

TCXO 2TG2500002	Product Specification	Produced date Revised date	2019.04.03
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Product Specification

TCXO

Model	2TG2500002
Size	2520
Frequency	25.000000MHz
Type	TCXO
Vcc	+1.7V ~ +3.3V
Vcont	N/A
AFC Range	N/A
Temp.	±0.5ppm max.@-30 ~ +85°C
Initial Frequency	±2.0ppm max.(After 2times reflow)

Issued Date	2019.04.03
Revised Date	
Prepared part	R&D
Drawn	Jin Zhe
Checked	
Approved	Yasuda

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1. Electrical Characteristics

Parameter		Value	Conditions
Frequency		25.000000MHz	
Supply Voltage(Vcc)		+1.8V±5%	
		+2.8V±5%	
		+3.0V±5%	
Output Load		10kohm//10pF±10%	
Control Voltage(Vcont)		N/A	
Voltage Control Range		N/A	
Output Level		0.8Vp-p min.	Clipped sine wave(DC-coupled)
Current		1.5mA max.	10koms//10pF±10%
Duty Cycle		50±10%	
Operating Temperature Range		-30~+85°C	
Storage Temperature Range		-40~+85°C	
Initial Frequency Tolerance		±2.0ppm max.	After 2times reflow
Frequency Stability	vs. Temperature(-30 ~ +85°C)	±0.5ppm max.	Referenced to +25°C frequency
	vs. Supply Voltage	±0.2ppm max.	Vcc±5%
	vs. Load	±0.2ppm max.	10koms//10pF±10% each
	vs. Aging	±1.0ppm max.	1 st Year
Frequency Slope	vs. Temperature(-20 ~ +65°C)	±0.1ppm/°C max.	Every +2°C
	vs. Temperature(-30 ~ +85°C)	±0.2ppm/°C max.	
Startup Time		2ms max.	more than 90% of final amplitude
Harmonics		-8dBc max.	
Phase Noise		-93dBc/Hz typ.	10Hz offset
		-118dBc/Hz typ.	100Hz offset
		-138dBc/Hz typ.	1KHz offset
		-150dBc/Hz typ.	10KHz offset
		-151dBc/Hz typ.	100KHz offset

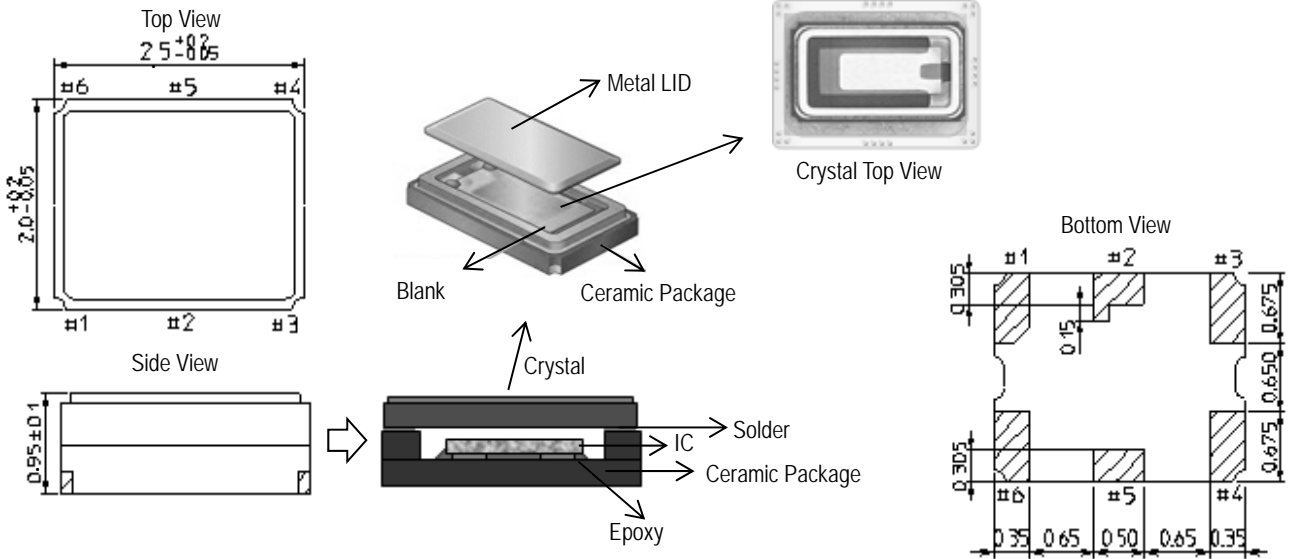
Notes:

- Please leave after reflow in 2h or more at room ambient

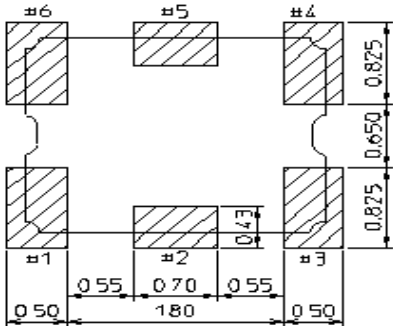
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2. Outline Specification

Unit: mm

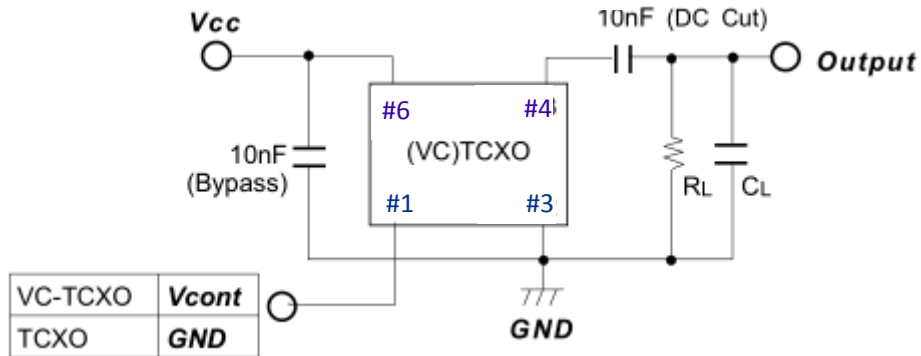


Recommended Land Pattern



Pad No.	Connection	
	TCXO	VC-TCXO
#1	GND	Vcont
#3	GND	GND
#4	Output	Output
#6	Vcc	Vcc
#2,#5	N.C.	N.C.

Measurement Circuit

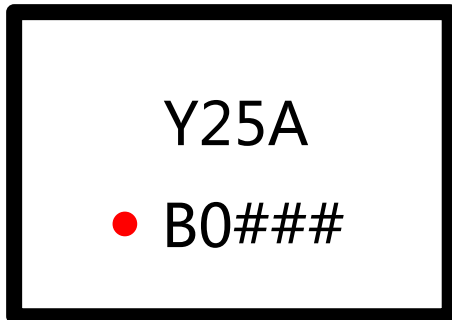


Notes:

- Please connect a bypass capacitor closely to Vcc Pad.
- Load capacitance (CL) includes probe and test board capacitance.

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3. Marking Specification



●Mark-1 : Y 25A
① ②~④

●Mark-2 : ● B0 ###
① ②~③ ④~⑥

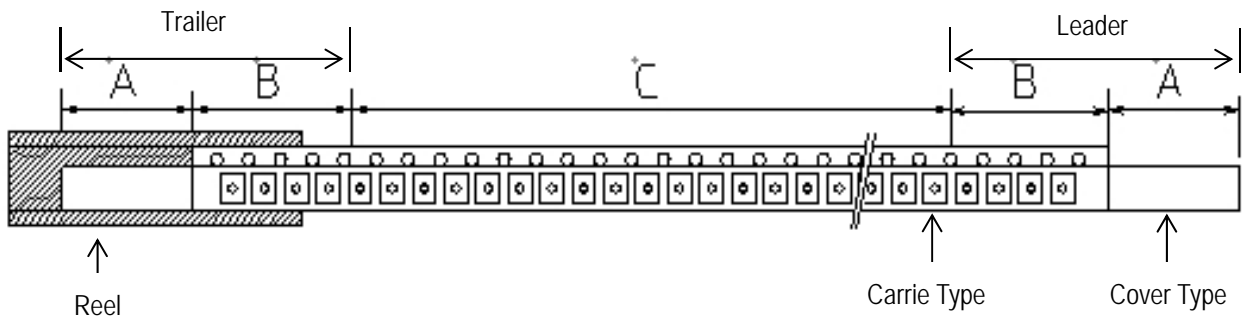
Mark-1		
Digit order	Symbol	Explanation
1	Y	YL(YouLian)
2~4	25A	Frequency
Mark-2		
Digit order	Symbol	Explanation
1	●	Index
2~3	B0	Serial Number(A0~Z9)
4~6	###	Production Year + Month + Day

Frequency:25A					
Symbol	Frequency [MHz]	Symbol	Frequency [MHz]	Symbol	Frequency [MHz]
16B	16.367667	13A	13.000000	40A	40.000000
16C	16.367000	19B	19.200000	38B	38.400000
16D	16.367600	26A	26.000000	25A	25.000000
16E	16.368000	32A	32.000000		
16F	16.369000	32B	32.768000		

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4. Packing Specifications

Basic Taping Specification

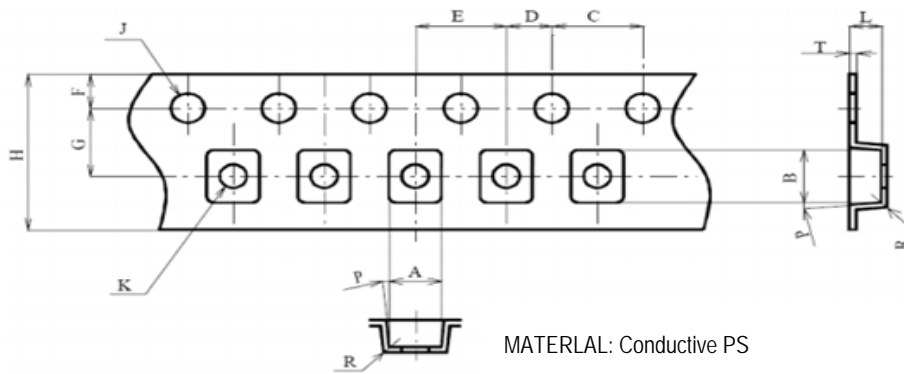


A	Cover tape only	200mm min.
B	Empty carrier tape	300mm min.
C	Component Section	

Notes:

- Insert TCXO product in carrier tape
- Attach cover tape using heat pressing method

Carrier Tape (8mm)



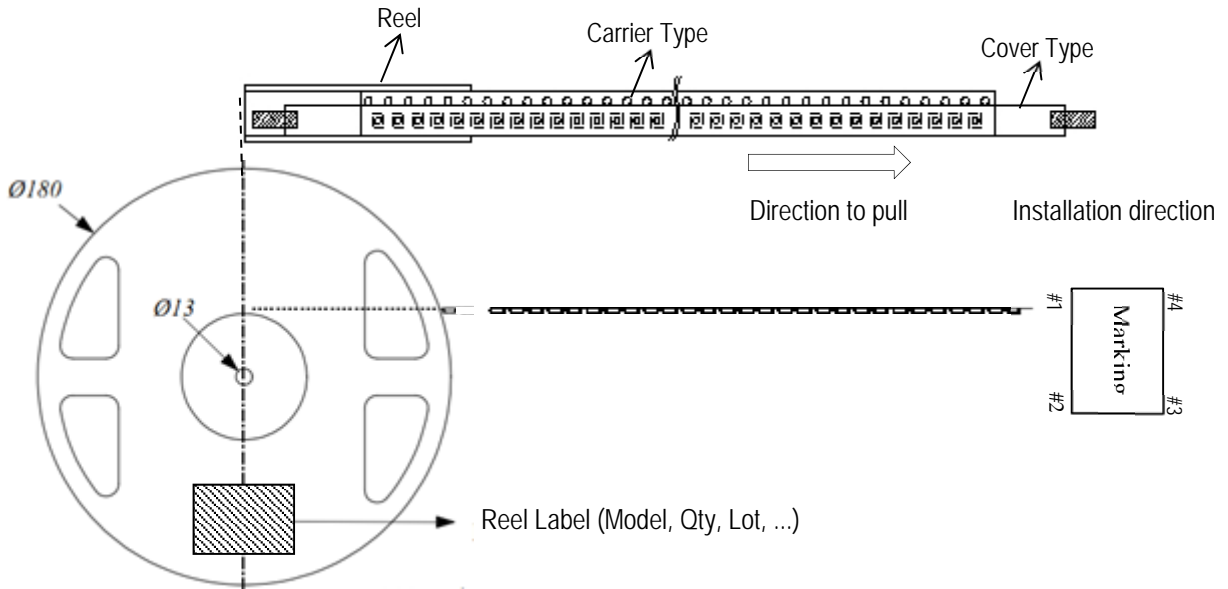
MATERIAL: Conductive PS

Unit: mm

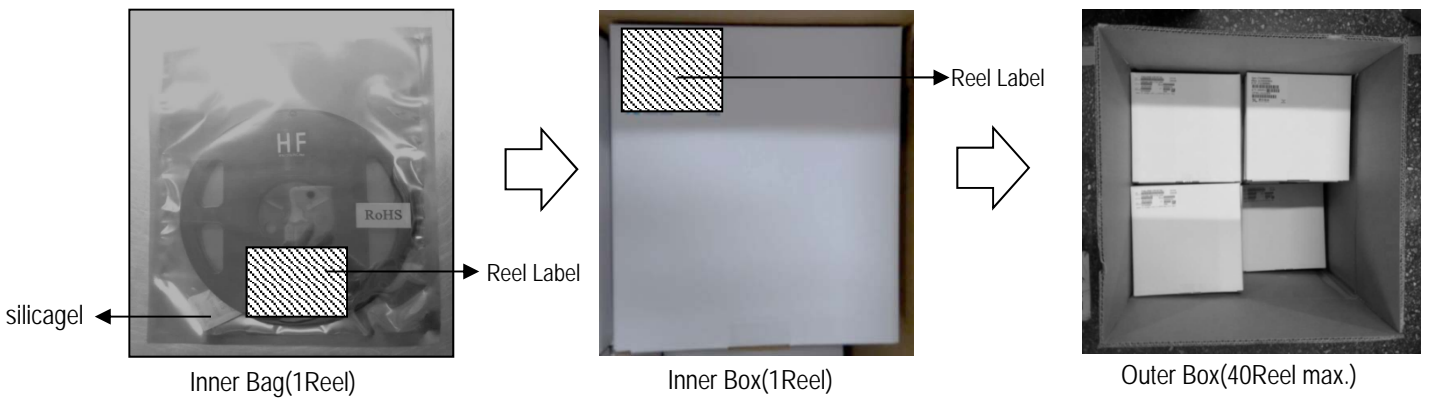
Symbol	A	B	C	D	E	F	G
Dimension	2.3±0.1	2.7±0.1	4.0±0.1	2.0±0.05	4.0±0.1	1.75±0.1	3.5±0.05
Symbol	H	J	K	L	P	T	R
Dimension	8.0±0.2	Φ1.5+0.1/-0	Φ1.2±0.1	1.4±0.1	5° max.	0.3±0.05	R0.3 max.

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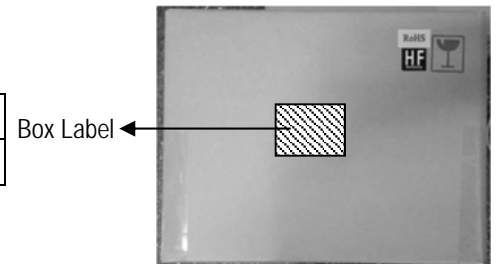
Reel Taping



Inner Bag / Inner Box / Outer Box



Reel	Inner Bag	Inner Box	Outer Box
3,000pcs	3,000pcs	3,000pcs	120,000pcs max.



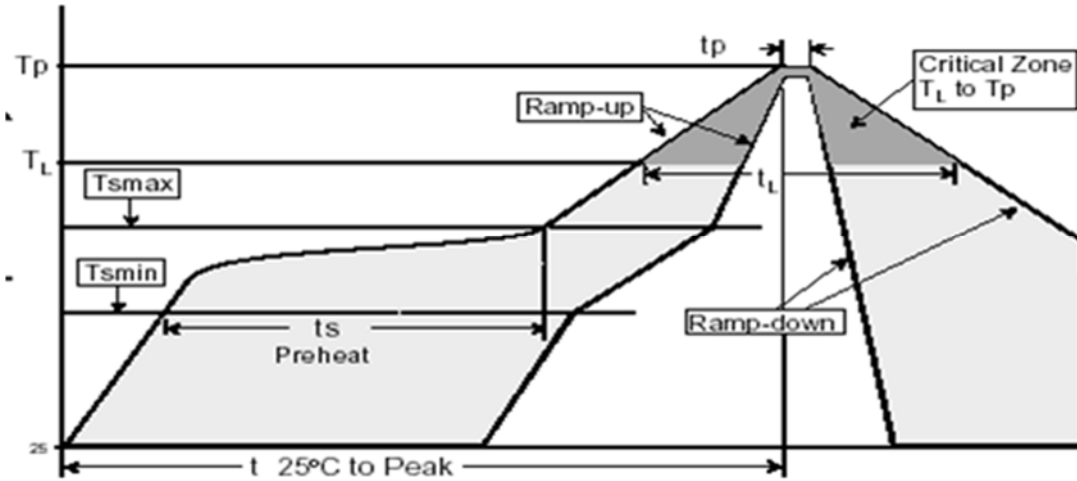
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5. Reliability Specifications

	Test Item	Test Condition	Criteria
1	Preconditioning	125°C 24Hr → 85°C,85%RH 168Hr → 3times reflow It shall be measured after 4Hr to 12Hr at room temperature & humidity	±1.0ppm
2	Drop	Preparation: Test pieces should be fixed on the dummy load with 120~150g weights Condition: Height 150cm onto Iron-plate Drop times: 3 times in 6 mutually perpendicular axes, 1 time random drop total 19 times Condition: Height 120cm onto Iron-plate Drop times: 2 times in 6 mutually perpendicular axes Total drop times: 31 times	±1.0ppm
3	High Temp. & Humidity Storage	85°C,85%RH 240Hr It shall be measured after 4Hr to 12Hr at room temperature & humidity	±1.0ppm
4	Thermal shock	-40°C/30min ↔ 85°C/30min, 100cycles It shall be measured after 4Hr to 12Hr at room temperature & humidity	±1.0ppm
5	Vibration	20~2000Hz, PSD 0.053g ² /Hz, X.Y.Z direction, 15min/direction	±1.0ppm
6	High Temp. Storage	125°C, 240Hr	±1.0ppm
7	Low Temp. Storage	-55°C, 240Hr	±1.0ppm
8	PCT(Pressure Cooker Test)	121°C, 100%RH, 96Hr It shall be measured after 2Hr to 48Hr at room temperature & humidity	±1.0ppm
9	Solderability	Precondition: 105°C, 100%RH, 4Hr Condition: 235±5°C for 3±0.5sec, Solder Pot	90%
10	Solder Heat Resistance	260±5°C, 10±1sec, Solder Pot It shall be measured after 2Hr to 4Hr at room temperature & humidity	±1.0ppm
11	ESD(Electrostatic Discharge) Human Body Model	C = 100pF, V = ±1KV, R = 1.5kohm, 3times	±1.0ppm

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6. Recommended Reflow Profile



1	Preheat -Temp. Min (T _{sm}) -Temp. Max (T _{sm}) -Time (t _s)	150°C 200°C 60-180sec
2	Primary Heat -Temp. (T _L) -Time (t _L)	220°C 60-150sec
3	Peak -Temp. (T _p) -Time (t _p)	260°C 10sec max.