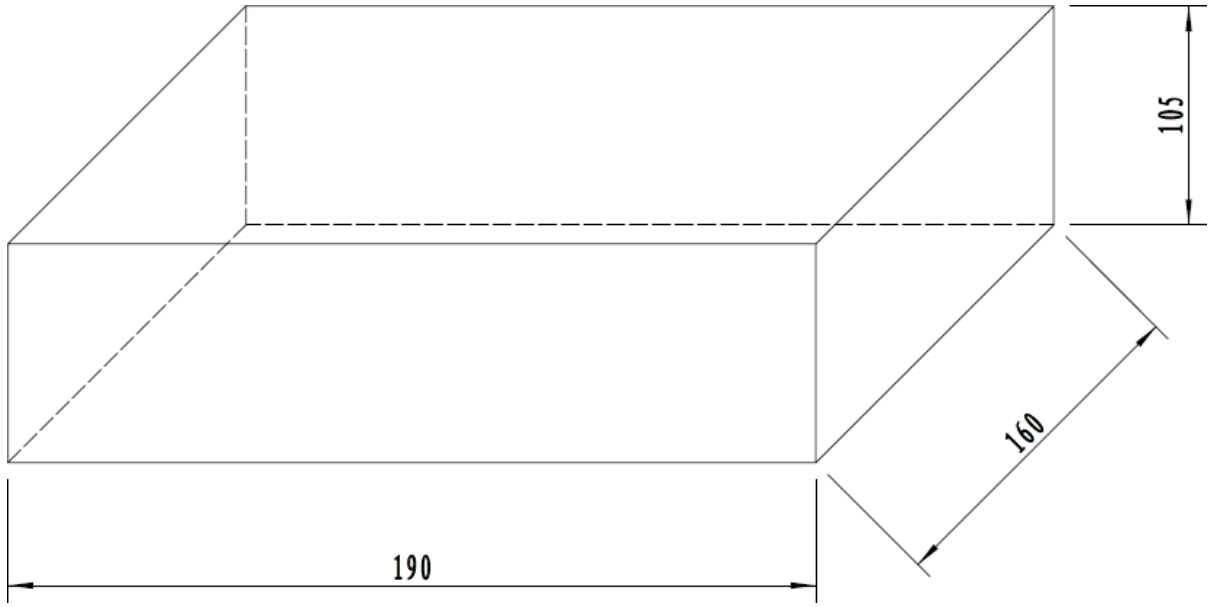
■Laser Marking ☐Ink Marking

Example

6. Packing Instruction



Trap Material: ESD sponge.



60 unites per box.

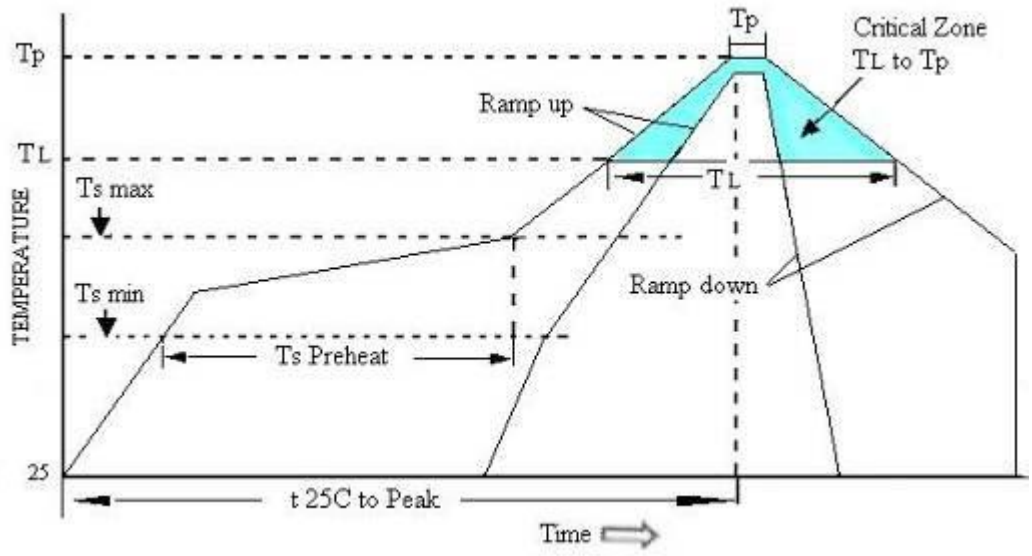
7.Reliability characteristic:

	Item	Condition	Specifications
7.1	Reflow Simulation	3X 240°C Peak 20 secs max above 240°C	ΔF≤±0.2ppm
7.2	Power Cycle	100 Cycles -40°C, 30 minutes no power (off) and 30 minutes powered (on) -- Test product for functionality -- Continue for another 250 cycles -- Test product for functionality -- Intenal visual and mechanical inspection	ΔF≤±0.2ppm
7.3	Thermal Shock	Subject samples to temperature extremes of –40 and +125C, 30 minute soaks at the temperature extremes, 10 seconds maximum transition time between extremes. The test duration is 10 Cycles GJB 360A-96 Method 107.	ΔF≤±0.2ppm
7.4	Mechanical Shock	Subject OCXO to 500 g's, half-sine, pulse width of 1 ms for double ovens; 1000 g's , half-sine, pulse width of 1 ms for single ovens, five shocks in each of 6 directions of 3 perpendicular planes, for a total of 30 shocks. After shock, check with final test. GJB 360A-96 Method 213	ΔF≤±0.2ppm
7.5	Vibration	Vibrate oscillators sinusoidally from 10 Hz to 55 Hz with a double amplitude of 0.60" and from 55 Hz to 500 Hz with a peak acceleration of 10 g's for 30 minutes in each of three perpendicular directions. Oscillators to be checked with final test after vibration. GB2423.10-1995（idt IEC 68-2-6:1982）Method Fc。	ΔF≤±0.2ppm
7.6	Free drop	Drop from 10cm height on 3cm hard wooden board for 6 times GB2423.8-1995（idt IEC 68-2-32:1990）Method Ed。	ΔF≤±0.2ppm
7.7	Aging	Bias oscillators at nominal voltage and subject oscillators to 25C for 1008 hours. Readings are to be taken with oscillator at 25C twice per day. Determine aging (frequency shift post 1008 hours minus initial	Per. Spec.

		frequency). Use the results to predict long-term aging.	
7.8	Solderability	Precondition parts by steaming (over boiling water) for 8 hours OR age the parts at 150C for 16 hours	A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed.

8.All products are RoHs compliant

9. Reflow Profile



High Temperature Infrared /Convection

Note:Temperature shown are applied to body of device

Ts max to T_L(Ramp-up Rate)	3℃/second max
Preheat Temperature Min(Ts Min) Temperature Typical(Ts Typ) Temperature Max.(Ts Max) Time(ts)	 150℃ 175℃ 200℃ 60-180 seconds
Ram-up Rate(T_L to Tp)	3℃/second Max
Time Maintained Above: --Temperature(T_L) --Time(T_L)	 217℃ 60-150seconds
Peak Temperature (Tp)	260℃ Max for 10 seconds
Time within 5℃ of actual peak(t_p)	20-40 seconds
Ramp-down Rate	6℃/seconds Max
Tune 25℃ to Peak Temperature(t)	8 minutes Max
Moisture Sensitivity Level	Level 1

High Temperature Manual Soldering

Note:Temperature shown are applied to body of device

260℃ Max for 5 seconds Max, 2 times Max