

深圳市炬焯科技有限公司
CHIP SUN TECHNOLOGY CO., LTD

**APPROVAL
SHEET**



CUSTOMER: Quartz 1

DESCRIPTION: SMD5032 VCTCXO 12.288MHz

MANUFACTURER PART NO.: FVTO-12.288M3.3SM5-1.0/2.0C

CUSTOMER PART NO: _____

USED IN MODEL: _____

APPROVAL		
TECHNOLOGY DEPT.	QUALITY DEPT.	PURCHASING DEPT.

Date: 2023.06.19



深圳市炬焯科技有限公司

CHIP SUN TECHNOLOGY CO., LTD

地址 ADD: 深圳市龙华新区大浪腾龙路淘金地电子商务孵化基地 B 座 206
Rm. 206, Tower B, Taojindi Building, Tenglong Road, Dalang Street,
Longhua New District, Shenzhen, China

电话 TEL: 86-755-83458798 传真 FAX: 86-755-83459818

网址 WEB ADD: <http://www.chinachipsun.com>

E-MAIL: sales04@chinachipsun.com

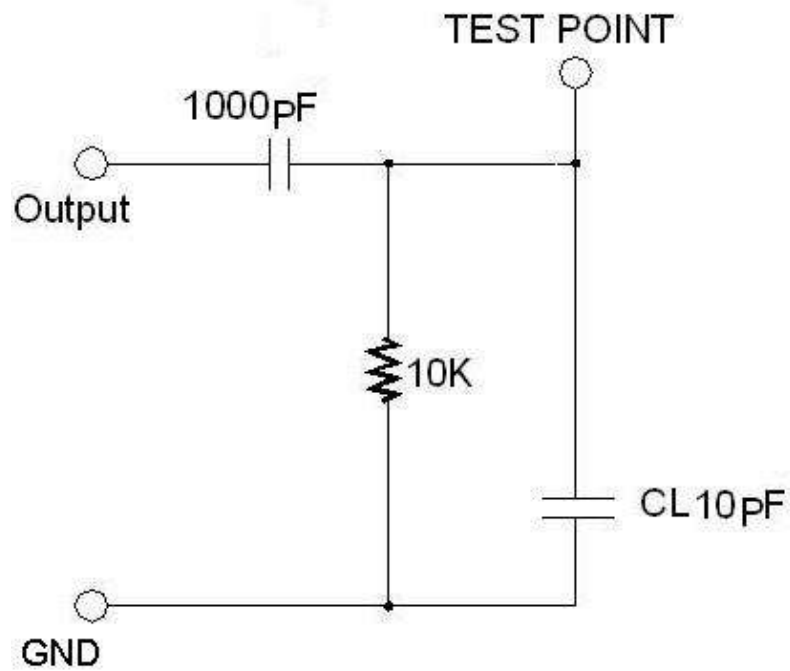
1. TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR SPECIFICATION

Parameter	Value	Condition
1.1 Frequency:	12.288MHz	
1.2 Holder type:	FVTO531S	
1.3 Supply voltage:	3.3 V _{DC} ± 5%	
1.4 Current:	3.5mA max	10K Ω //10pF
1.5 Output Level:	0.8 V _{p-p} Min (Clipped Sine Wave DC-coupled 10K Ω //10pF)	
1.6 Output Load:	10K Ω //10pF ± 10%	
1.7 Operable temperature range:	-30°C To +85°C	
1.8 Storage temperature range:	-40°C To +85°C	
1.9 Frequency tolerance:	± 1.0ppm max	at 25°C
1.10 Frequency Stability:		
vs. Temperature:	± 2.0ppm max	-30°C To +85°C
vs. Supply voltage:	± 0.2ppm max	3.3V ± 5%
vs. Load Coefficient:	± 0.2ppm max	10K Ω //10pF +/-10%
vs. Aging:	± 1.0ppm max	1 Year (25 ± 2°C)
1.11 Start Up Time	3.0 ms max	More than 90% of final amplitude
1.12 Frequency Adjustment	± 10ppm min	V _{cont} =1.5 ± 1.0V
1.13 Phase noise:		
@ 1KHz offset	-145 dBc/Hz	
1.14 Test circuit	Refer to fig.2	
1.15 Dimensions and marking	Refer to page.3	
1.16 Emboss carrier tape & reel	Refer to page.5 and page.6	

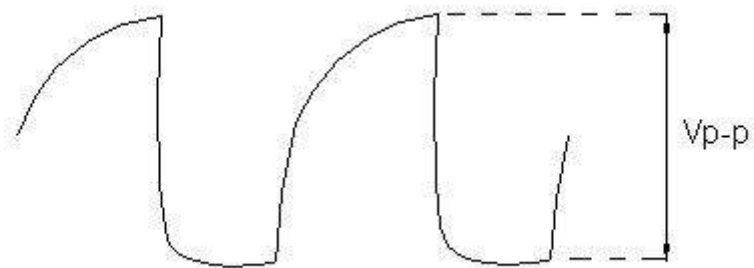
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DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	2/9

2. Test circuit



3. Output Waveform:

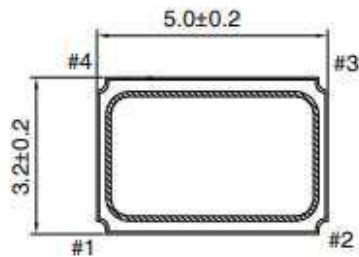


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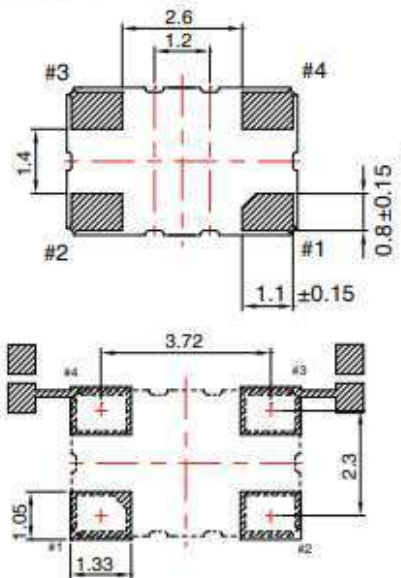
DESCRIPTION	VCTCXO-SMD5032 24.576MHz 3.3V	Page:
DATE	2023-06-19	3/9

4. FVTO531S DIMENSIONS

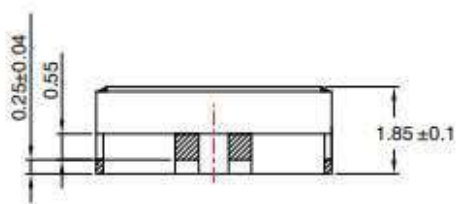
[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1 μ F as close to the part as possible between VDD and GND pads.

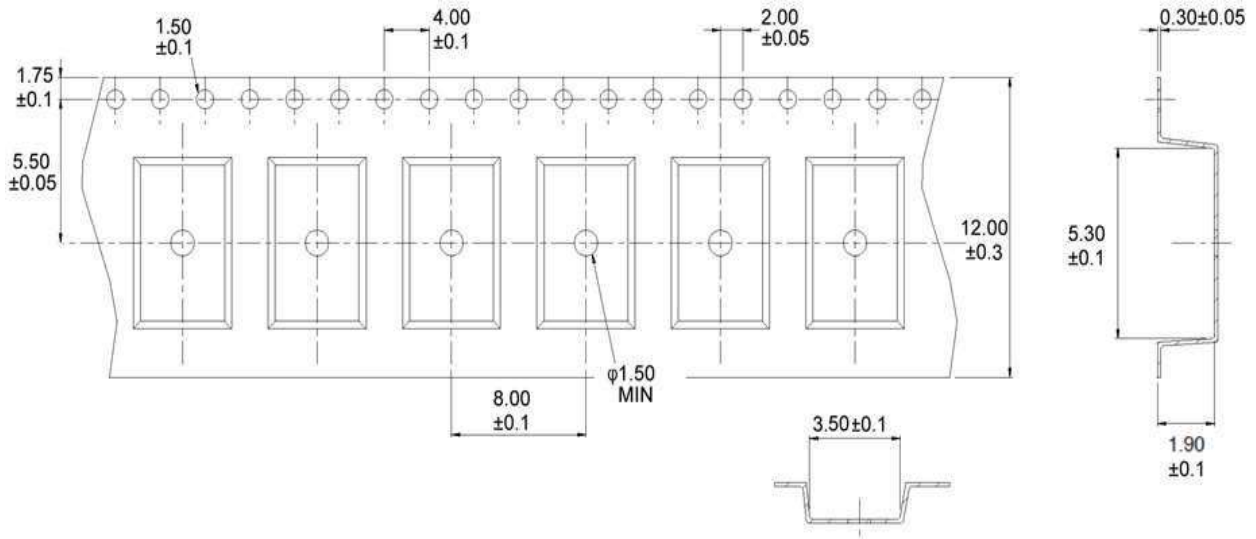
Pin	Function
#1	VOCN:VC-TCXO GND/NC:TCXO
#2	GND
#3	OUTPUT
#4	VDD

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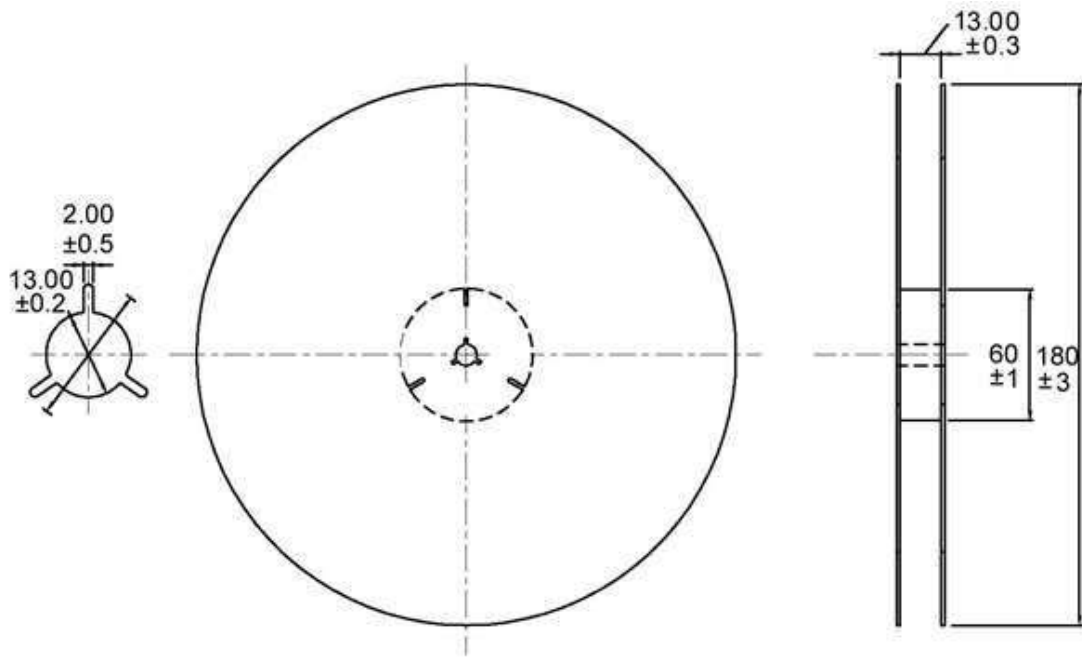
DESCRIPTION	VCTCXO-SMD5032 24.576MHz 3.3V	Page:
DATE	2023-06-19	4/9

5. FVTO531S EMOSS CARRIER TAPE & REEL

a.) Dimensions of Carrier Tape



b.) Dimensions of Reel

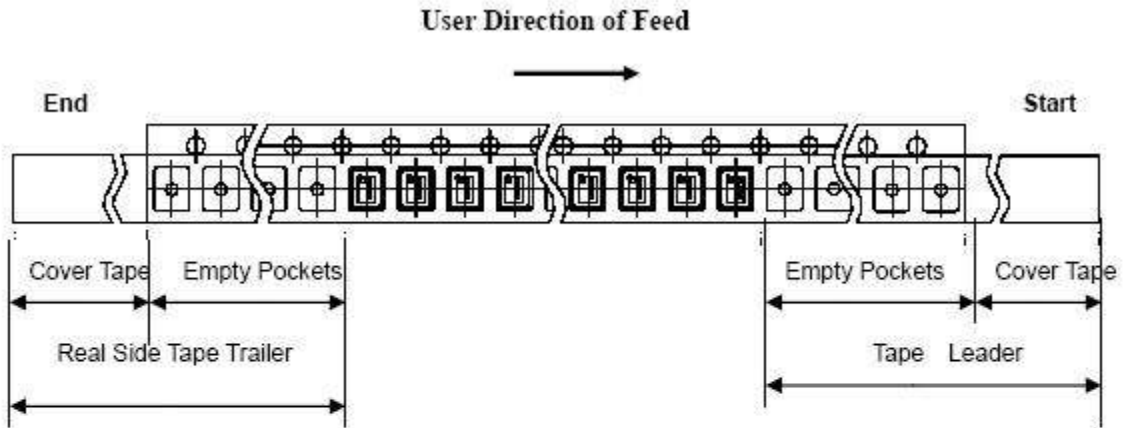


Unit:mm

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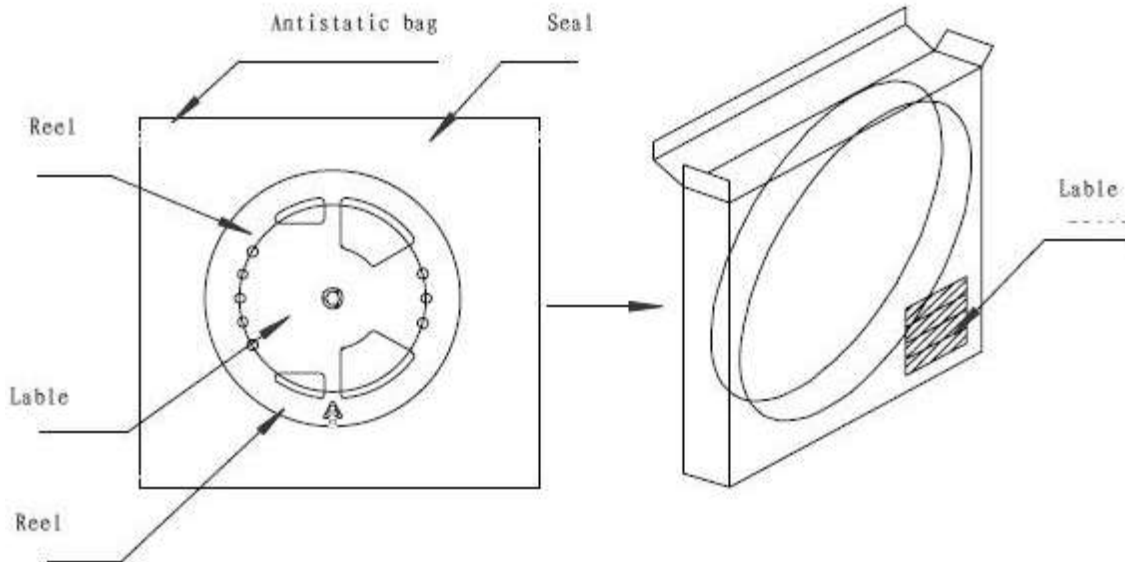
DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	5/9

c.) Packing



Item		Empty Space
Tape Leader	Cover Tape	Min.250mm
	Empty Pockets	Min.160pockets
Tape Trailer	Cover Tape	Min.250mm
	Empty Pockets	Min.160mm

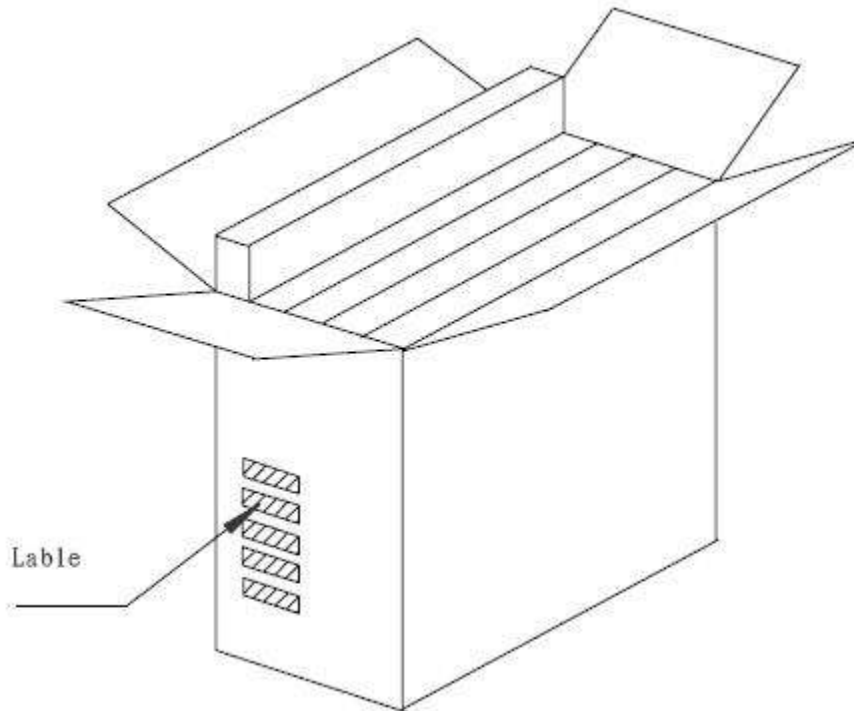
d.) Inner carton



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DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	6/9

d.) Outet carton



e.) Marking Label

Label contents

- .The type of product
- .Our specification No.
- .Your Part No.
- .Lot No.
- .Nominal Frequency
- .Quantity
- .Our Company Name

INSPECTION RECORDS	
PART NUMBER	
Lot. NO:	
HOLDER TYPE	
FREQUENCY	
REMAKS	
QUANTITY	
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Sticks label for every reel.

f.) Standard packing quantity

1,000PCS / REEL

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DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	7/9

6. STORAGE ENVIRONMENT

- * Storage the reel at normal temperature and humidity
- * Open the packing just before using.
- * Do not expose the sun.
- * Do not storage with some erosive chemicals.
- * Nothing is allowed to put on the reel or carton to prevent mechanical damage.

7. HANDLING

- * Handle with care to prevent the damage of tape, reel and products.

- ELECTROSTATIC DISCHARGES

This device contains a CMOS IC. Please take precautionary measures against ESD damage.

- SHOCK RELIABILITY

This device contains a quartz crystal, so please do not give too much shock or vibration.

Surface mounters can be used for assembling, but be sure to check your machine conditions before using them.

- ULTRASONIC CLEANING

Also be sure to check your cleaning condition of ultrasonic cleaning apparatus.

- TEMPERATURE AND HUMIDITY

We recommend to store and use device under normal temperature and humidity for frequency stability. Condensation may cause this device damages.

CHIP SUN TECHNOLOGY CO., LTD		
DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	8/9

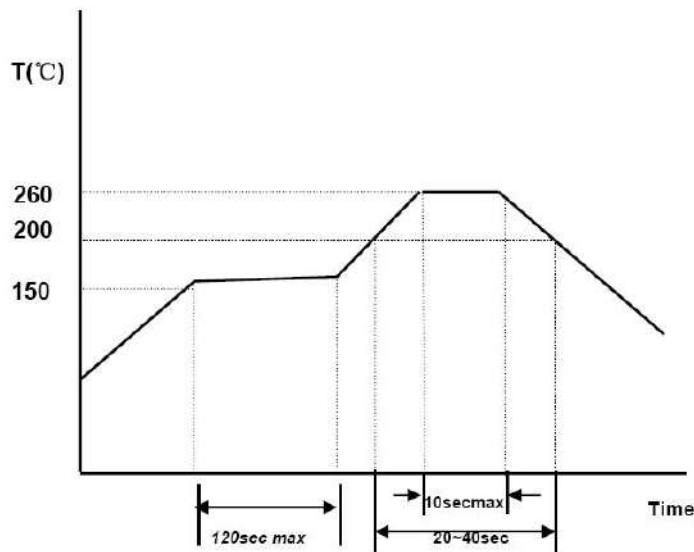
8. Mechanical Characteristics:

NO.	ITEM	CONDITIONS	REQUIREMENT
8.1	Shock Test	150cm, onto concrete, each side(6), corner(1), total 7times	No visible damage Meet electrical specification.
8.2	Vibration Test	20Hz~500Hz, amplitude 1.5mm 500-2000Hz, accelerate 20g X,Y,Z each direction ×15min	No visible damage Meet electrical specification.
8.3	Solder ability Test	235°C±5°C solder bath, 3±0.5sec	No visible damage more than 95% must be covered Meet electrical specification.

9. Environmental Characteristics:

NO.	ITEM	CONDITIONS	REQUIREMENT
9.1	Low Temperature Enduring	-40±2°C, 120±2 hours cooled to room temperature for 2 hours.	No visible damage Meet electrical specification.
9.2	High Temperature Enduring	+85±2°C, 120±2 hours cooled to room temperature for 2 hours.	No visible damage Meet electrical specification.
9.3	Humidity	+60°C, 95%RH, 120±2 hours cooled to room temperature for 2 hours.	No visible damage Meet electrical specification.
9.4	Heat shock	-40°C/30min~85°C/30min, 100cycles cooled to room temperature for 2 hours.	No visible damage Meet electrical specification.

INFRARED REFLOW TEMP. PROFILE:



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DESCRIPTION	VCTCXO-SMD5032 12.288MHz 3.3V	Page:
DATE	2023-06-19	9/9