

深圳市福浪电子有限公司
FRONTER ELECTRONICS CO., LTD

APPROVAL
SHEET



用户名称 CUSTOMER: Specelservice Co. Ltd. Russia
产品描述 DESCRIPTION: TCXO-SMD2520 26.000MHz
产品部品号 MANUFACTURER PART NO.: FTO26.000M3.3SM2-2.0D
用户部品号 CUSTOMER PART NO:
使用于机型 USED IN MODEL:

承 认 APPROVAL		
工程部 TECHNOLOGY DEPT.	品质部 QUALITY DEPT.	采购部 PURCHASING DEPT.



深圳市福浪电子有限公司

FRONTER ELECTRONICS CO., LTD

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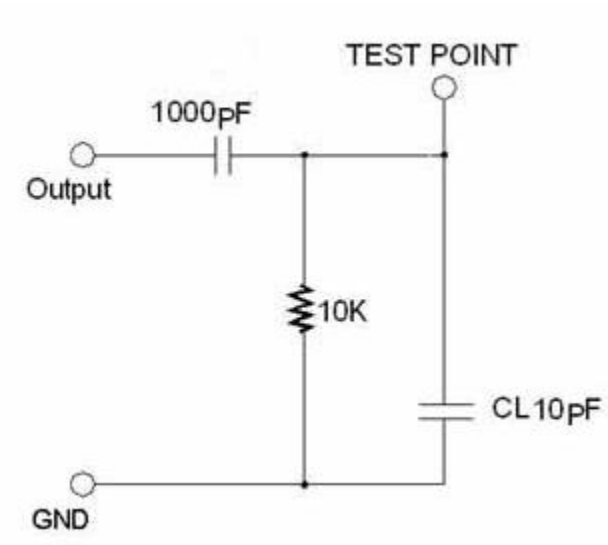
1. TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR SPECIFICATION

Parameter	Value	Condition
1.1 Nominal Frequency:	26.000MHz	
1.2 Holder type:	FTO221S (SMD2520)	
1.3 Supply voltage:	+1.7~+3.3V	
1.4 Input current:	1.5mA max	
1.5 Operating temperature range:	-40deg.C To +85deg.C	
1.6 Storage temperature range:	-40deg.C To +85deg.C	
1.7 Frequency tolerance:	±2.0ppm max	Frequency at 25℃,
1.8 Frequency stability:		
vs. Temperature (-30~+85℃) :	±2.0ppm max	Referenced to the frequency at 25℃.
vs. Supply voltage:	±0.2ppm max	+1.8V±5% , +2.4V±5% , +2.8V±5%, +3.3V±5%
vs. Load sensitivity:	±0.2ppm max	10Kohms//10pF ± 10%
vs. Aging:	±1.0ppm max	1 Year (25±2℃)
vs. Reflow soldering:	±1.0ppm max	2times
1.9 Output waveform:	Clipped sine wave	DC Coupled clipped sine wave
1.10 Output load:	10Kohms//10pF	
1.11 Output voltage level:	0.8Vp-p min	
1.12 Start time:	2.0ms max	more than 90% of final amplitude
1.13 Phase noise:		
@ 100Hz offset	-116 dBc/Hz	
@ 1KHz offset	-137 dBc/Hz	
@ 10KHz offset	-144 dBc/Hz	
1.14 Test circuit	Refer to fig.2	
1.15 Dimensions:	Refer to page.4	
1.16 Emboss carrier tape & reel:	Refer to page.6 and page.7	

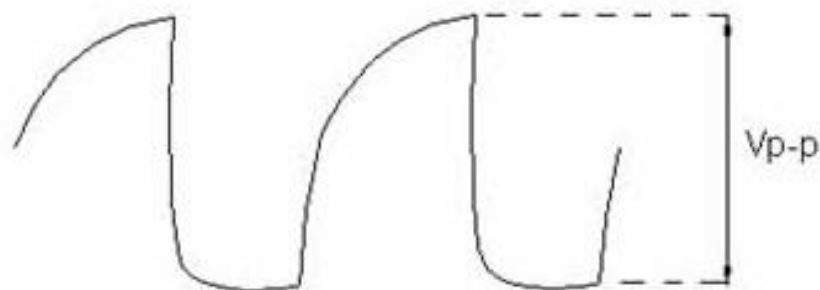
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2. Test circuit:



3. Output Waveform:

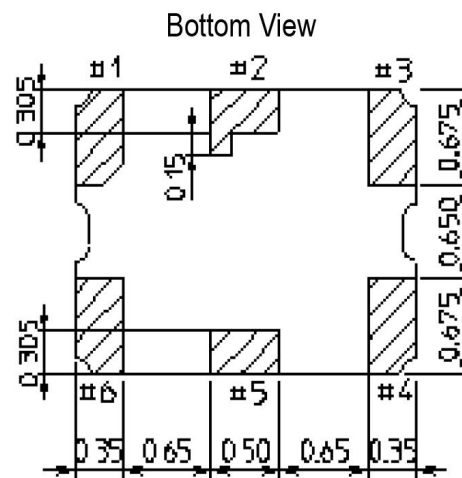
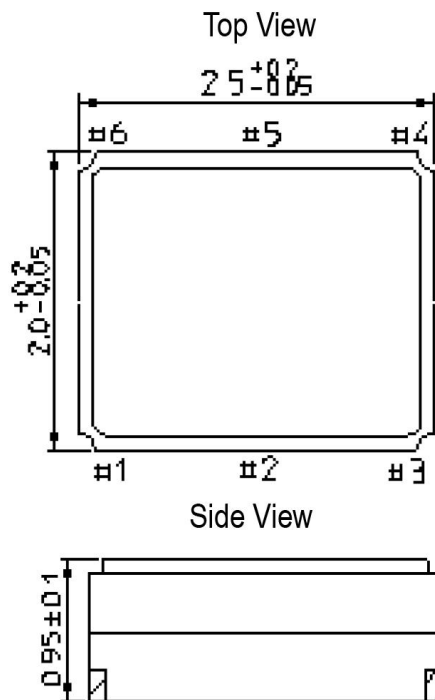


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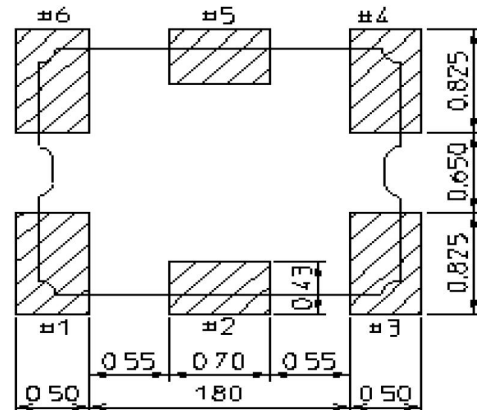
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4. FTO221S DIMENSIONS:

Unit: mm



Recommended Land Pattern



Pin Function

Pin	Function
#1	GND
#3	GND
#4	Output
#6	V _{CC}
#2, #5	N.C.

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5. Marking Specification:



Mark-1 (X-TAL Marking)		
Digit order	Symbol	Explanation
1	Y	Model code
2-3	A0	Frequency
4-5	**	Production Week
Mark-2 (TCXO Marking)		
Digit order	Symbol	Explanation
1-3	26A	Frequency
4	B	Serial Number(A~Z)
5-7	**	Production Year + Month + Day

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DESCRIPTION FTO221S 26.000MHz $\pm 2.0\text{ppm}$

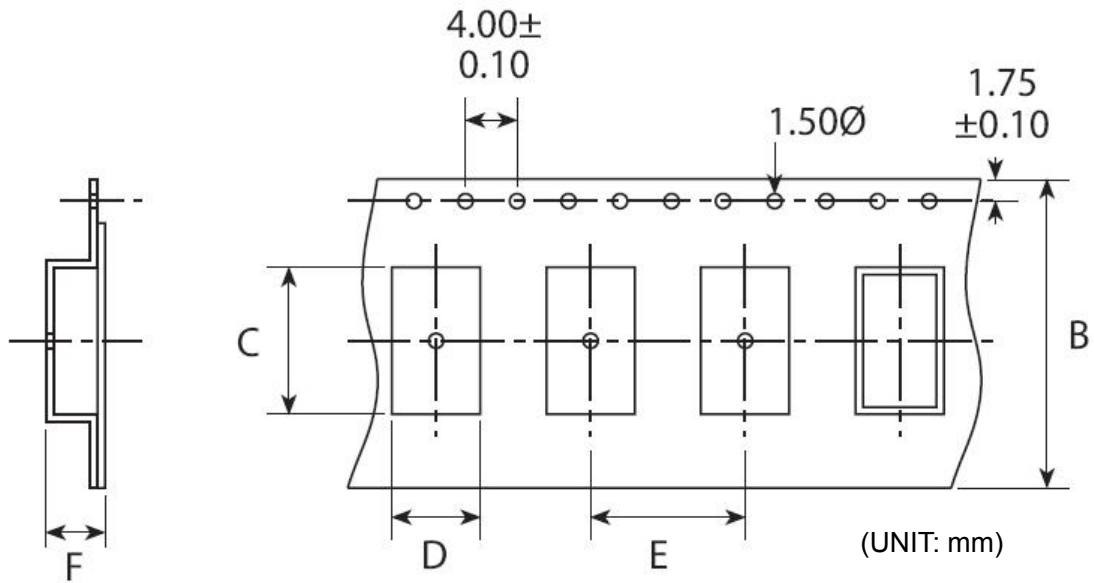
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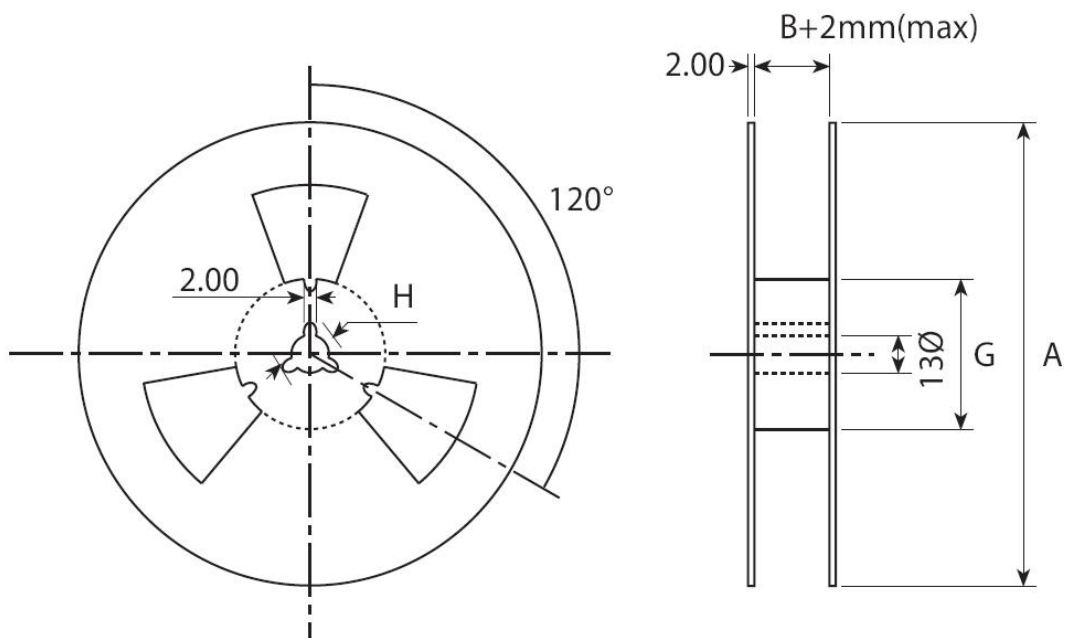
6. FTO221S EMBOSS CARRIER TAPE & REEL

a.) Dimensions of Carrier Tape



	A	B	C	D	E	F	G
OSC-SMD2520	180.0 ± 2.0	8.0 ± 0.2	2.70 ± 0.10	2.25 ± 0.10	4.0 ± 0.1	1.15 ± 0.1	60.5 ± 1.0

b.) Dimensions of Reel



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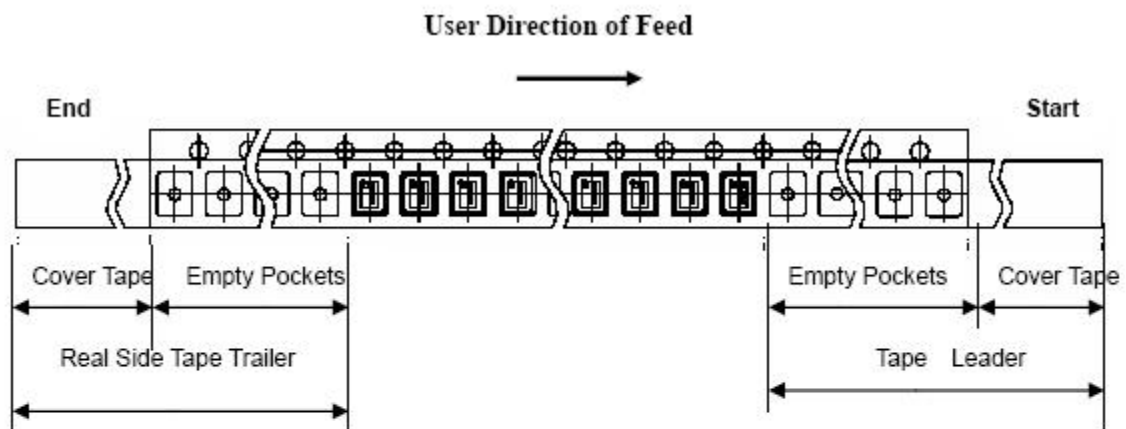
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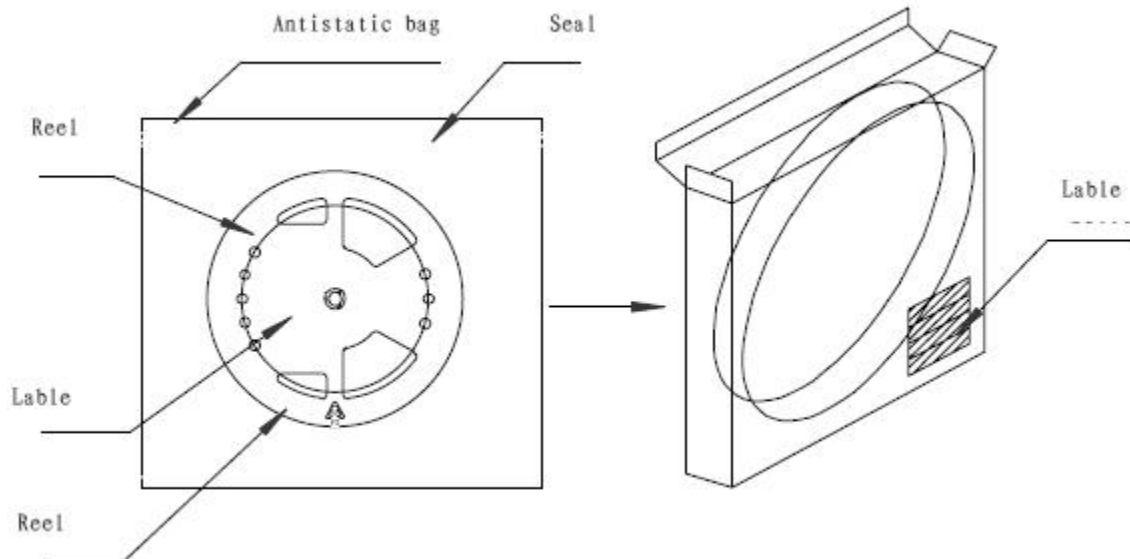
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c.) Packing



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

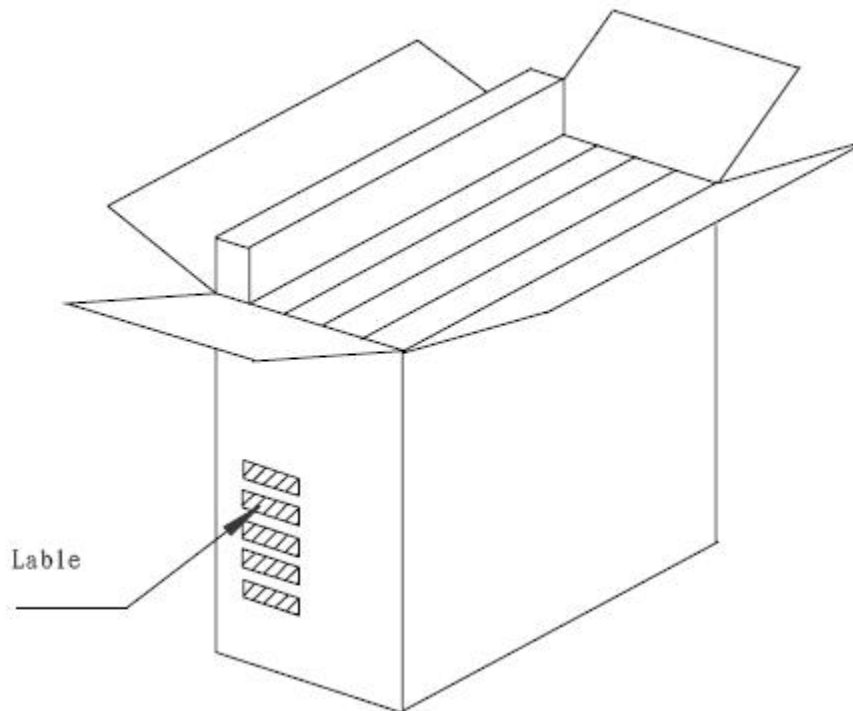
d.) Inner carton



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d.) Outer 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	
FRONTER ELECTRONICS CO.,LTD.	

Sticks label for every reel.

f.) Standard packing quantity

3,000PCS / REEL

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7. 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.

8. HANDLING:

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

- ELECTROSTATIC DISCHARGES

This device contains a 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

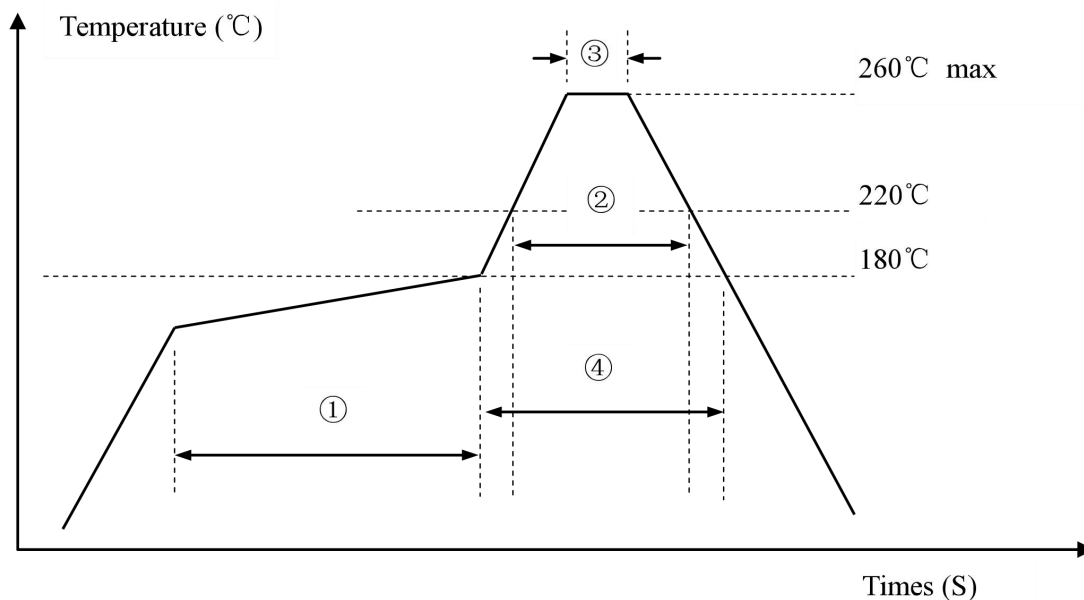
We recommend to store and use device under normal temperature and humidity for frequency stability. Condensation may cause this device damages.

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9. Environmental:

ITEM	Reference Std.	Test Condition
Vibration Test	MIL-STD-883 2007 Condition A JESD22-B103 Condition 1	10~2000Hz, 1.52mm, 20g, each axis for 4 hrs
Thermal Shock	MIL-STD-883 1010 Condition B JESD22-A104 Condition B	-55°C, 125°C; soak time is 10 mins, with total 200 cycles
Mechanical Shock	MIL-STD-883 2002 Condition B JESD22-B104 Condition B	1500G, half-sine, 0.5ms, each axis for 3 times.

10. REFLOW PROFILE:



Pb free reflow	①	Preheat	150~180°C	120sec. max
	②	Primary heat	220°C	60sec. max
	③	Peak	260°C	10sec. max.
	④	Reflow	180~180°C	60~90 sec.

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