

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD TCXO 3.2 * 2.5

NOMINAL FREQ. : 26 MHz

TXC P/N : 7Q26001001

REVISION : S1

CUSTOMER P/N : _____

PM / SALES : _____

DATE : _____

CUSTOMER SIGNATURE & DATE : _____

- (1) TXC requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.
- (2) Orders received and accepted by TXC after return of signed copy of specification will be produced per these specifications.
- (3) Any changes to these specifications must be agreed upon by both parties and new revision of the Product Specification Sheet will be issued.
- (4) Any issuance of purchase order prior to consigning back the Approval page of "Specification Sheets" from customers will be regarded as the agreement on the contents of these specifications.

Attachment(s):

- ☒ 1. Product Specification Sheet
- ☐ 2. Testing Report(Electrical & Temperature)
- ☐ 3. Reliability Report

RoHS Compliant

PRODUCT SPECIFICATION SHEET

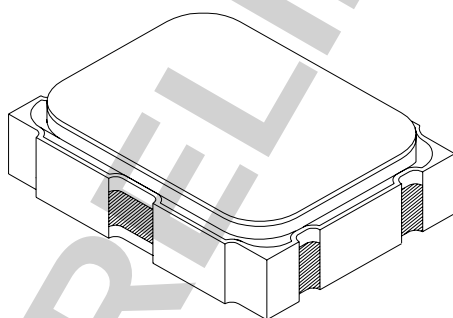
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PE/RD	QA	MFG
<i>Kenneth Kao</i>		
2009/4/1		

NOTE:

- (1) Lead Free Products are " Directive 2002/95/EC of The European Parliament of 27 January 2003 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment" Compliant (Attachment: SGS Test Report).
- (2) Revision "Sx" is for engineering samples only. PE/RD's approval required.
- (3) Revision "Ax" is production ready. PE, QA and MFG's approval required.

RoHS Compliant

P/N : 7Q26001001

REVISION : S1

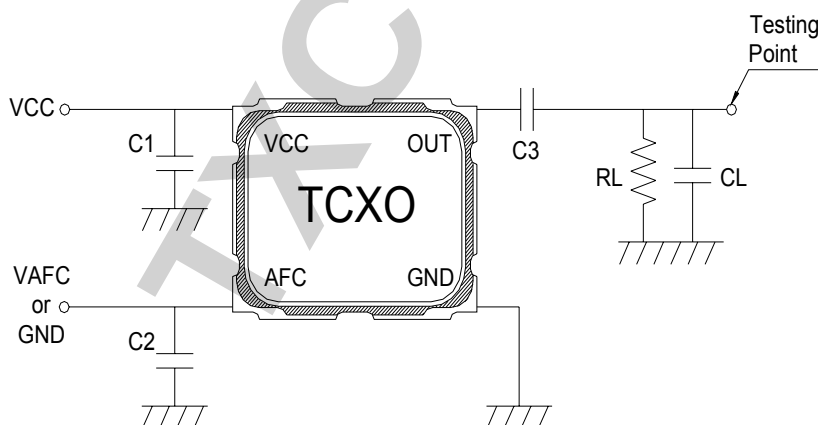
[illegible]

■ ELECTRICAL SPECIFICATIONS

Item	Parameters		Condition	Electrical Specifications			
				MIN	TYP	MAX	UNITS
1	Nominal Frequency			26.000000			MHz
2	Operating Temperature Range			-30		85	°C
3	Supply Voltage			2.70	2.80	2.90	V
4	Current Drain		With standard output load.			1.7	mA
5	Output Level		Note1	0.8			V
6	Output Type			Clipped Sinewave			
7	Standard Output Load			10 K Ω // 10 pF			
8	Frequency Tolerance After Reflow		25 $\pm$ 2 °C			$\pm$ 1.5	ppm
9	Frequency Stability	vs. Temperature	Ref : 25°C $\pm$ 2°C			$\pm$ 2.0	ppm
10		vs. Load	$\pm$ 5%			$\pm$ 0.3	ppm
11		vs. Supply Voltage	Standard Vcc $\pm$ 0.1 V			$\pm$ 0.3	ppm
12	Auto-Frequency-Control(AFC) Range		Vcont = 2.5 V	+5		+12	ppm
13	(Ref : Vcon=1.5 V)		Vcont = 0.5 V	-12		-5	ppm
14	Storage Temperature			-40		85	°C
15	Start-up Time	vs. Frequency	Within $\pm$ 2.0 ppm			3.0	mS
16		vs. Output Level	To 90% of Vp-p			3.0	mS
17	Duty Cycle			40	50	60	%
18	Aging over 1st Year					$\pm$ 1.0	ppm
19	Harmonics					-5	dBc
20	Phase Noise	@ 100 Hz offset			-110		dBc/Hz
21		@ 1 kHz offset			-130		dBc/Hz

Note1 Decoupling capacitor is required in external circuit.

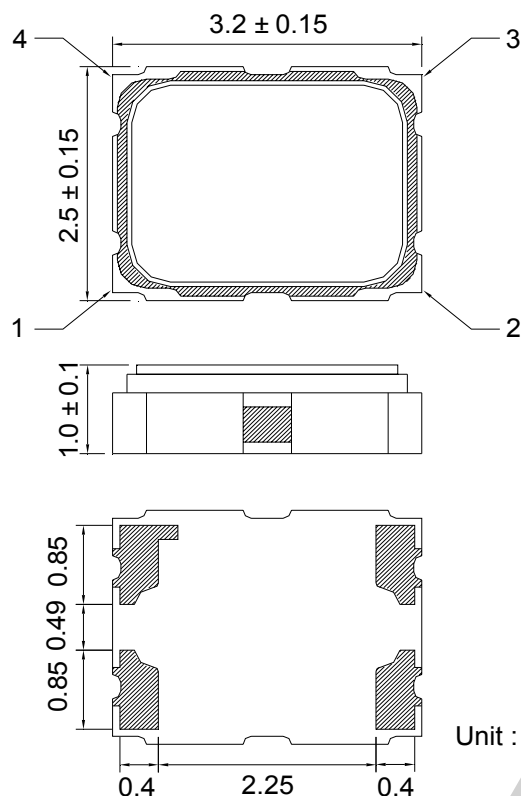
■ TESTING CIRCUIT



External Components:

Name	Function
C1	AC Noise Bypass for VCC
C2	AC Noise Bypass for AFC
C3	DC Component Block for Output
RL	Load Resistance
CL	Load Capacitance

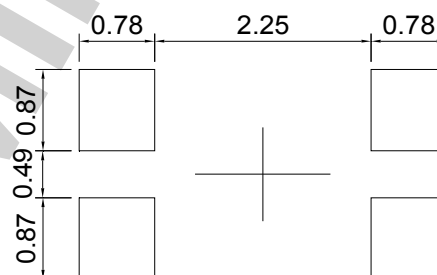
■ DIMENSIONS



Pin Function:

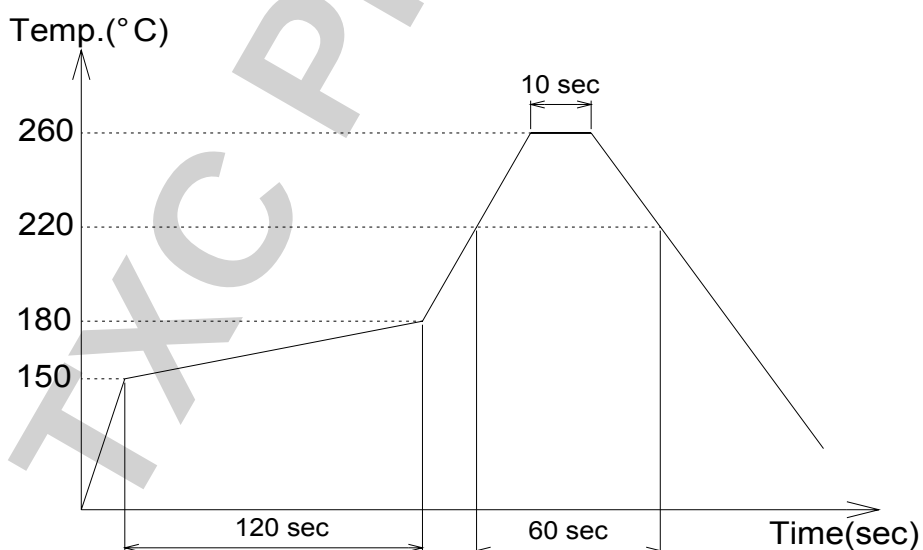
1. AFC or GND
2. GND
3. OUTPUT
4. VCC

Land Pattern:



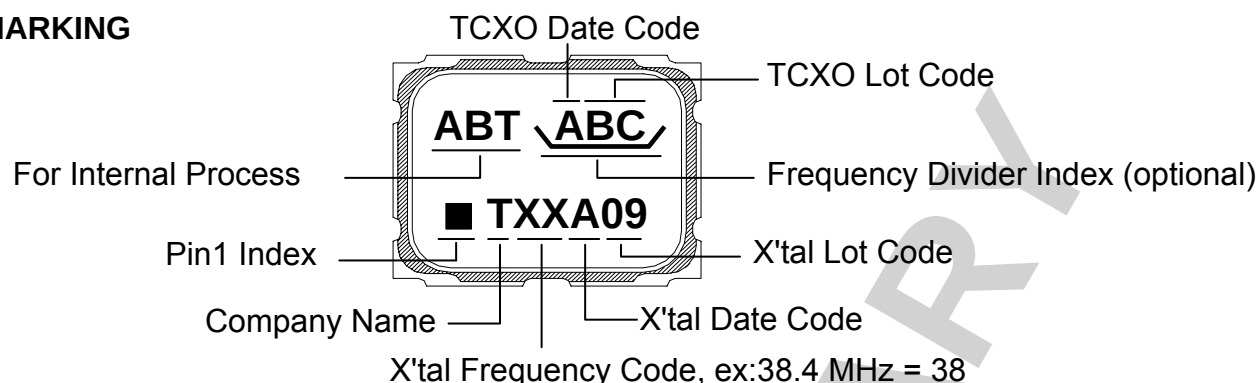
Unit : mm

■ SUGGESTED REFLOW PROFILE



Total Time: 200 sec. Max.
Solder Melting Point: 220°C

MARKING



DATE CODE

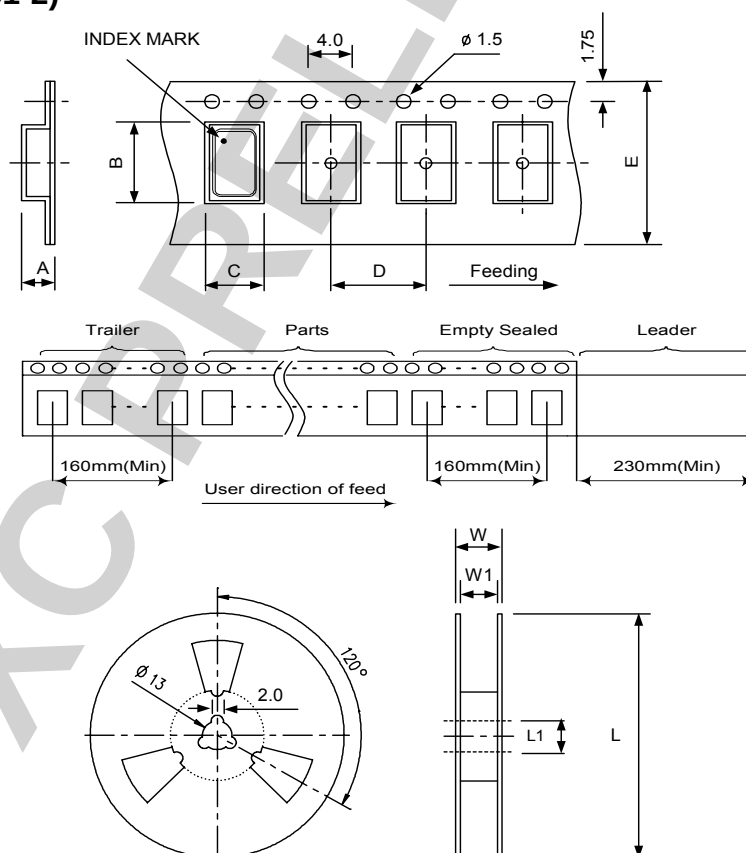
MONTH				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
YEAR				A	B	C	D	E	F	G	H	J	K	L	M
2005	2009	2013	2017	N	P	Q	R	S	T	U	V	W	X	Y	Z
2006	2010	2014	2018	a	b	c	d	e	f	g	h	j	k	l	m
2007	2011	2015	2019	n	p	q	r	s	t	u	v	w	x	y	z
2008	2012	2016	2020												

* This date code will be cycled every four years.

Note: If TCXO frequency is X'tal frequency divided by 2, then frequency divider index appears.

If TCXO frequency is the same as X'tal frequency, then no frequency divider index appears.

PACKING : (EIA-481-2)



Unit: mm

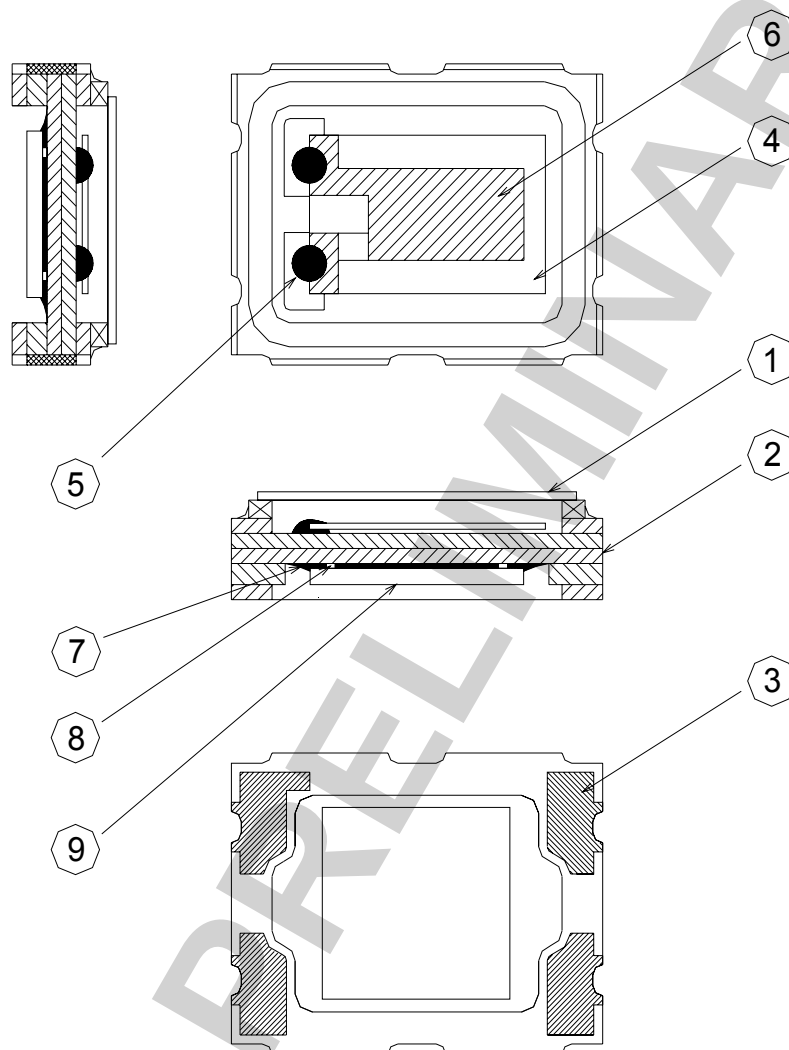
DIMENSIONS (mm)	A	B	C	D	E	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel
	1.40	3.40	2.70	4.00	8.0	178.0	13.0	11.5	8.0	

WEIGHT

0.0217 g / piece(TYP), 65 ± 2 g / 3 kpcs (regardless of tape weight)

■ STRUCTURE ILLUSTRATION

Crystal Enclosure Seal: Seam Welding



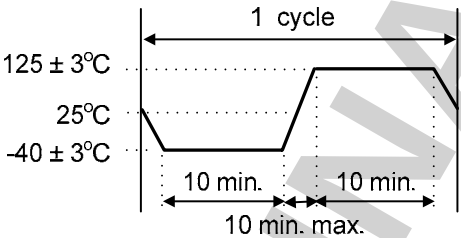
No.	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Cap	Metal(Fe + Co + Ni)	-
2	Base	Ceramic	Color Black
3	Pad	Au	Tungsten Metalize + Ni Plating + Au Plating
4	Crystal Blank	SiO ₂	-
5	Conductive Adhesive	Ag	Silicone Resin
6	Electrode	Noble Metal	-
7	Underfill	Organic	Color Black
8	Bump	Au	
9	IC	Si	

■ RELIABILITY SPECIFICATIONS**1. Mechanical Endurance**

No.	Test Item	Test Methods	Criteria
1.1	Drop Test	Hegiht : 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	Acceleration : 20 g Duration : 4 hours/each direction Frequency range : 10 ~ 2000 Hz Amplitude : 1.52 mm Direction : X,Y,Z 3 directions Sweep speed : 20 minutes/cycle	+/- 2.0 ppm
1.4	Gross Leak	Standard sample for automatic gross leak detector. Test Pressure : 2 kg / cm ²	$< 1.5 \times 10^{-5}$ Pa m ³ / sec
1.5	Fine Leak	Helium bomging 4.5 kgf / cm ² for 2 hours	$< 1.0 \times 10^{-9}$ Pa m ³ / sec
1.6	Solderability	Preheate temperature : 125°C ± 5°C Preheate time : 120 sec Solding 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.

2. Environmental Endurance

No.	Test Item	Test Methods	Criteria
2.1	High Temp. Storage	Temperature : $+125^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Duration : 168 hours	± 2.0 ppm
2.2	Low Temp. Storage	Temperature : $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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 : $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity: RH 85% Duration : 168 hours	± 2.0 ppm
2.5	Aging	Temperature : $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Duration : 500 hours Voltage input by specification	± 2.0 ppm

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

■ NOTICE

1. Product storage (Before dry bag opened) and usage(After dry bag opened) condition :

	Before dry bag opened	After dry bag opened
Temperature	-10 ~ 50°C	-10 ~ 30°C
Humidity	10% ~ 65%	10% ~ 60%
Period	6 months	2 days

2. Please keep product used within 2 days after dry bag opened, and pack the rest product into dry bag by heat sealing the bag neck.

■ PROHIBITED ITEMS

Be sure to use the product under the following conditions. Otherwise, the product may lose function due to improper usage.

1. Reflow soldering heat resistance :

- 1.1 Peak temperature and period : 265°C, 10 sec
- 1.2 Preheating temperature and period : 170 ± 10°C, 120 sec
- 1.3 Reflow passage times : twice

2. Manual soldering heat resistance :

- 2.1 Soldering iron :

Pressing a soldering iron of 350°C on the terminal electrode below 3 sec

- 2.2 Hot air gun soldering :

Keep the hot air export head above the product with a minimum gap distance : 1.5 cm

Maximum hot air blowing temperature : 300°C

Maximum hot air blowing period : 2 sec