TXC CORPORATION
4F, NO. 16, Sec. 2 Chung Yang S Rd., Peitou, Taipei, Taiwan.
TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207 www.txccorp.com

SPECIFICATION FOR APPROVAL

CUSTOMER :

PRODUCT TYPE : SMD TCXO 2.5 * 2.0

NOMINAL FREQ. : 26 MHz

TXC P/N : 7L26003019

REVISION : A1

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: Product Specification Sheet

1
2
3
4
5

RoHS Compliant

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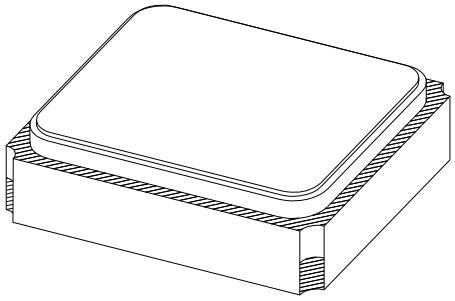
PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD TCXO 2.5 * 2.0

NOMINAL FREQ. : 26 MHz

TXC P/N : 7L26003019

REVISION : A1



PE/RD	QA	MFG
Eric Tsao **Eric Tsao**	Alex Huang **Alex Huang**	Hungte Liu **Hungte Liu**
20-Aug-14	*20-Aug-14*	*20-Aug-14*

NOTE:

(1) The green product standard set by TXC is based upon the international standards. Related information is publicly described on the TXC's Website, and updated regularly. The document is compliant with the latest green product quality system directives at the time.

(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

PRODUCT TYPE : SMD TCXO 2.5 * 2.0 P/N : 7L26003019 REVISION : A1

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A1	N/A	Initial released	2014/08/20	N/A	Su-Chen Chiang

■ ELECTRICAL SPECIFICATIONS

Item	Parameters		Condition	Electrical Specifications				Note
				MIN	TYP	MAX	UNITS	
1	Nominal Frequency				26.000000		MHz	
2	Operating Temperature Range			-40		+85	℃	
3	Supply Voltage			1.71	1.80	1.89	V	
4	Current Drain					1.5	mA	
5	Output Level			0.8			V	1
6	Output Type				Clipped Sinewave			
7	Output Load		Resistance	9	10	11	kΩ	
8			Capacitance	9	10	11	pF	
9	Frequency Tolerance		After 2 times reflow			±2.0	ppm	2
10	Frequency Stability	vs. Temperature	Temp: -30 ~ +85 ℃			±0.5	ppm	3
11			Temp: -40 ~ -30 ℃			±4.0	ppm	3
12		vs. Load	Load: 10 kΩ // 10 pF ±10%			±0.2	ppm	
13		vs. Supply Voltage	Vcc: 1.8 V ±5%			±0.2	ppm	
14	Slope of Frequency Drift over Temperature		Temp: -20 ~ +70 ℃			±0.1	ppm/℃	4
15			Temp: -40 ~ -20 ℃,+70 ~ +85℃			±0.2	ppm/℃	
16	Storage Temperature			-40		+85	℃	
17	Start-up Time	vs. Frequency	Within ± 1 ppm			2.5	ms	
18		vs. Output Level	To 90% of Vp-p			2.5	ms	
19	Duty Cycle			40	50	60	%	
20	Aging		Per year			±1.0	ppm	
21	Harmonics					-8	dBc	
22	Phase Noise	@ 1 kHz offset			-130		dBc/Hz	

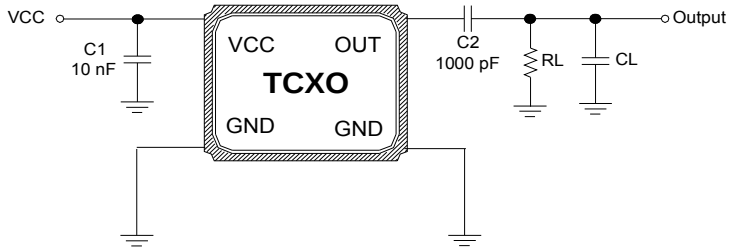
Note 1 Decoupling capacitor is required in external circuit

Note 2 Refer to nominal frequency

Note 3 Refer to frequency at 25±2℃

Note 4 Minimum of 1 frequency reading every 2°C over temperature, based on temperature varied at maximum of 2°C per minute.

TESTING CIRCUIT

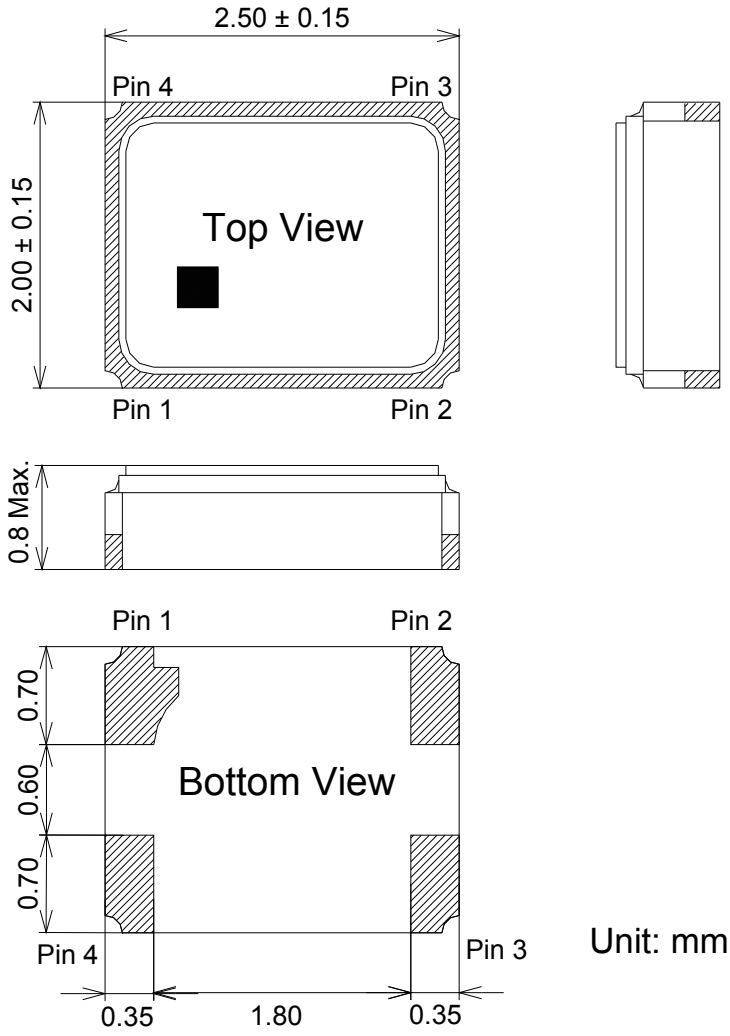


External Components

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

Note: Bypass capacitor (C1) and DC blocking capacitor (C2) should be placed.

DIMENSIONS

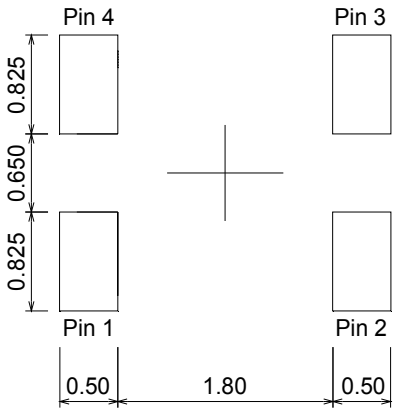


Unit: mm

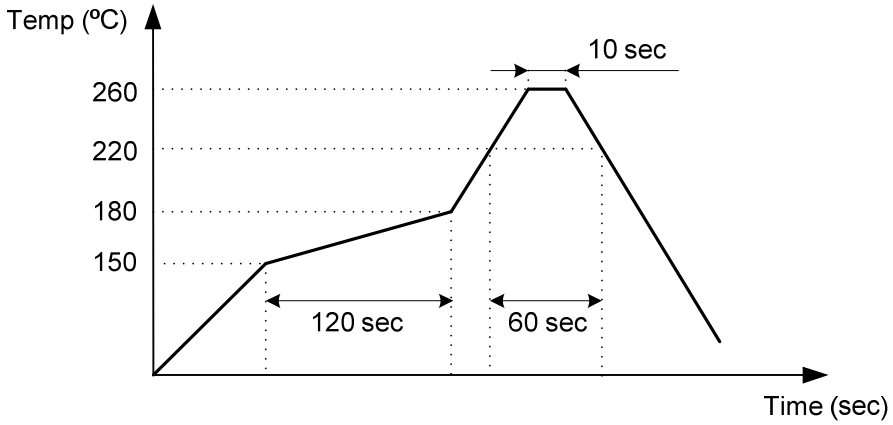
Pin Connection

Name	Function
Pin 1	GND or NC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC

Recommended Land Pattern



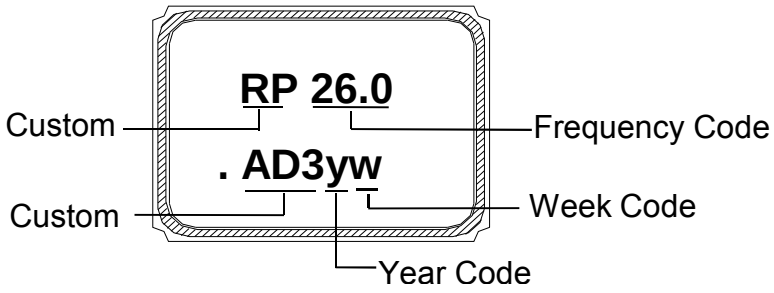
SUGGESTED REFLOW PROFILE



Note 1: Period while temperature exceeds the solder melting point : 220°C should be less than 200 sec.

Note 2: Period while temperature stays at the top melting point : 260°C should be less than 30 sec.

MARKING

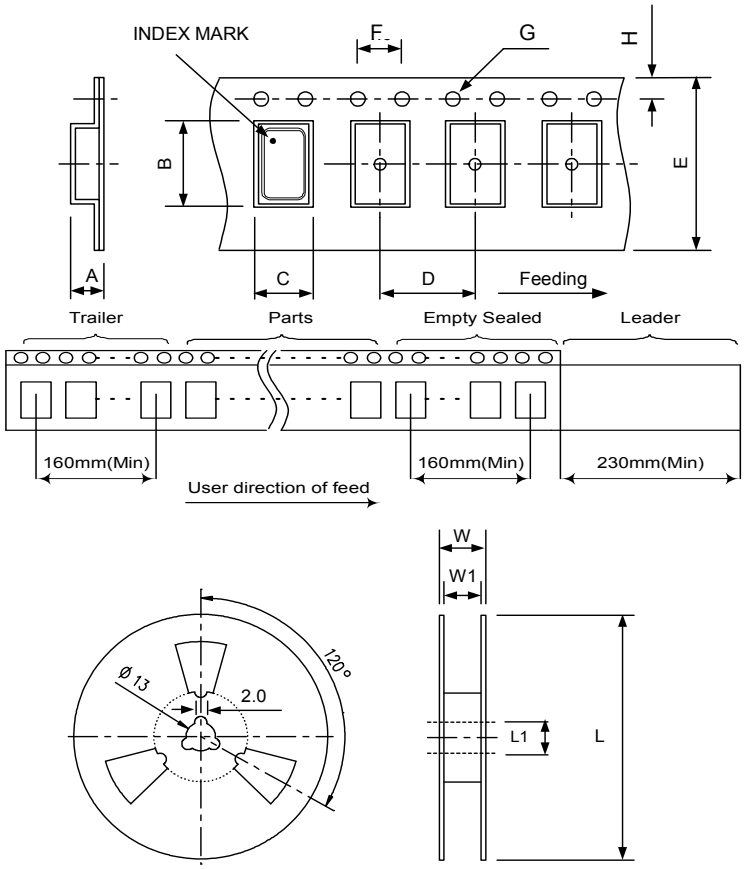


y – Year code
w – Week code

YEAR CODE									
Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Code	1	2	3	4	5	6	7	8	9

ALPHA WEEK CODE TABLE									
Week	Code	Week	Code	Week	Code	Week	Code	Week	Code
1	a	12	l	23	w	34	H	45	S
2	b	13	m	24	x	35	I	46	T
3	c	14	n	25	w	36	J	47	U
4	d	15	o	26	z	37	K	48	V
5	e	16	p	27	A	38	L	49	W
6	f	17	q	28	B	39	M	50	X
7	g	18	r	29	C	40	N	51	Y
8	h	19	s	30	D	41	O	52	Z
9	i	20	t	31	E	42	P		
10	j	21	u	32	F	43	Q		
11	k	22	v	33	G	44	R		

■ PACKING : (EIA-481-2)



Unit: mm

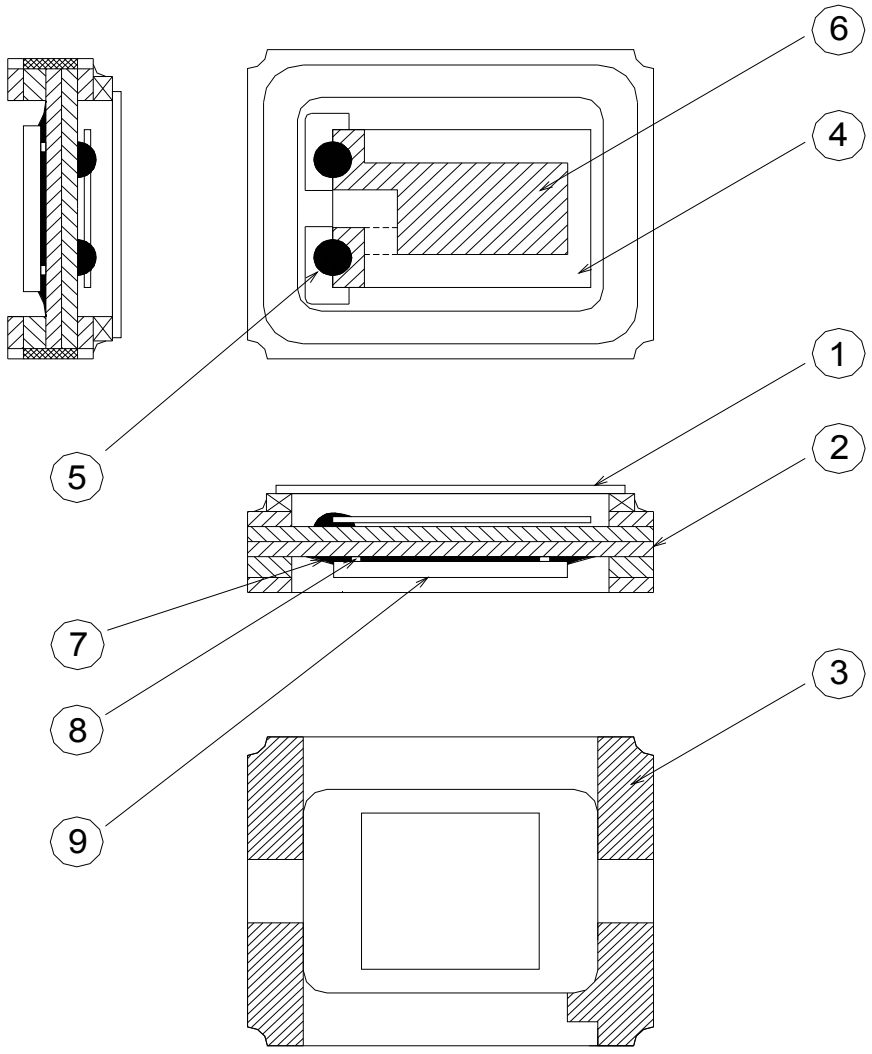
DIMENSIONS (mm)	A	B	C	D	E	F	G	H	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel
	1.15	2.70	2.25	4.00	8.00	4.00	1.55	1.75	178	13.0	11.6	8.4	

■ WEIGHT

0.0135 g / piece(TYP), 40 ± 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	Molybdenum 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	

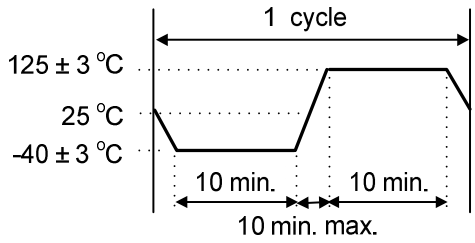
■ RELIABILITY SPECIFICATIONS

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	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 bomging 4.5 kgf/cm^2 for 2 hours	< 1.0×10^{-9} Pa m^3 / sec
1.6	Solderability	Preheate temperature : 125℃ ± 5℃ Preheate time : 120 sec Solding temperature : 245℃ ± 5 ℃ Duration : 5 ± 1 sec Method : Solder bath method	90% Coated

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

2. Environmental Endurance

No.	Test Item	Test Methods	Criteria
2.1	High Temp. Storage	Temperature : +125℃ ± 3℃ Duration : 168 hours	+/- 2.0 ppm
2.2	Low Temp. Storage	Temperature : -40℃ ± 3℃ 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℃ ± 3℃ Humidity: RH 85% Duration : 168 hours	+/- 2.0 ppm
2.5	Aging	Temperature : 85℃ ± 3℃ Duration : 500 hours Voltage input by specification	+/- 2.0 ppm

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