

Description

This model VCTCXO with IC compensation circuit, operating on the crystal fundamental mode, has better frequency stability at various temperature ranges and high reliability.

Typical size : 5.0*3.2*1.15 mm

Feature

The frequency is 16.8MHz.

The output type: Clipped sine

SMD.

The supply power between 3.13 V and 3.47V.

Low current

Absolute Maximum Ratings

ITEM	Conditions	REMARK
0.1 Supply Voltage (Vcc)	+5.0V MAX	
0.2 Storage Temperature	-40°C ~+85°C	

Frequency Stability

ITEM	Specification	REMARK
1.1 Operating Temperature Range	-30°C ~+70°C	
1.2 Frequency Stability(overall)		
1.2.1 Initial tolerance @25±2°C After 2 times reflow	<±1.5PPM	@25±2°C Vcc=3.0V Vc=1.5V
1.2.2 Freq. Vs Operating Temp	<±1.5PPM	From -30°C to +80°C
1.2.3 Freq. Vs Vcc	<±0.2PPM	@3.3V±5%
1.2.4 Aging	<±1.0PPM/Year	
1.2.5 Freq. Vs Load	<±0.2ppm	@Load±10%
1.3 Pulling range		
1.3.1 Vc Control	0.5 to 2.5V	
1.3.2 Pulling range	-999PPM ~-8PPM	@Vc=0.5V
1.3.3 Pulling range	+8PPM ~+999PPM	@Vc=2.5V
1.3.4 linearity	10% max	

Supply & Output waveform

ITEM	Specification	REMARK
2.1 Supply Voltage	3.3V±5%	
2.2 Supply Current	2.0mA(max)	
2.3 Output waveform	Clipped sine	
2.3.1 Level	0.8Vp-p min	10Kohm//10pF
2.4 Start time	2ms	

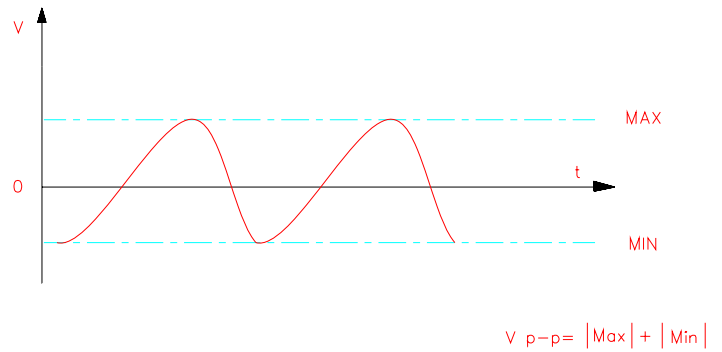
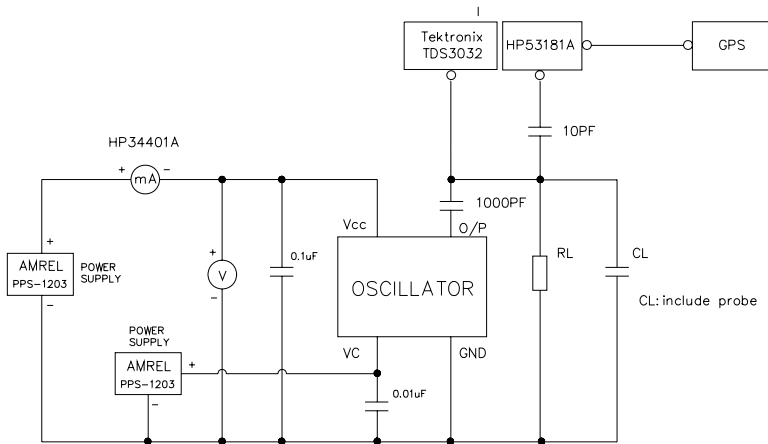
SSB phase Noise & Jitter

Item	Parameter	Test Condition	Max	Units
3.1	SSB Phase Noise	@10Hz	-80	DBc/Hz
3.2	SSB Phase Noise	@100Hz	-110	DBc/Hz
3.3	SSB Phase Noise	@1KHz	-130	DBc/Hz
3.4	SSB Phase Noise	@10KHz	-140	DBc/Hz

Reliability

Item	Parameter	Test Condition	Reference STD.
4.1	Thermal Shock	-55°C to +125°C, each temperature 10 mins, 200 cycles.	MIL-STD-883D 1011.9, condition B
4.2	High Temperature & Humidity Storage	+85°C, 85% Relative humidity, 500hrs.	JIS-C 7022 B-5 Conditions C
4.3	Aging	+85°C, +125°C, test time period 1,2,4,7,10,20,50,100 days	MIL-STD-883D 1008 JIS-C 6701 11.2 & 11.6
4.4	Low temperature Storage test	Temperature -40°C to -2°C, 500hrs.	MIL-STD-883D 1009,8, condition C
4.5	Mechanical Shock	1500g, half-sine, 0.5ms, 3 directions 3times	MIL-STD-883D 2002.3, condition B
4.6	Vibration	20~2000Hz, 1.5mm, 20g X,Y,Z each direction 4hrs, sinuate	MIL-STD-883D 2005.2, condition B
4.7	IR reflow	245°C +/-5°C, 5+/-0.5sec(max)	

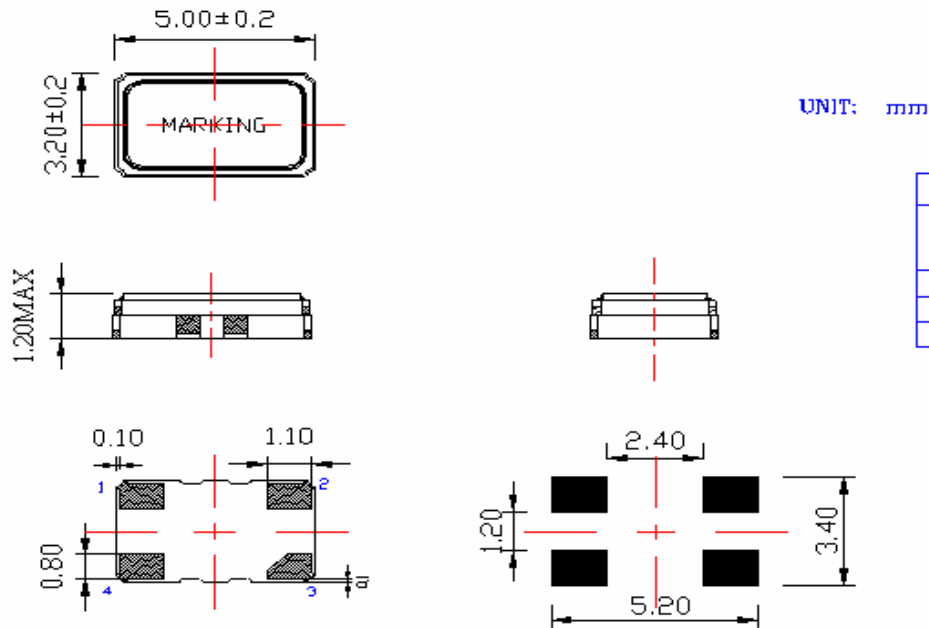
Test circuit and Wave shape



CLIPPED SINEWAVE TEST CIRCUIT

CLIPPED SINEWAVE SHAPE

Outline Drawing

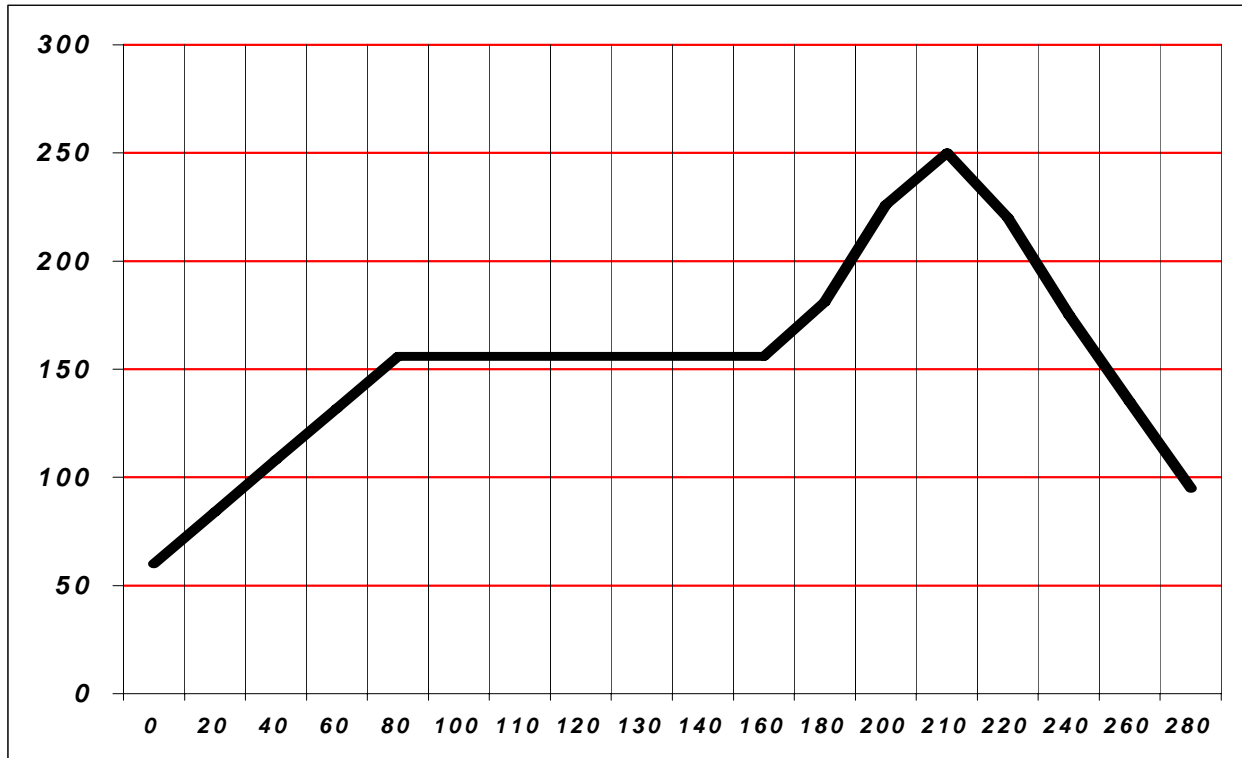


UNIT: mm

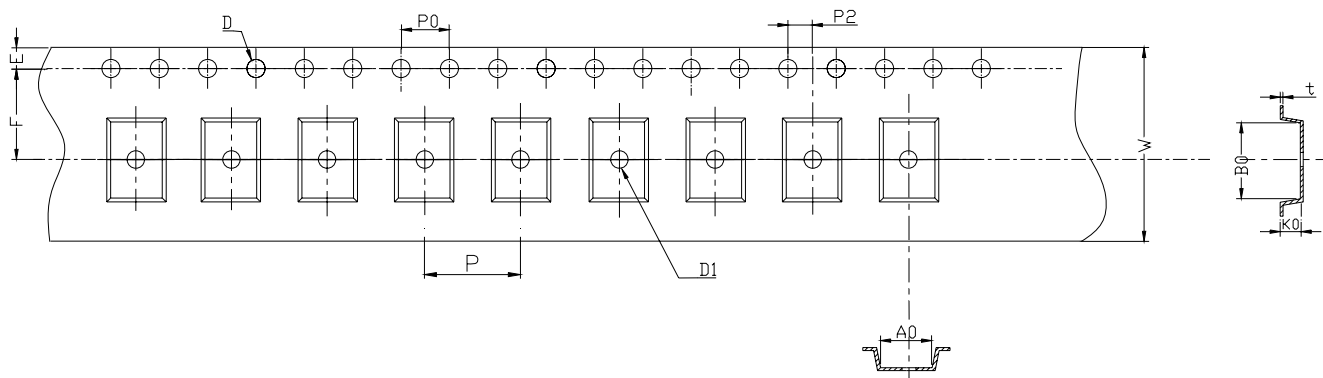
PIN	FUNCTION
1	VCON-VCTCXO GND-TCXO
2	GND
3	OUT
4	VDD

Recommended Soldering Pattern

IR Reflow



Package



A0	B0	D	D1	E	F	K0	P	P0	P2	t	W
3.60±0.1	5.40±0.1	Ø1.50	—	1.75±0.1	7.50±0.1	2.00±0.1	8.00±0.1	4.00±0.1	2.00±0.1	0.35±0.05	16.00±0.3

