深圳市维拓精电科技有限公司
WTL International Limited

APPROVAL SHEET

DESCRIPTION :	Half size/OCXO
NOMINAL FREQ.:	10.000MHz
WTL P/N:	WTL1L51001SH
VERSION:	1
DATE:	2024.07.6
Customer	Customer P/N
	/
Customer Signature	**WTL**
	Approved by: Kavin Liu
	Checked by: Shu Ping
	Issued by: colin zhan

REVISION HISTORY

Revised Page	Revision Content	Date	Ref. No.	Reviser

1. Scope

This document describes technical guidelines of product **WTL1L36982PZ** in the WTL.

2. Electrical Characteristics

CMOS OUTPUT OCXO-14

PARAMETER	SYMBOL	CONDITIONS	MIN	TYPE	MAX	UNIT
Normal Frequency	F_n	SC	-	10	-	MHz
Absolute maximum ratings						
Maximum Supply Range	V_{cc}	–	-0.5	-	+5.5	V
Operating Temperature range	T_A	–	-40		70	℃
StorageTemperature			-55		100	℃
Power						
Operating Supply Voltage	V_{cc}		4.75	5	5.25	V
Turn-On Power	-	Nom Vcc	-	1.8	2.5	W
Steady state Power	-	Nom Vcc Ta=25℃	-	0.75	1.0	W
Frequency Stability						
Calibration		T_A=25℃	-	±300	±500	ppb
Freq VS Temperature	T_S	-40℃ to 70℃	-	±50	-	ppb
Freq. VS Voltage		±5%	-	-	±3	ppb
Freq. VS Load		±10%	-	-	±3	ppb
FreqVSTime(Aging)	-	Per day	-	-	±1	ppb
		Per years	-	-	±100	ppb
		10 years	-	-	±700	ppb
Output parameters						
Output signal		-	HCMOS			-
Output load		Output to ground	13.5	15	16.5	pF
Output Level	VOH	High Level	4.5	-	-	V
	VOL	Low Level	-	-	0.5	V

Duty Cycle			45	50	55	%
Risetime/Falltime			-	-	5	ns
Phase Noise	-	10Hz	-	-110	-	dBc/Hz
	-	100Hz	-	-135	-	dBc/Hz
	-	1KHz	-	-145	-	dBc/Hz
	-	10KHz	-	-148	-	dBc/Hz

Note 1: 8 hours operation required if off for 24 hours
24 hours operation required if off for up to 1 week 48 hours operation required if off for up to 1 month

3.Construction

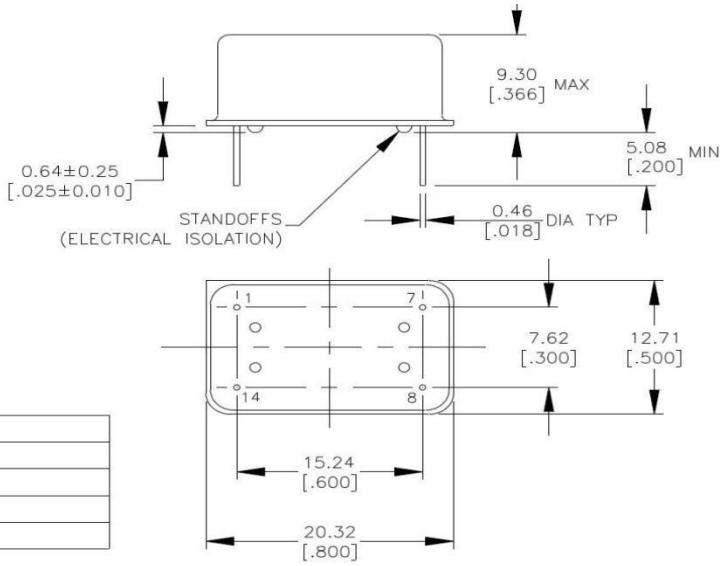
3.1 Oscillator enclosure seal:

□Seam seal ■resistance weld □cold weld

3.2 crystal enclosure medium

□nitrogen ■vacuum □dry air

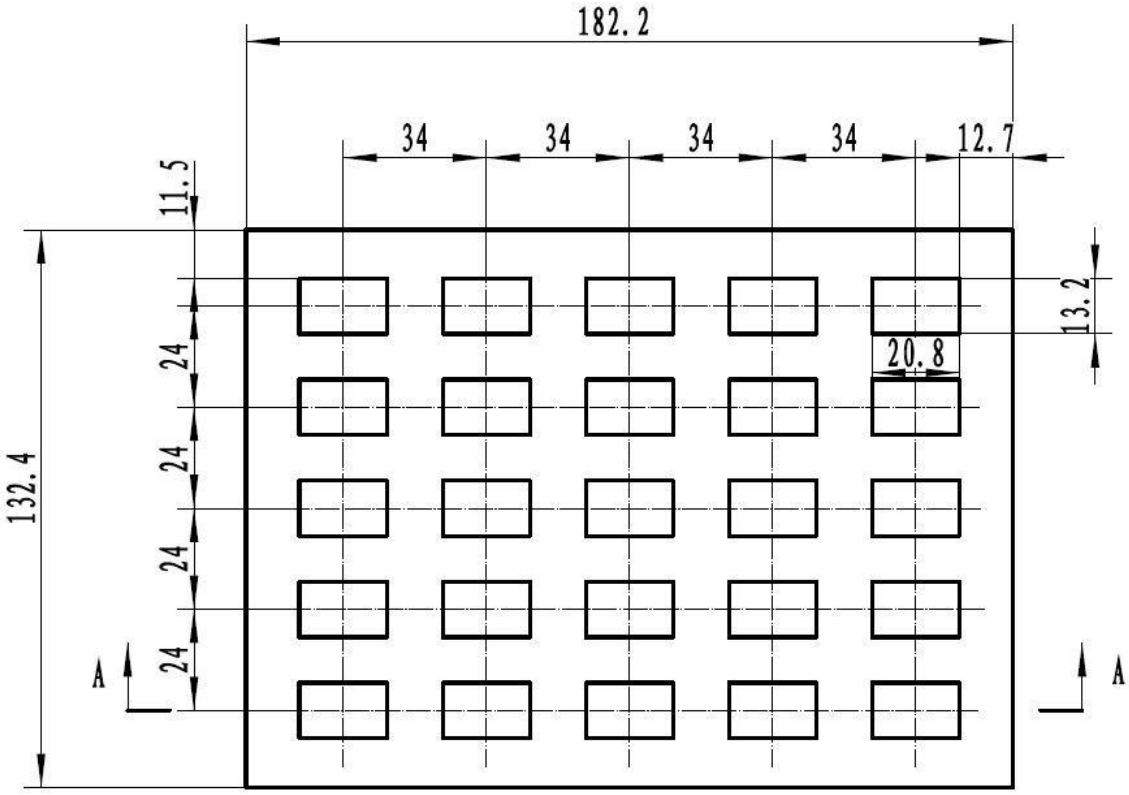
4.Dimension:



PIN / PAD	FUNCTION
1	N/C
7	GROUND
8	OUTPUT
14	Vcc

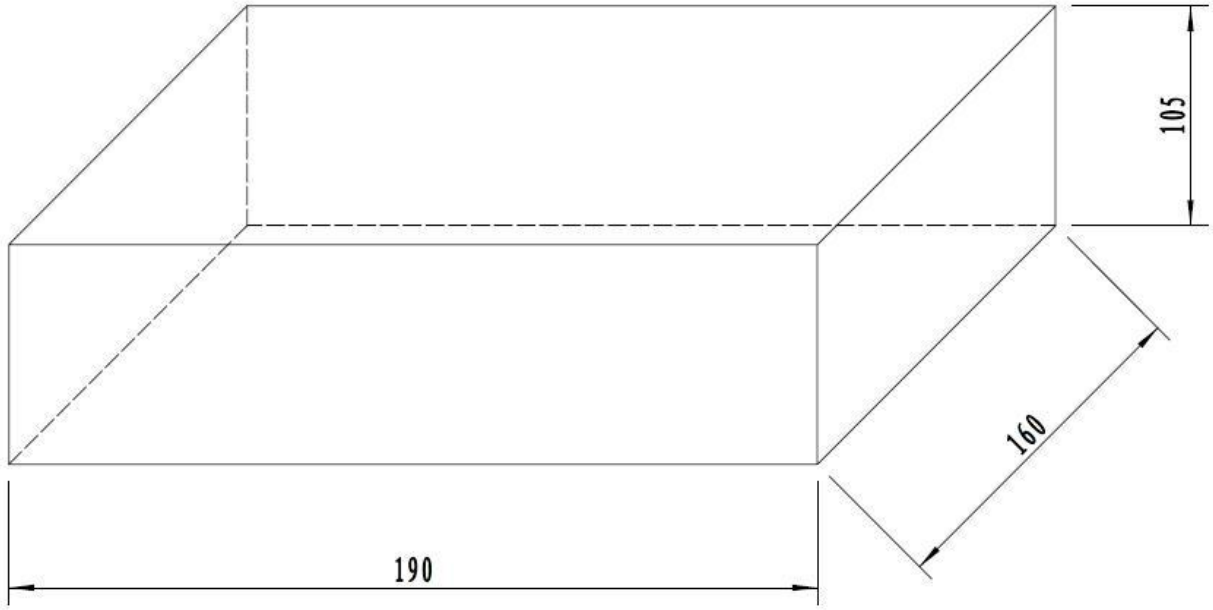
Units: mm

5. Packing Instruction



25 units per tray

Tray Material: ESD sponge.



36 unites per box.

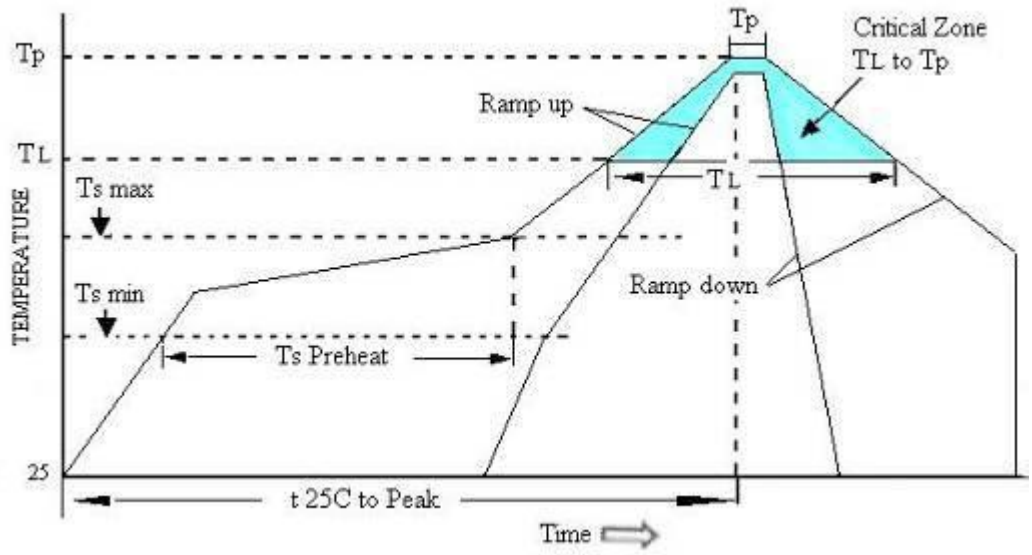
7.Reliability characteristic:

	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	ΔF≤±0.2ppm
		shock, check with final test. GJB 360A-96 Method 213	

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 frequency). Use the results to predict long-term aging.	Per. Spec.
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