

承 认 书

SPECIFICATION FOR APPROVAL

客户名称: Customer _____

货 名: Description SMD 3225 TCXO 石英晶体振荡器

客户料号: Part No _____

物料编号: Code No W3232000100c33Ce

频 率: Frequency 32.000MHz

日 期: Date 2020 年 11 月 20 日

备 注: RoHS compliance with Directive (EU) 2015/863

制作(Prepare by)	检查(Check by)	批准 (Approve by)
江丹娜	甘瑛	张刚

客户批准 Approve by customer	
批准日期 Approval date	

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■ ELECTRICAL SPECIFICATIONS

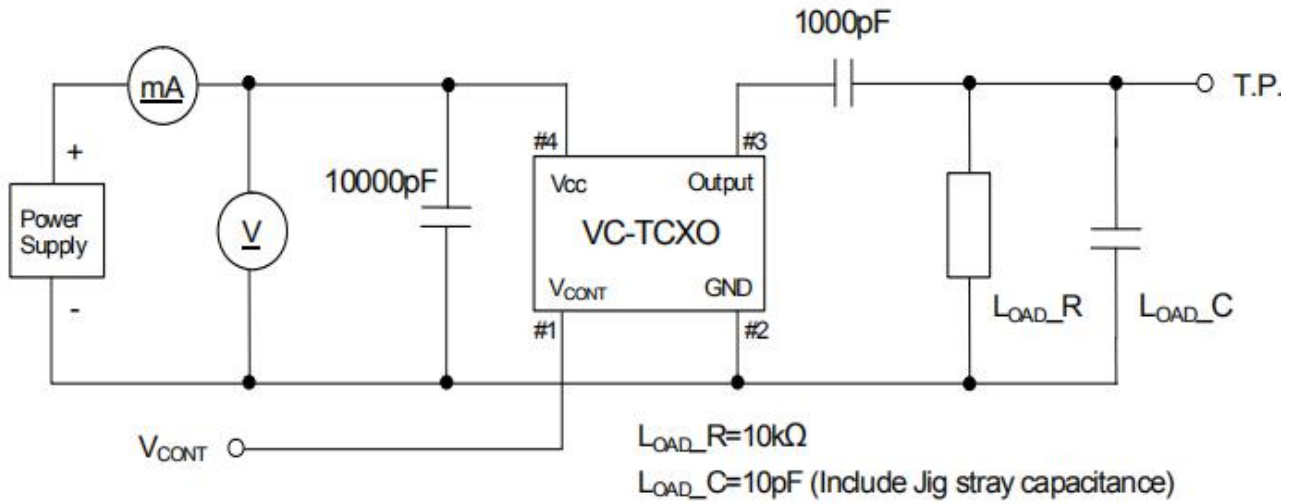
Item	Parameters		Condition	Electrical Specifications				Note
				MIN	TYP	MAX	UNITS	
1	Nominal Frequency			32.000			MHz	
2	Operating Temperature Range			-40		85	°C	
3	Supply Voltage			3.135	3.30	3.465	V	
4	Nominal Frequency Tolerance		Frequency at 25 °C, 2 hour after reflow			±1.5	ppm	1
5	Output Load		Resistance		10		kΩ	
6			Capacitance	9	10	11	pF	
7	Frequency Stability	vs. Temperature	Temp: -40 ~ +85°C			±2.0	ppm	2
8		vs. Load	Load: 10 kΩ // 10 pF ±10%			±0.2	ppm	
9		vs. Supply Voltage	Vcc: 3.3V ±5% V			±0.2	ppm	
10	Storage Temperature			-40		85	°C	
11	Current Drain					1.5	mA	
12	Output voltage level			0.8			Vp-p	3
13	Duty Cycle			40	50	60	%	
14	Harmonics					-5	dBc	
15	Star Up time		@90% Of Final Vout Level			2	ms	
16	Aging					±1.0	ppm/year	
17	Phase Noise		10 Hz offset			-85	dBc/Hz	
18			100 Hz offset			-110	dBc/Hz	
19			1 kHz offset			-133	dBc/Hz	
20			10 kHz offset			-148	dBc/Hz	
21			100 kHz offset			-150	dBc/Hz	

Note 1 Refer to nominal frequency;

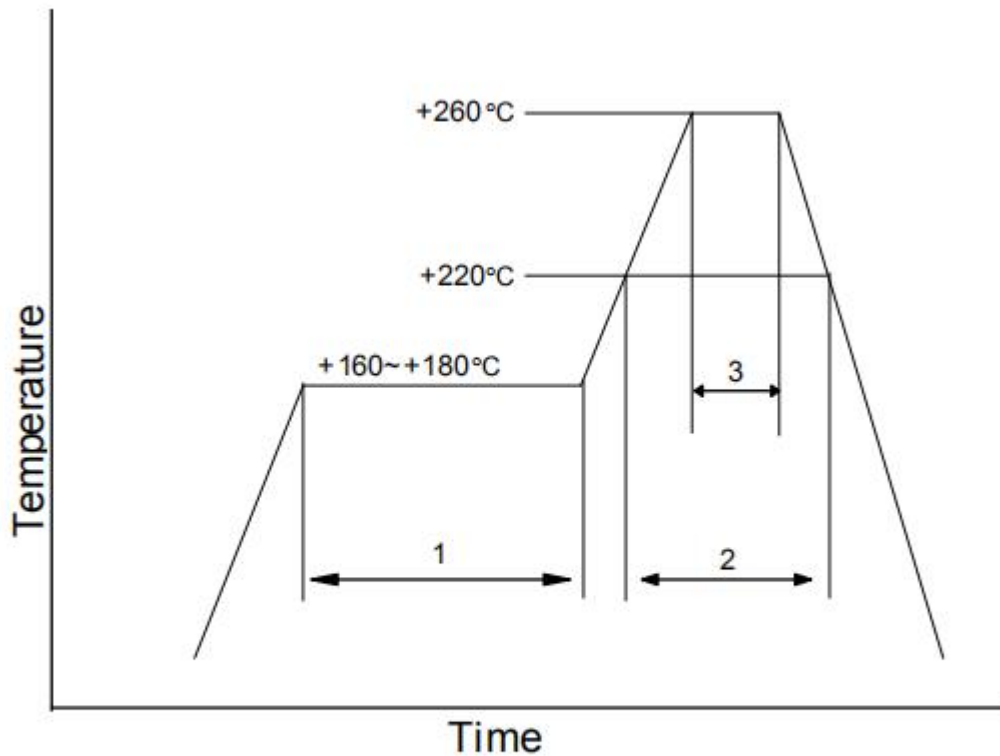
Note 2 Refer to frequency at 25±2°C;

Note 3 Clipped sine wave (DC coupling), Decoupling capacitor (1000 pF) is required in external circuit

■ TESTING CIRCUIT



■ SUGGESTED REFLOW PROFILE

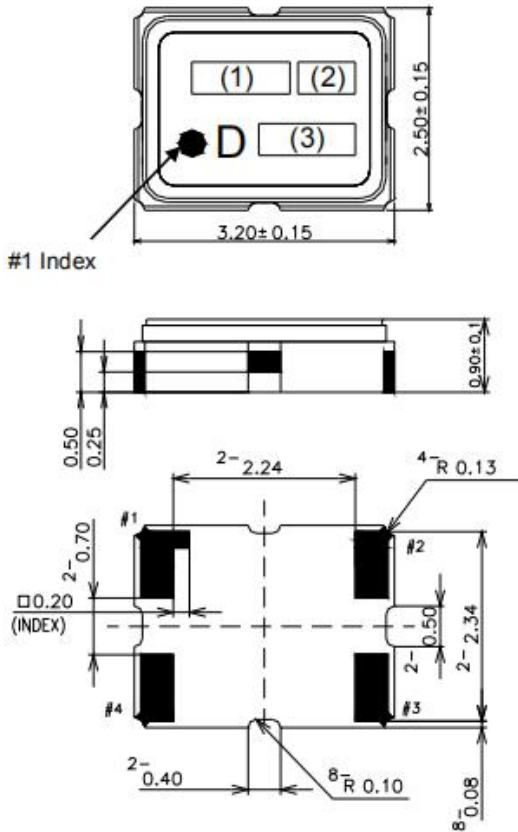


1	Preheat	+160~+180°C	120s
2	Primary Heat	+220°C	60s
3	Peak	+260°C	10s max.

PRODUCT DIMENSIONS

▶ DIMENSIONS

(Unit:mm)



Pin Connections

Pin No.	Connection
#1	V _{CONT}
#2	GND
#3	Output
#4	V _{CC}

Marking

(1) Frequency	18.43 (MHz, 4 digits)
(2) Model code	AN
(3) Date code	Year (1digit) +Week (2digits) e.g.2015/01/01→ 501

unit: mm

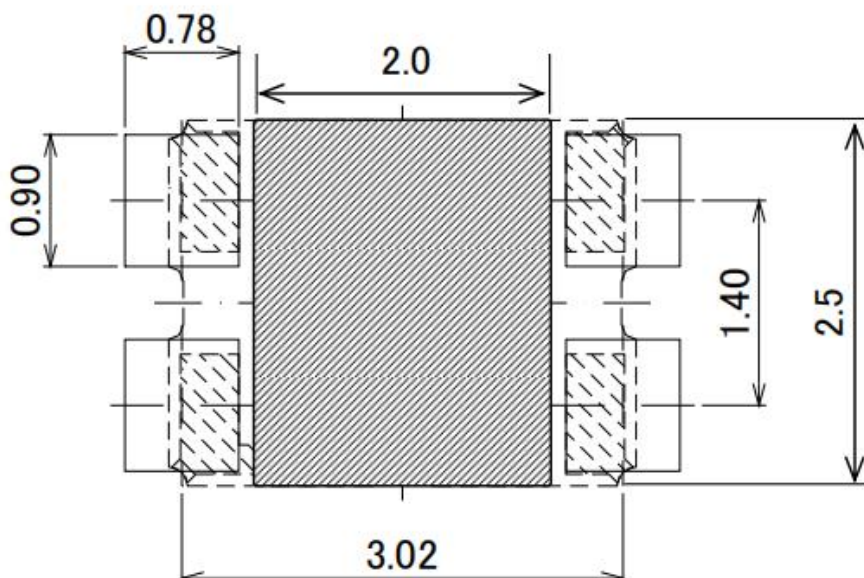
Dimensional Tolerance: ±0.15

(Unless otherwise noted)

LAND PATTERN LAYOUT /METAL MASK HOLE

Please do not place any conductor pattern in the area of the TCXO bottom as shown in FIG.

When placing conductor patterns in the substrate inner layer, please keep away it from the bottom of the TCXO at least 0.5mm or more.

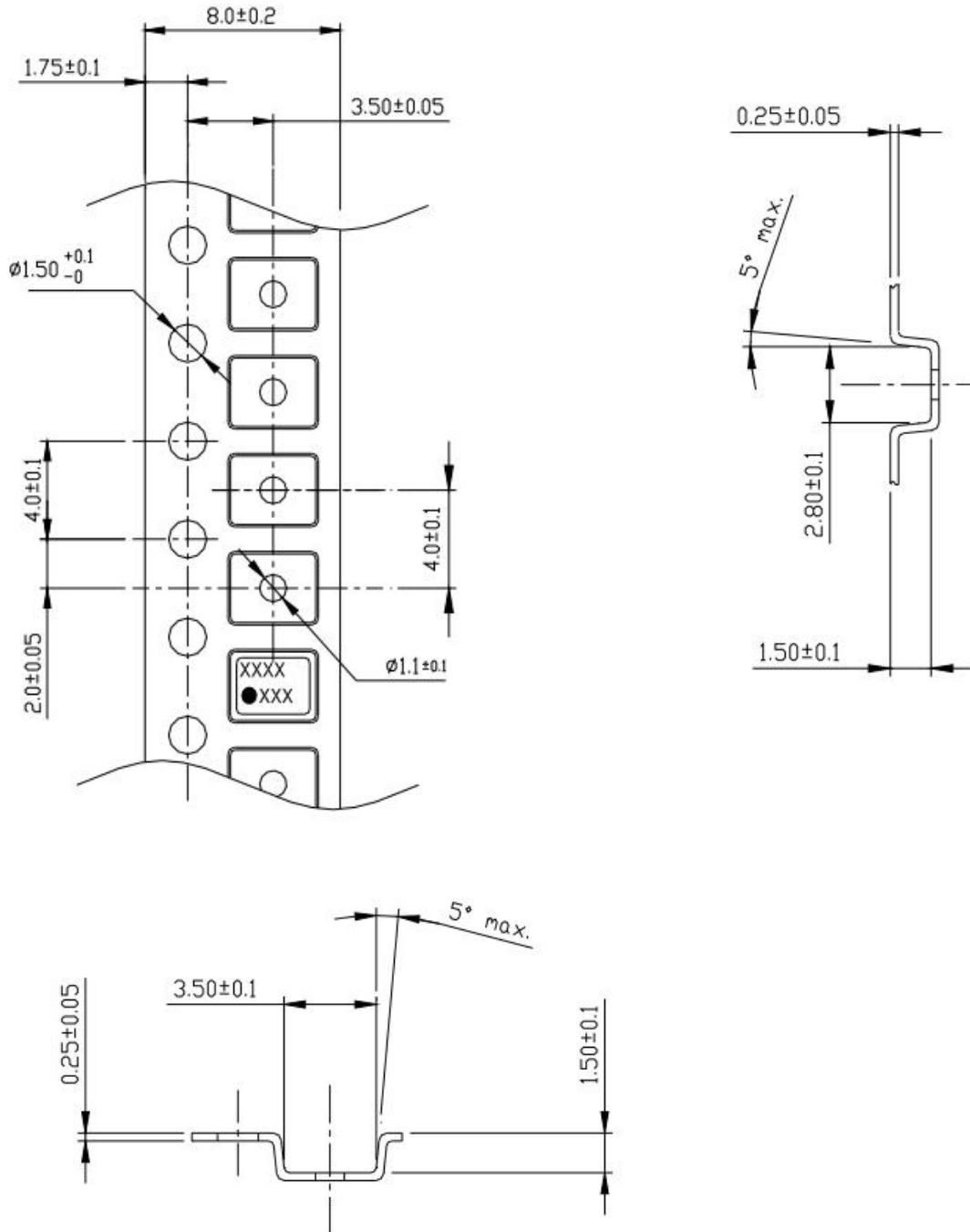


unit: mm

Dimensional Tolerance: ±0.15mm

PACKAGE INFORMATION

➤ Emboss tape format and dimensions(unit:mm)



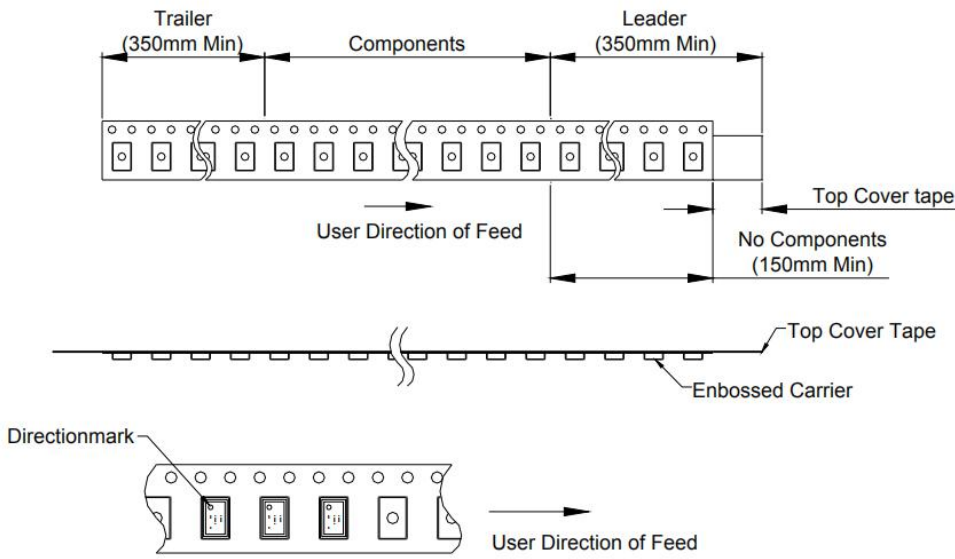
1. Clearance of an embossing tape, and a product unit: mm

Direction	Pocket size	TCXO size	Clearance
L	3.5±0.1	3.2±0.15	0.3±0.25
W	2.8±0.1	2.5±0.15	0.3±0.25
H	1.5±0.1	1.0 max.	0.5 min.

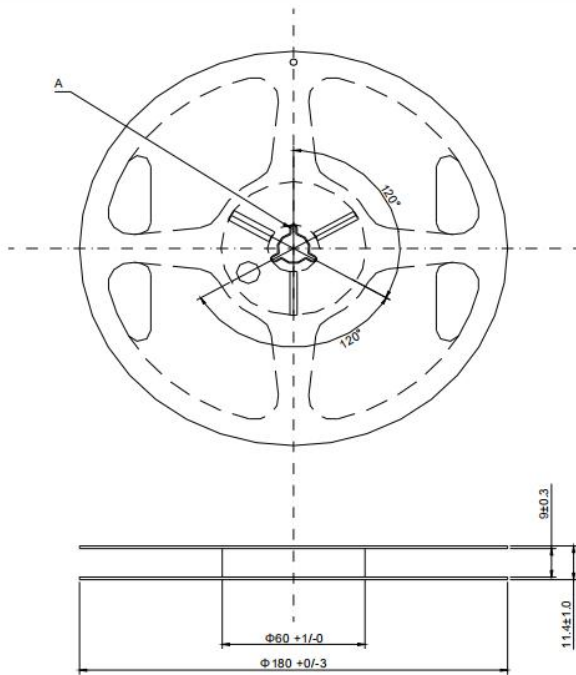
2. Quality : Polystyrene(Conductivity)

3. Tensile strength of an embossing tape : more than 14N

► Taping Specification

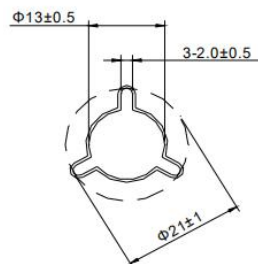


► Reel Specification(unit:mm)



Material:Polystyrene (Conductivity)
unit:mm

Section A



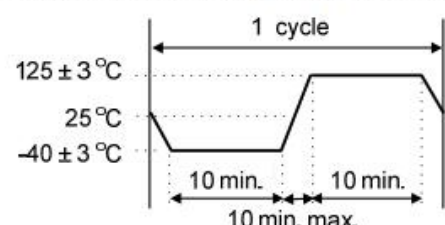
■ RELIABILITY SPECIFICATIONS

► Mechanical Endurance

No.	Test Item	Test Methods	Criteria
1.1	Drop Test	Height : 100 cm height Direction : X,Y,Z 6 directions Test cycles : 3 cycles Fall freely on to concrete floor Mounting on test fixture (total weight=100 g)	+/- 2.0 ppm
1.2	Mechanical Shock	Acceleration : 1000 g Duration : 0.5 ms Test cycles : 3 times for all 3 directions	+/- 2.0 ppm
1.3	Vibration	Frequency range : 10 ~ 2000 Hz Amplitude : 1.52 mm (10 ~ 80 Hz) Acceleration : 20 g (80 ~ 2000 Hz) Sweep speed : 20 minutes/cycle Direction : X,Y,Z 3 directions Duration : 4 hours/each direction	+/- 2.0 ppm
1.4	Gross Leak	Standard sample for automatic gross leak detector. Test Pressure : 2 kg/cm ²	< 1.5 × 10 ⁻⁵ Pa m ³ / sec
1.5	Fine Leak	Helium bombing 4.5 kgf/cm ² for 2 hours	< 1.0 × 10 ⁻⁹ Pa m ³ / sec
1.6	Solderability	Preheate temperature : 125°C ± 5°C Preheate time : 120 sec Soldering temperature : 245°C ± 5 °C Duration : 5 ± 1 sec Method : Solder bath method	90% Coated

[Note] Criteria mean the maximum frequency change after reliability test, frequency measured at 25°C.

► Environmental Endurance

No.	Test Item	Test Methods	Criteria
2.1	High Temp. Storage	Temperature : +125°C ± 3°C Duration : 168 hours	+/- 2.0 ppm
2.2	Low Temp. Storage	Temperature : -40°C ± 3°C Duration : 500 hours	+/- 2.0 ppm
2.3	Thermal Shock (Air to Air)	Total 100 cycles of the following temperature cycle : 	+/- 2.0 ppm
2.4	High Temp & Humidity	Temperature : 85°C ± 3°C Humidity: RH 85% Duration : 168 hours	+/- 2.0 ppm
2.5	Aging	Temperature : 85°C ± 3°C Duration : 500 hours Voltage input by specification	+/- 2.0 ppm