TXC CORPORATION

www.txccorp.com

SPECIFICATION FOR APPROVAL

CN:_____

CUSTOMER	:	
PRODUCT TYPE	:	SMD TCXO 2.5 * 2.0
NOMINAL FREQ.	:	26.000000 MHz
TXC P/N	:	AL26042001
REVISION	:	S1
CUSTOMER P/N	:	
PM / SALES	:	
DATE	:	
CUSTOMER CONFIRMATION	:	(Singnature)
		(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):

- [V] 1. Product Specification Sheet
- [ ] 2. Testing Report(Electrical & Temperature)
- [ ] 3. Reliability Report

MSL:Level 1

RoHS Compliant

(for glass crystal only：Pb used in sealing glass material is exempt from EU directive)

TXC confidential and proprietary document

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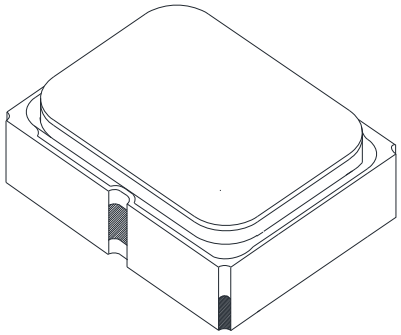
CUSTOMER : _____

PRODUCT TYPE : SMD TCXO 2.5 * 2.0

NOMINAL FREQ. : 26.000000 MHz

TXC P/N : AL26042001

REVISION : S1



PE/RD	QA	MFG
Eric Tsao		
2019/1/18		

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.

MSL:Level 1

RoHS Compliant

(for glass crystal only：Pb used in sealing glass material is exempt from EU directive)

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Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
S1	N/A	Initial released	2019/01/18	N/A	Su-Chen Chiang

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■ ELECTRICAL SPECIFICATIONS

Item	Parameters		Condition	Electrical Specifications				Note
				MIN	TYP	MAX	UNITS	
1	Nominal Frequency				26.000000		MHz	
2	Operating Temperature Range			-40		+105	℃	
3	Supply Voltage			1.68	2.80	3.45	V	
4	Current Drain					2.0	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: -40 ~ +105 ℃			±0.5	ppm	3
11		vs. Load	Load: 10 kΩ // 10 pF ±10%			±0.1	ppm	
12		vs. Supply Voltage	Vcc: 2.8 V ±5%			±0.1	ppm	
13	Slope of Frequency Drift over Temperature					±0.1	ppm/℃	4
14	Frequency Drift		Within 30 ms			500	ppb/s	
15			Within 100 ms			500	ppb/s	
16			Within 300 ms			500	ppb/s	
17			Within 1000 ms			200	ppb/s	
18			Within 3000 ms			5	ppb/s	
19	Hysteresis		Difference at any temperature			±0.5	ppm	
20	Storage Temperature			-40		+125	℃	
21	Duty Cycle			45	50	55	%	
22	Aging		1 year			±1.0	ppm/year	
23	Spurious Sidebands		0.1 to 10 Hz		-38		dBc	
24			10 to 100 Hz		-76		dBc	
25			100 to 10000 Hz		-76		dBc	
26			10000 to 50000 Hz		-66		dBc	
27	Phase Noise	@ 1 Hz offset			-54		dBc/Hz	
28		@ 10 Hz offset			-84		dBc/Hz	
29		@ 100 Hz offset			-110		dBc/Hz	
30		@ 1 kHz offset			-130		dBc/Hz	
31		@ 10 kHz offset			-145		dBc/Hz	
32	G Sensitivity		Any axis			3	ppb/g	

Note 1 Decoupling capacitor (1000 pF) is required in external circuit

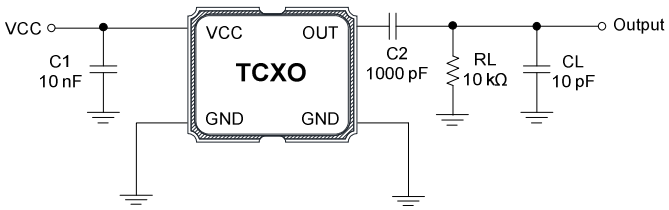
Note 2 Refer to nominal frequency

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.

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TESTING CIRCUIT

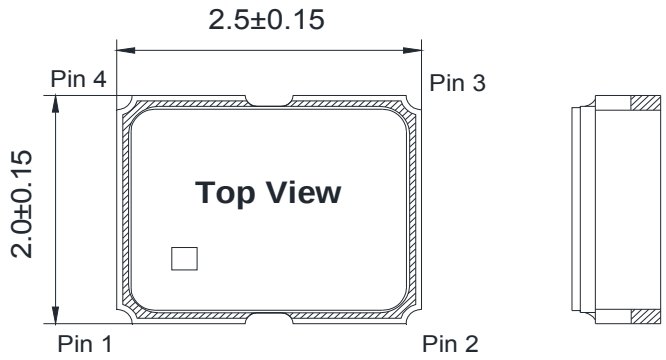


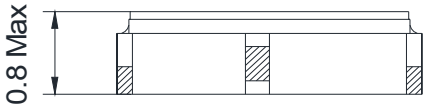
External Components

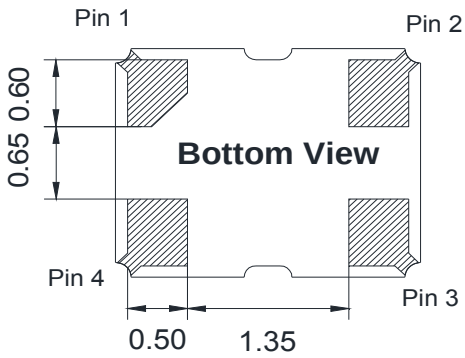
Name	Function
C1	AC Noise Bypass for VCC
C2	DC Block for Output
RL	Load Resistance
CL	Load Capacitance

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

DIMENSIONS





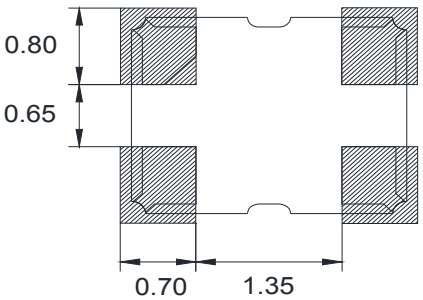


Unit : mm

Pin Connection

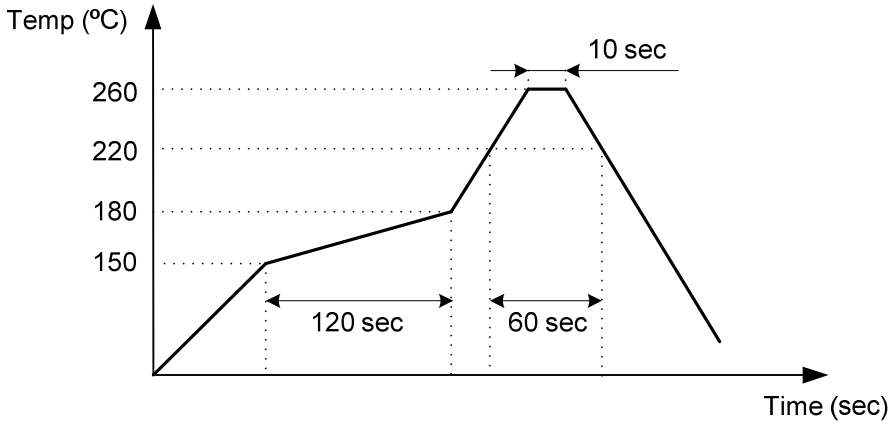
Name	Function
Pin 1	GND or NC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC

Recommended Land Pattern



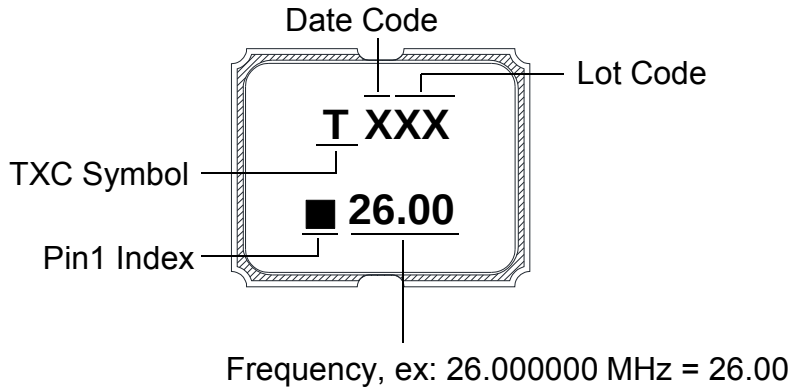
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■ SUGGESTED REFLOW PROFILE



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

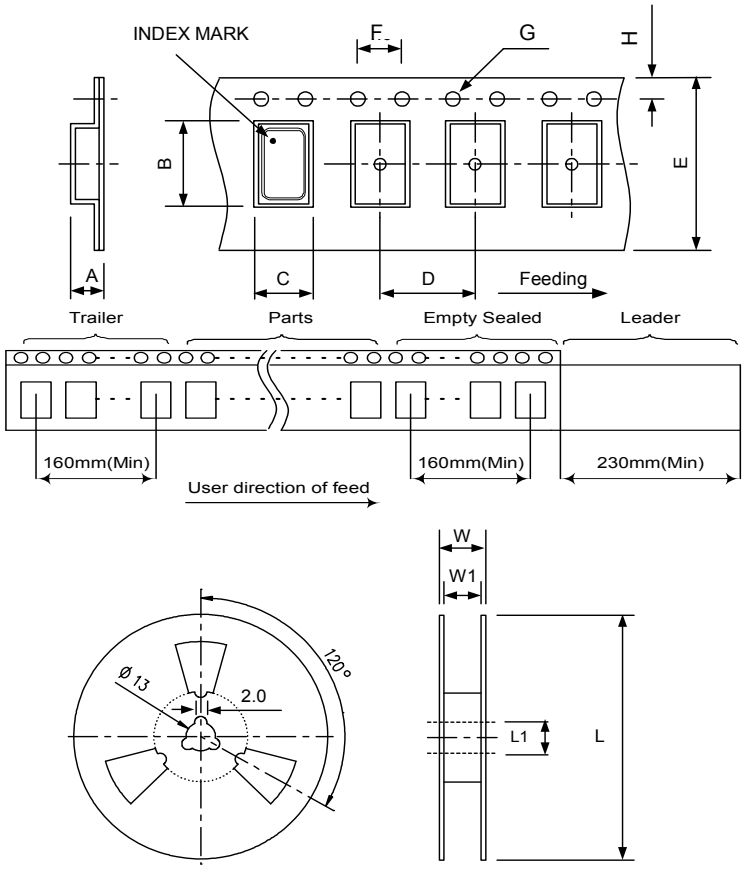


DATE CODE

YEAR \ MONTH					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2005	2009	2013	2017	2021	A	B	C	D	E	F	G	H	J	K	L	M
2006	2010	2014	2018	2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	2011	2015	2019	2023	a	b	c	d	e	f	g	h	j	k	l	m
2008	2012	2016	2020	2024	n	p	q	r	s	t	u	v	w	x	y	z

* This date code will be cycled every four years.

■ PACKING : (EIA-481-2)



Unit: mm

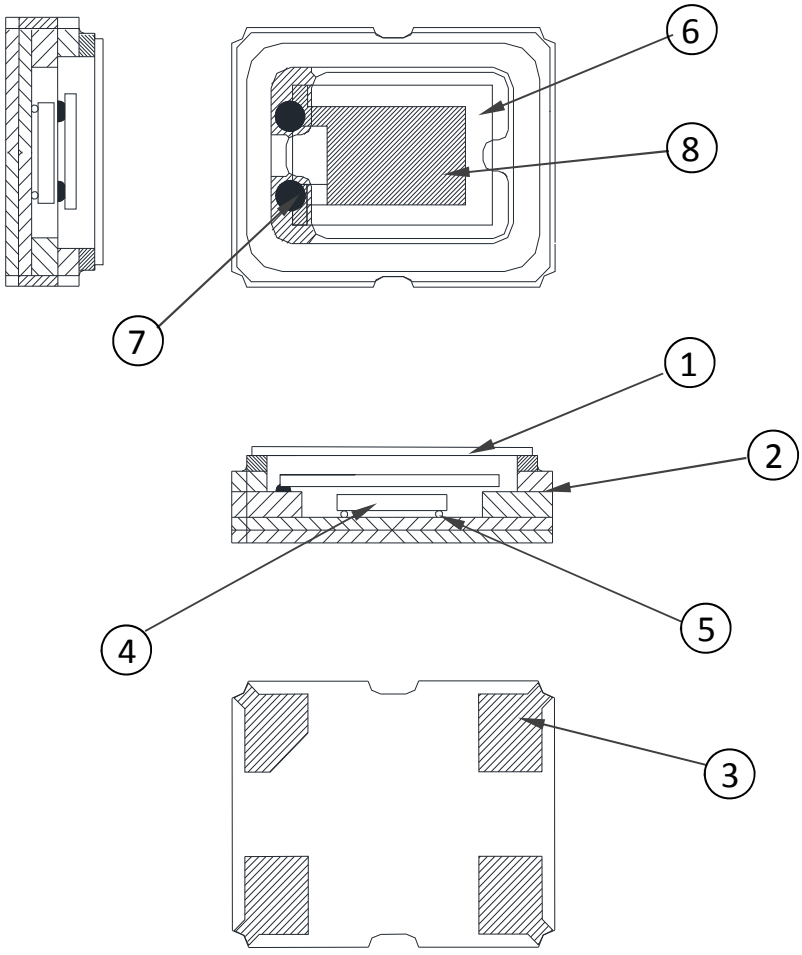
DIMENSIONS (mm)	A	B	C	D	E	F	G	H	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel
	1.15	2.70	2.25	4.00	8.00	4.00	1.55	1.75	178	13.0	11.6	8.4	

■ 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	Tungsten Metalize + Ni Plating + Au Plating
4	IC	Si	
5	Bonding wire	Au	
6	Crystal Blank	SiO_2	-
7	Conductive Adhesive	Ag	Silicone Resin
8	Electrode	Noble Metal	-

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■ RELIABILITY SPECIFICATIONS (AEC-Q100 & AEC-Q200 Compliant)

1. Mechanical Endurance

No.	Test Item	Test Methods	Standard
1.1	Drop Test	20 times,120 cm Height, Fall freely onto stainless plate	AEC-Q100
1.2	Mechanical Shock	5000 G, 0.3 msec. , 3 times for all 6 directions.	JESD22-B104
1.3	Vibration	50 G, 10 ~ 2000 Hz, 1.52 mm, Sweep 5 min. 4 times, 3 Direction 1 hours.	JESD22-B103
1.4	Solderability	245℃ ± 5℃ , 5 sec. (125℃ , 120 sec. PREHEATED)	JESD22-B102
1.5	Board Flex	Duration Time : 60 sec, Deviation : 2 mm	JIS-C-6429
1.6	Terminal Strength	Applied Force : 1.8 kg , Duration Time : 60 sec	JIS-C-6429

2. Environmental Endurance

No.	Test Item	Test Methods	Standard
2.1	Thermal Shock	-55℃ ~ 125℃, Dwell : 30 min, Transfer time 20 sec , All 1000 Cycles	MIL-STD-202
2.2	Temperature Cycling	-55℃~125℃, Dwell : 15 min, All 1000 cycles	JESD22-A104
2.3	Autoclave	121℃ / RH 100% / 2 bar for 96 hours [1 Bar = 14.5 psig (Europe)]	JESD22-A102,A118, or A101
2.4	High Temp. Storage	125℃ for 1000 hours	MIL-STD-202
2.5	Low Temp. Storage	-40℃± 3℃ , all 1000 hrs	MIL-STD-202
2.6	High Temp & Humidity	85℃ / RH 85% for 1000 hours.	JESD22-A101 or A110
2.7	High Temp. Operation Life	105℃ Ta for 1000 hours only on devices.	ESD22-A108

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