

Date : **2004.11.19**  
No. : **H26.00**  
Rev. : **Preliminary**

## VC-TCXO SPECIFICATION

Customer	ZTE
Customer Model	
Type	<b>3225 26MHz VC-TCXO</b>
Samsung Part No.	<b>TOH2600DPI4CNP - Preliminary</b>



<i>Issued</i>	<i>Checked</i>	<i>Approved</i>
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**Revision Record**

Rev	Date	Page	Contents	Remarks

### 1. Construction Of Part No.

example **TO H XXXX D P H 4 K R A**  
           a b c d e f g h

No	Meaning	No.of Digits	Example
a	Name Of Product	2	TO : Temperature Compensated Crystal Oscillator
b	Size Of Product	1	B : 5.0x3.2x1.5 mm    F : 4.0x2.5x1.2 mm H : 3.2x2.5x1.2 mm    C : User Spec
c	Nominal Frequency	4	XXXX : XX.XX00000 MHz
d	Additional Function	1	N: No Additional Function D: Digital Temperature Compensation M: Multi-Output Function
e	Operating Voltage	1	A: 3.0V    D: 5.0V    G:2.4V    P: User Spec
f	Operating Temperature	1	H : -30°C ~ 80°C    I : -30°C ~ 75°C J : -30°C ~ 70°C    K : -20°C ~ 70°C L : 0°C ~ 50°C    M : User Spec
g	Pin Number	1	4 : 4 pin
h	User Serial Number	3	

### 2. Electrical Characteristics

Parameter	Value	Condition
Output Frequency	26.000000MHz	
Supply Voltage	DC 2.8V +/-5%	
Output Level	0.8 Vp-p Min (Clipped Sine Wave)	10kohm//10pF +/-10% each
Current Drain	1.5 mA Max	10kohm//10pF +/-10% each
Operating Temperature Range	-30°C to +75°C	
Storage Temperature Range	-40°C to +85°C	
Frequency Stability		
vs. Temperature	+/-2.5ppm Max	Referenced to 25°C
vs. Supply Voltage	+/-0.3ppm Max	DC 2.8V +/-5%
vs. Load	+/-0.2ppm Max	10kohm//10pF +/-10% each
vs. Aging	+/-1.0ppm Max	1 Year
Frequency Tolerance		
Initial	+/-1.5ppm Max	Vcont=1.5V, T=25°C+/-2°C
After Reflow	+/-2.5ppm Max	Vcont=1.5V, T=25°C+/-2°C
AFC-Characteristic		
Vcont=2.5V	+9 to +15ppm	Referenced to Vcont=1.5V
Vcont=0.5V	-15 to -9ppm	

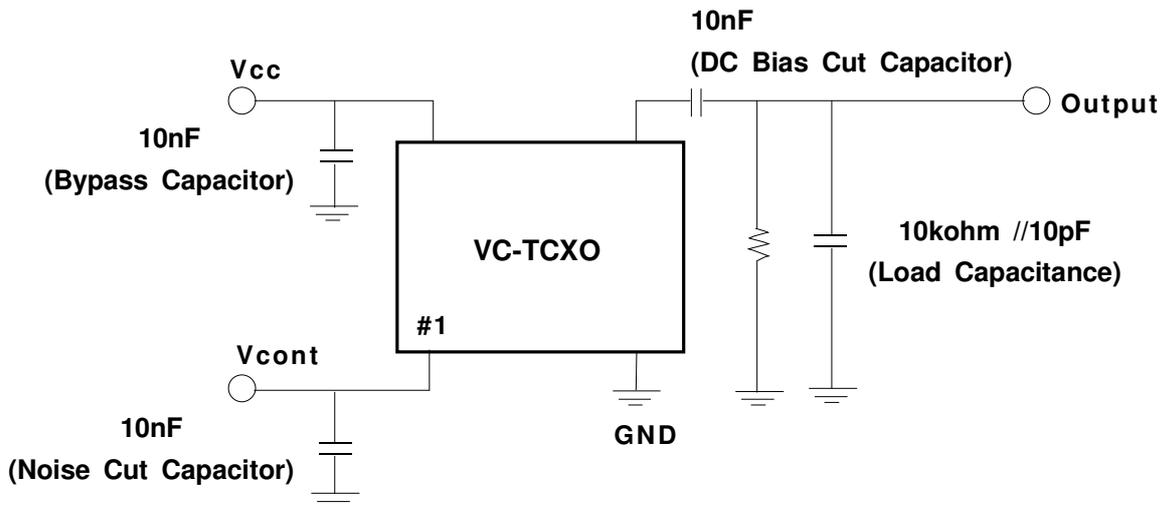
### 3. Environmental Characteristics

No	Test Item	Test Condition
1	High Temp. Storage	85+/-2°C, 96+/-2Hr
2	Low Temp. Storage	-40+/-2°C, 96+/-2Hr
3	High Temp. & High Humidity Storage	40°C, 90~95%RH, 96+/-2Hr
4	Thermal shock	-40°C/30min ~ 85°C/30min, 15cycles
5	Vibration	Frequency : 20~2000Hz Acceleration : 5G XYZ each direction × 30min
6	Drop	150cm, 120g Jig, onto concrete, each side(6), corner(1), total 7times
7	Solderability	230°C+/-5°C for 10sec, more than 90% must be covered

**Note**

1. Must be measured after 4~12hours at room temperature, humidity.
2. Frequency must be within initial value +/-2ppm.

### 4. Measurement Circuit (VC-TCXO)

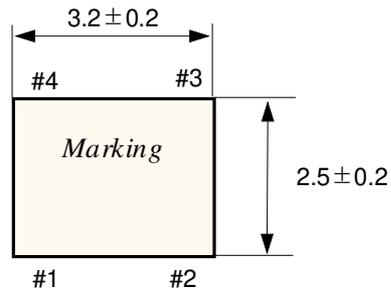


※ Note

1. Be cautious of VC-TCXO pin connection.
2. Load Capacitance includes probe and test JIG capacitance.

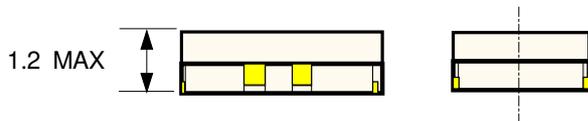
### 5. Outline (3225 VC-TCXO)

Top View

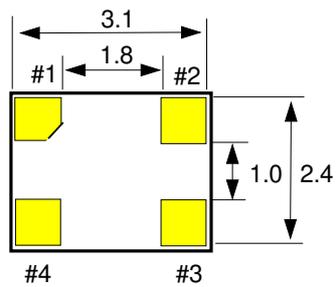


Lead No.	Connection
#1	Vcont
#2	GND
#3	Output
#4	Vcc

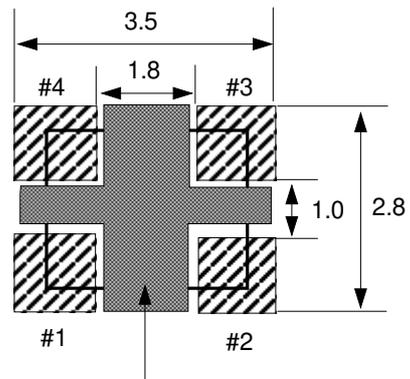
Side View



Bottom View



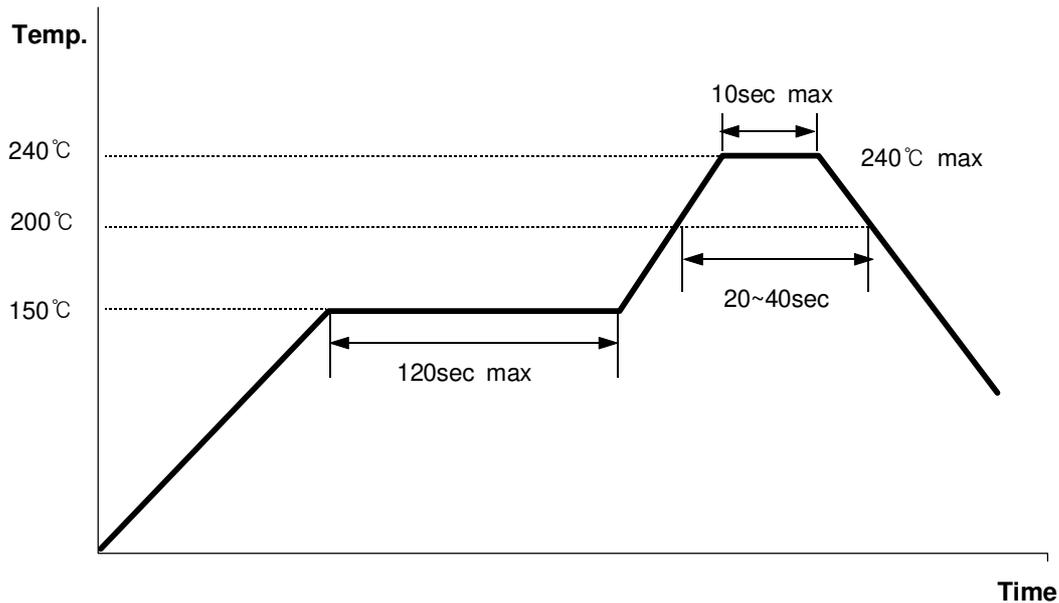
※ Recommended Land Pattern (3225 Type)



Do not design any patterns except GND in this area

## 6. Recommended Reflow Soldering Condition

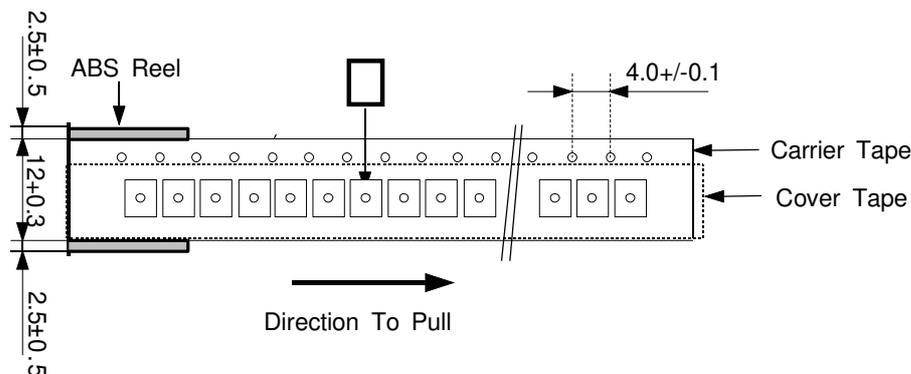
Pre heating temperature : 150°C (120sec max)  
 Heating temperature : 240°C max (10sec max)



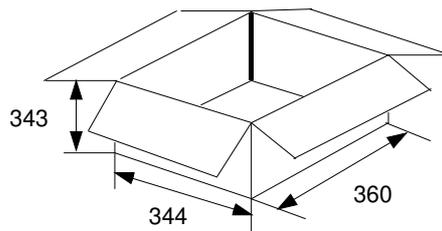
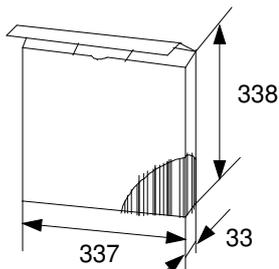
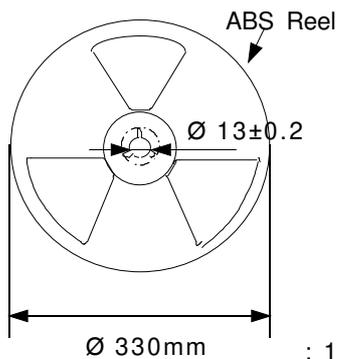
## 7. Caution to handle / storage

1. Storage
  - Keep products at the room temperature ( $20 \pm 15^\circ\text{C}$ ), normal humidity (below 60% RH), recommend to use products within 6 months after manufacturing, and in case of opening the product box, recommend to use products within 24 hours.
2. Static Electricity
  - While handling, prevent to occur static electricity, and while moving, move products under doing - no static electricity.
3. Reflow
  - Recommend to soldering according to recommended reflow condition.
4. General items
  - After thermal shock and reflow process, wait for 2 hours Min, and test.
  - Be cautious of over-pressure on the product, it can be happened to crack.
  - Be cautious of product pin connection.
  - Be cautious of invasion of outside material (like underfill), due to this, it can be effected to product.
  - In using hot-gun for repair, be cautious of over-heat, separation of product.

### 8. Component Packing (3225)



1. After inserting products into the carrier tape, and then it is rolled up to ABS reel under the shielding condition of carrier covering tape. Direction to pull is shown on the above drawings.
2. Both the end edge, 160mm of carrier tape will be shield without products.
3. Degree of detaching strength of carrier tape
  - (1) Angle : 165°~ 185°
  - (2) Speed : 300mm/min (5mm/Sec.)
  - (3) Force : 20g ~70g



● Inner Box Packaging Quantity : 1 reel / box (3,000 pcs / reel) (max)  
 ● Outer Box Packaging Quantity : 30,000 pcs / box (max)