TCXO SPECIFICATION

Customer：

Customer P/N：

TKD P/N：TC25D026000GECN033

Part Name：SMD TCXO 2520

Product Description：26.000000MHz

Issue Date：2022/6/23

CUSTOMER'S APPROVAL

(PLEASE RETURN A COPY WITH APPOVAL)

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Approved	Checked	Designer
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Rev.	Description of Revision History	Date	Designer	Checked By
A	New revision	2021/3/11	Zhan Chao	Zhong YuanHua
B	Drawing revisionand other optimizations	2022/5/24	Wang ShuangXi	Zhan Chao
C	Frequency Stability	2022/6/23	Wang ShuangXi	Zhan Chao

TCXO SPECIFICATION

1.Description : 2520 TCXO

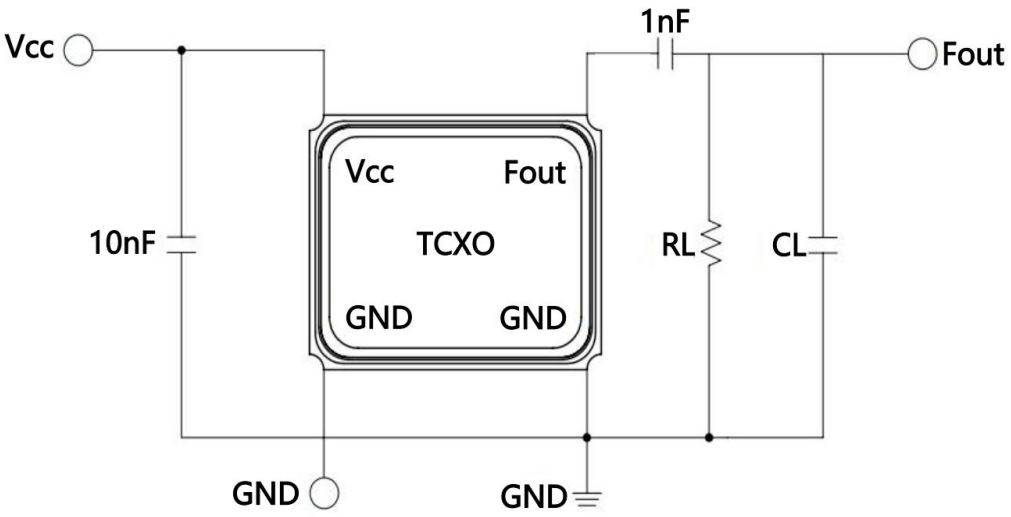
2.Nominal Frequency : 26.000000MHz

3.Electrical Specifications :

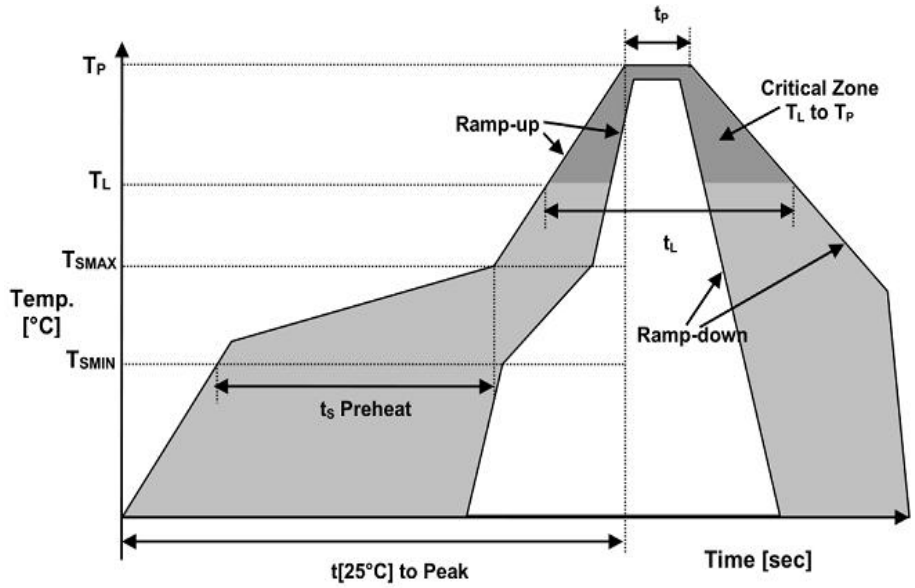
Item	Parameters		Condition	Electrical Specifications			
				Min	Typ	Max	Units
1	Nominal Frequency			26.000000			MHz
2	Frequency Stability	Vs.Temperature （Note1）	@-30℃～85℃	-0.5		0.5	ppm
			@-40℃～-30℃	-1.0		1.0	ppm
3		Vs.Load	±10%	-0.1		0.1	ppm
4		Vs.Supply Voltage	Standard Vcc±5%	-0.1		0.1	ppm
5	Operating Temperature Range			-40		85	℃
6	Frequency Tolerance（Note2）		After 2 times reflow	-2.0		2.0	ppm
7	Supply Voltage			1.70	2.80	3.30	Vcc
8	Current Consumption					1.5	mA
9	Output Level		（Note3）	0.8			V_{p-p}
10	Output Waveform			Clipped Sine wave			
11	Standard Output Load			10kΩ // 10pF			
12	Duty Cycle			40	50	60	%
13	Hysteresis			-0.6		0.6	ppm
14	Harmonics					-8.0	dBc
15	Aging		1st year	-1.0		1.0	ppm
			2nd year	-1.5		1.5	ppm
			5 years	-2.5		2.5	ppm
			10 years	-5.0		5.0	ppm
16	Phase Noise		@1 Hz offset			-50	dBc/Hz
			@10 Hz offset			-80	dBc/Hz
			@100 Hz offset			-106	dBc/Hz
			@1 kHz offset			-134	dBc/Hz
			@10 kHz offset			-144	dBc/Hz
			@100 kHz offset			-152	dBc/Hz
17	Frequency slope（Note4）		@-30℃~85℃	-0.1		0.1	ppm/℃
			@-40℃～-30℃	-0.35		0.35	ppm/℃
18	Start-up Time		To 90% of Vp-p			2.0	ms
19	Storage Temperature			-40		90	℃

Note1 Referenced to the midpoint between minimum and maximum frequency value
Note2 Refer to nominal frequency
Note3 DC-cut capacitor of output is not put in TCXO. Please add DC-cut capacitor (above 1nF) in output line
Note4 2℃/step，from low to high temperature

4.Test Circuit



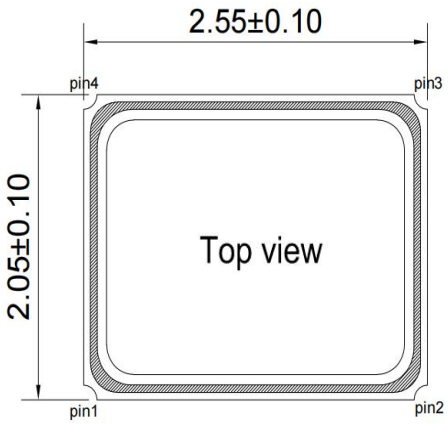
5.Recommended Reflow Profile

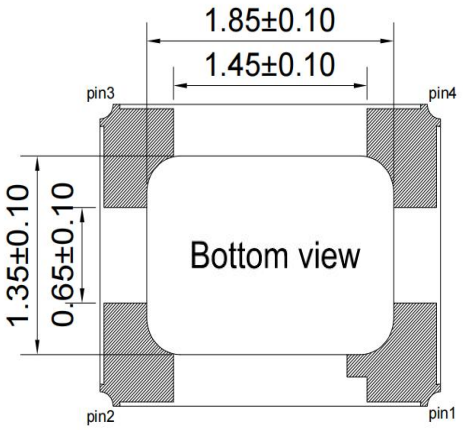


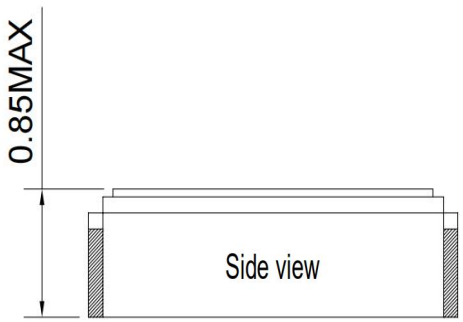
Reflow Profile		
Temperature MIN Preheat	T_{SMIN}	150℃
Temperature MAX Preheat	T_{SMAX}	200℃
Time（T_{SMIN}-T_{SMAX}）	t_S	60-180sec
Temperature	T_L	217℃
Peak Temperature	T_P	260℃
Ramp-up Rate	R_{UP}	3℃/sec max
Ramp-Down Rate	R_{DOWN}	6℃/sec max
Time within 5℃ of Peak Temperature	t_P	10sec
Time t（25℃） to Peak Temperature	t（25℃） to Peak	480sec
Time	t_L	60-150sec

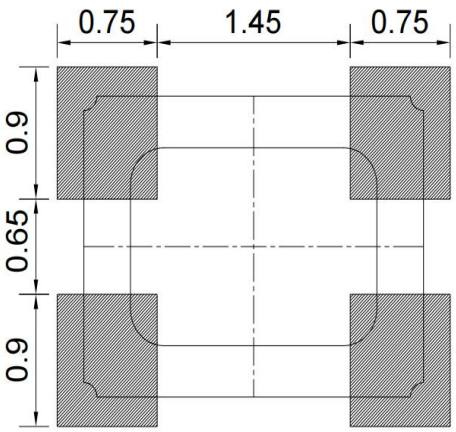
6.Product Dimensions

Units：mm









Recommended Land Pattern

Pin Connection

Name	Connection
Pin 1	GND
Pin 2	GND
Pin 3	Fout
Pin 4	Vcc

7.Product Identification (Marking)

T： TKD Logo

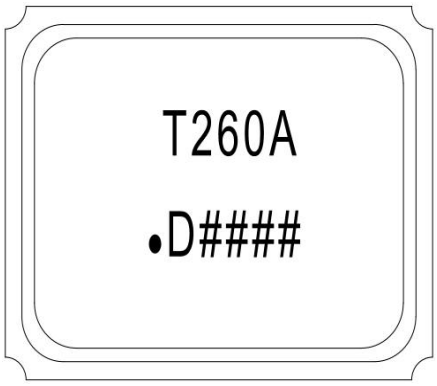
260： Frequency Code

A： Frequency Discrimination Code

●： Pin1 Index

D： Date Code

####： TCXO Lot Code

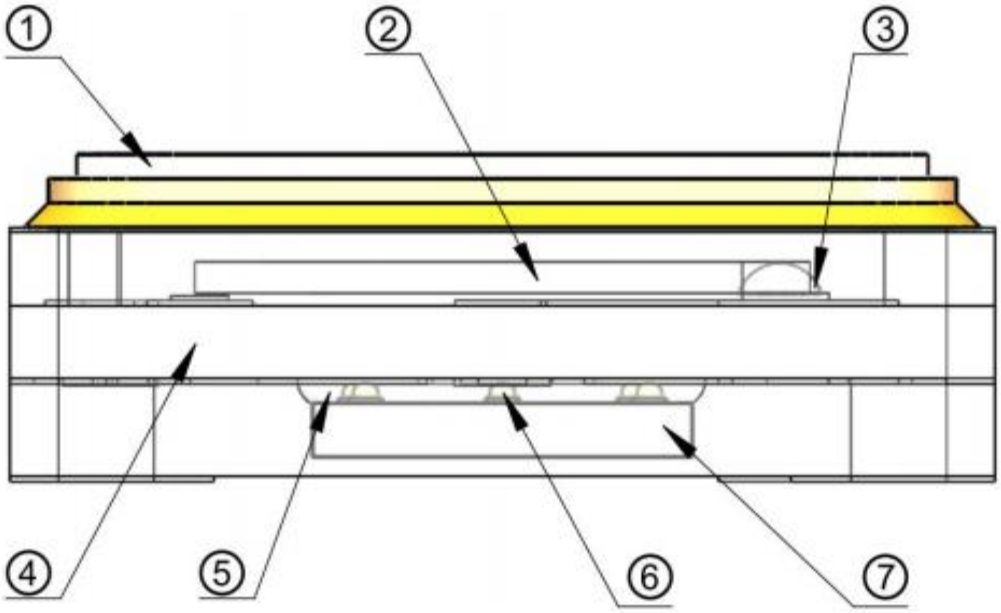


Date Code

Year		2019	2020	2021	2022
		2023	2024	2025	2026
		2027	2028	2029	2030
		2031	2032	2033	2034
Month	JAN	a	n	A	N
	FEB	b	p	B	P
	MAR	c	q	C	Q
	APR	d	r	D	R
	MAY	e	s	E	S
	JUN	f	t	F	T
	JUL	g	u	G	U
	AUG	h	v	H	V
	SEP	j	w	J	W
	OCT	k	x	K	X
	NOV	l	y	L	Y
	DEC	m	z	M	Z

※This date code will be cycled every four years.

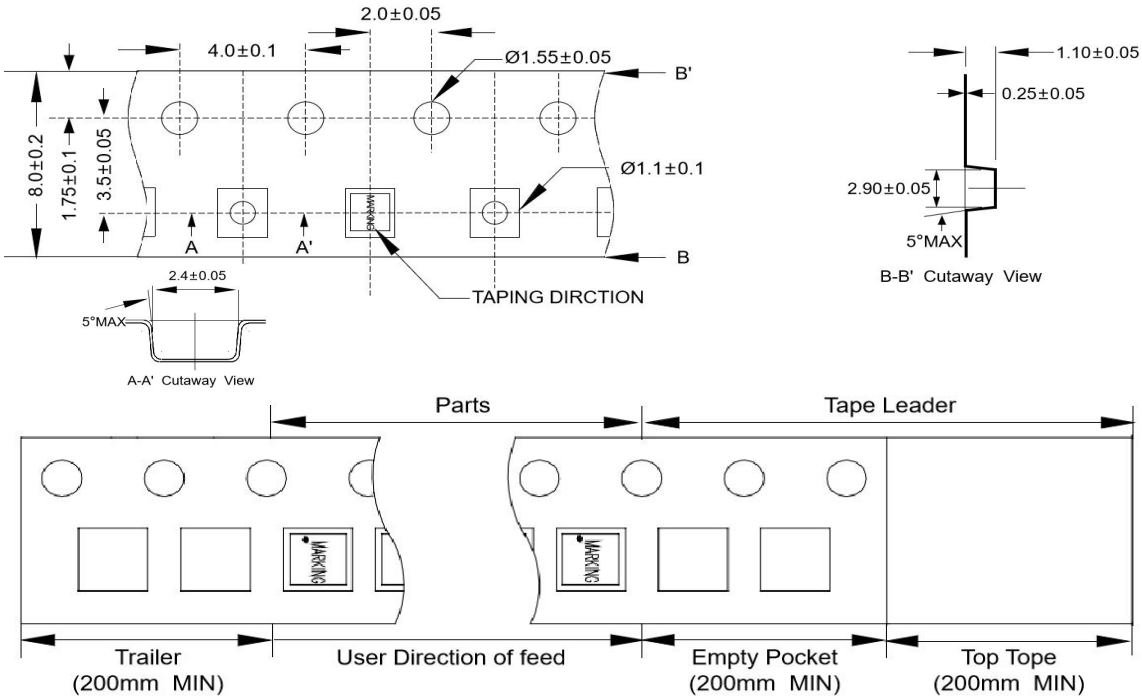
8.Structure Diagram



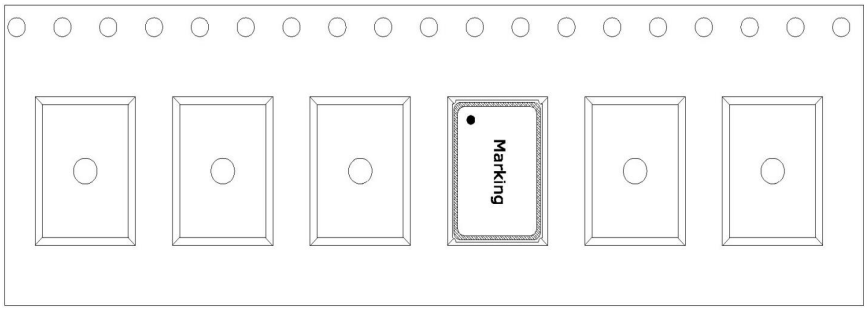
No.	Components	Materials
①	Lid	Fe-Ni-Co Alloy
②	Crystal Blank	SiO_2
③	Conductive Adhesive	Ag+Silicone resin
④	Base	Ceramic+Noble Metal
⑤	Underfill	Epoxy
⑥	Bump	Au
⑦	IC	Si

9.Package Information

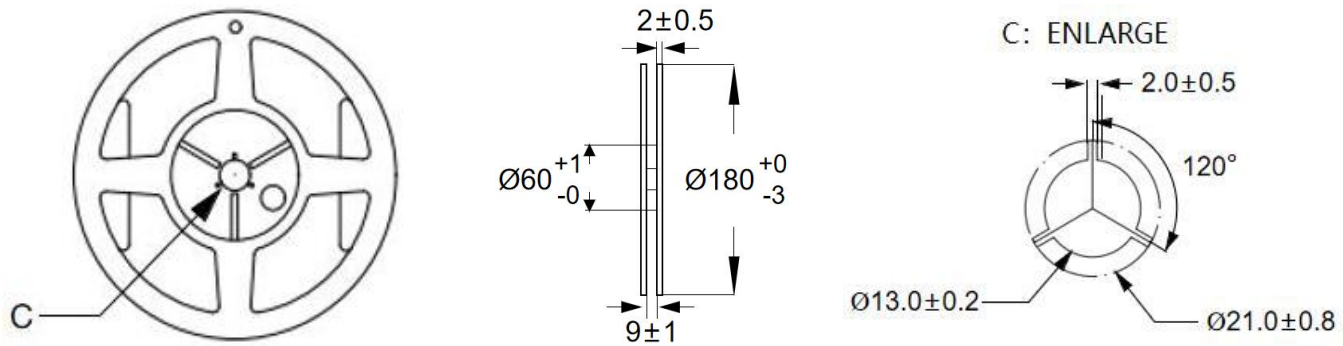
Tape（Carrier）Dimensions



The Direction of Packing



Reel Dimensions



Handling Instructions

1. Cautions for Handling

a) Prevention against electrostatic breakdown

Your full attention to static electricity is still requested.

b) Direction

Before mounting the crystal oscillator on board, Please confirm the direction to make sure the GND terminal and the terminal of power supply are not taken wrongly.

2. Prevention against Vibration and Shock

While the product is being transported or mounted onto board, if undue hock and vibration exceeding the specification is put on, there is risk hat the built-in crystal blank is broken.

When undue shock and vibration exceeding the specification is put on the product,please be sure to make confirmation of the product's characteristics.

3. Soldering

In order to assure the reliability of the crystal oscillator, please use the product under the recommended conditions.

4. Surface mounting

a)This product is surface-mounting device.

So, Please pay attention to the following things.

b)Extreme deformation of board may make pattern off, the electrode of terminals off and solder broken.Full attention is requested especially when splitting the board with the oscillator mounted where the camber of the board occurs.

c)In case that automatic mounter is used, please choose the type with small shock generation and make confirmation of the shock before use.

5. Cleaning

Because cleaning will cause change to all characteristics, cleaning is forbidden.

6. Store keeping (method and duration)

Long-time storage in the high/low temperature and high humidity leads to deterioration of solderability. So, please keep the product in the temperature of +5~+35 and humidity of 45~70%.

Moreover, please keep the product in the circumstance with measures against static electricity.

The storage life is 6 months before the pack is opened and please use it within 168 hours after the pack is opened.

(Please keep it with desiccator etc. when you exceed 168 hours after the bag is opened. Please use it after confirming the product solderability.)