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 SEAM SEALING CXO 7.0×5.0
NOMINAL FREQ.	:	70.656000MHz
TXC P/N	:	7W70602001
REVISION	:	A2
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):

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

RoHS Compliant

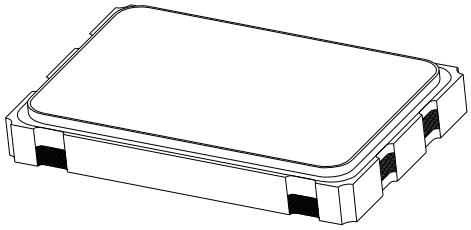
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PRODUCT SPECIFICATION SHEET

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NOMINAL FREQ.	:	70.656000MHz
TXC P/N	:	7W70602001
REVISION	:	A2



PE/RD	QA	MFG
Oscar Chen	Alex Huang	Leye Tang
23-Jan-15	*23-Jan-15*	*23-Jan-15*

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

TXC CORPORATION

PRODUCT TYPE :SMD SEAM SEALING CXO 7.0×5.0 P/N： 7W70602001 REVISION： A2

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A1	N/A	Initial released	2-Sep-09	N/A	Yachuan Miao
A2	2	Add Note 4	23-Jan-15	EC-PCF-150122-03	Yachuan Miao

TXC CORPORATION

PRODUCT TYPE :SMD SEAM SEALING CXO 7.0×5.0 P/N： 7W70602001 REVISION： A2

■ ELECTRICAL SPECIFICATIONS

	Parameters	Condition	Electrical Specifications			
			MIN	TYP	MAX	UNITS
1	Nominal Frequency		70.656000			MHz
2	Oscillation Mode		3rd Overtone			
3	Operating Temperature	Note 4	-40	~	85	℃
4	Storage Temperature		-55	~	125	℃
5	Frequency Stability	Note 1	-	-	±25	ppm
6	Supply Voltage (+3.3 V)		2.97	3.3	3.63	V
7	Current Consumption		-	-	30	mA
8	Standby Function		YES			
9	Output Type		CMOS			
10	Output Load		15			pF
11	Output Voltage High +25 ℃		90%VDD	-	-	V
12	Output Voltage Low +25 ℃		-	-	10%VDD	V
13	Rise Time	10%~90% Output Swing	-	-	3	nS
14	Fall Time	90%~10% Output Swing	-	-	3	nS
15	Symmetry or Duty Cycle		45	50	55	%
16	Start-up Time	To 90% of Final Amplitude	-	-	8	mS
17	Enable Voltage High (Logic 1)	Note 2	70%VDD	-	-	V
18	Enable Voltage Low (Logic 0)	Note 2	-	-	30%VDD	V
19	Aging	1st.Year at 25℃	±3			ppm
20	Phase Jitter	12kHz - 20MHz	-	-	1	pS rms
21		10 Hz	-	-	-50	dBc/Hz
		100 Hz	-	-	-75	dBc/Hz
		1K Hz	-	-	-95	dBc/Hz
		10 KHz	-	-	-125	dBc/Hz
		100KHz	-	-	-130	dBc/Hz
		1MHz	-	-	-140	dBc/Hz

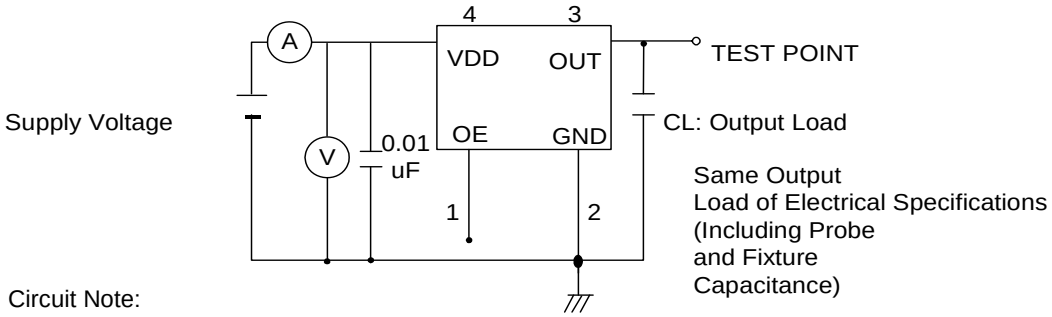
Note 1:Inclusive of frequency tolerance at 25℃, variation over temperature, supply voltage variation, aging and vibration

Note 2:Output will be enable if OE is Logic 1 or open ; Output will be disable if OE is Logic 0.

Note 3:The standard testing environment except temperature test is 25±5°C, 40%~70% relative humidity.

Note 4:Frequency stability Maximum 1ppm /℃ variation of the operating Temperature

■ TESTING CIRCUIT



Testing Circuit Note:

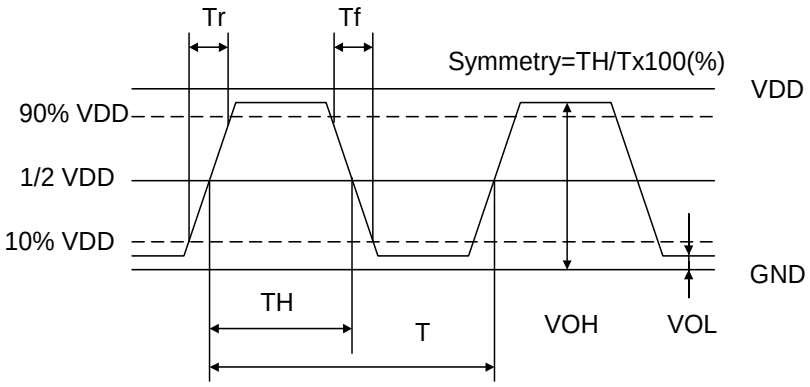
(1) Above testing circuits cover all the specfications except temperature test & Jitter measurement.

(2) All the testing equipments are 50Ohm terminal.

(3) OE terminal is open connection except OE function test.

■ WAVEFORM CONDITIONS

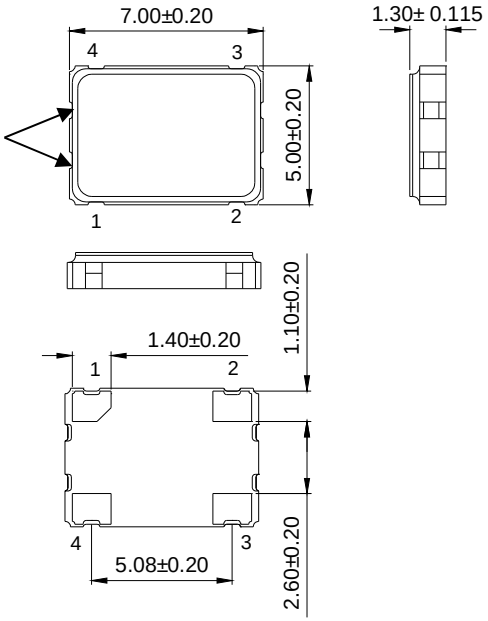
Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.



■ DIMENSIONS

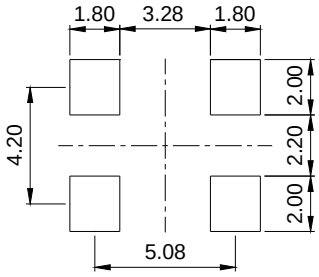
(Unit:mm)

Crystal DLD2 measurement terminal (Note: #1)



PAD FUNCTION:
1: ENABLE CONTROL
2: GND
3: OUT
4: VDD

Suggested Layout

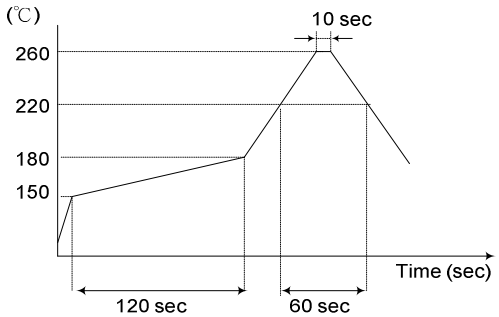


Note: #1. DLD2 / Drive Level Dependency 2 Maximum resistance minus minimum resistance.

■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

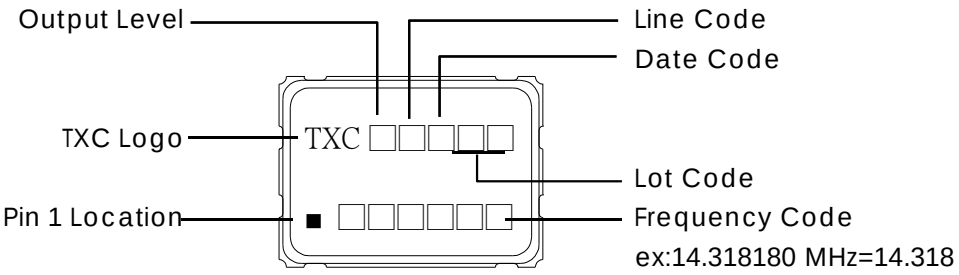
Solder melting point :220 ℃



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■ MARKING



Output Level:

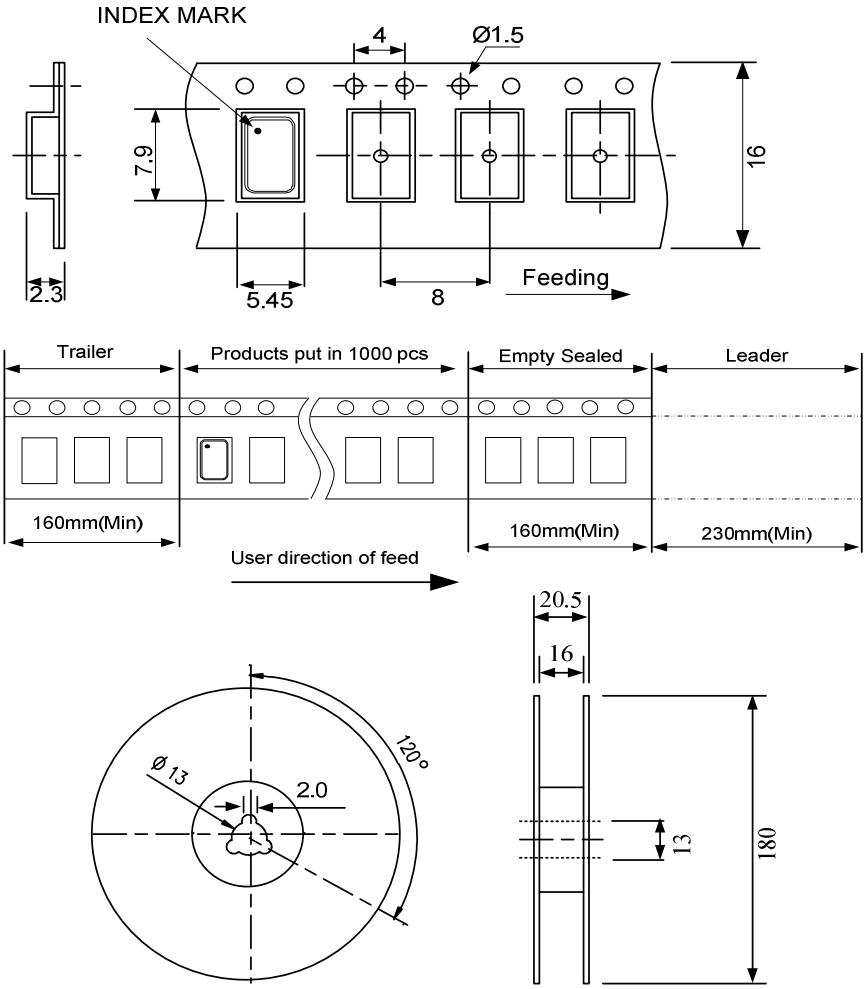
VDD(V)	5	3.3	2.8	2.5	1.8	2.9	3.0	2.85	2.6	2.55	2	1.5	2.7
CODE	A	B	C	D	E	F	G	H	J	K	L	M	N

Date Code:

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

*This date code will be cycled every four years

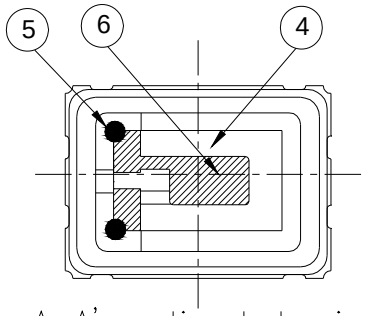
■ PACKING



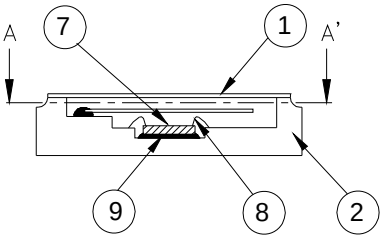
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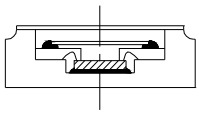
■ STRUCTURE ILLUSTRATION



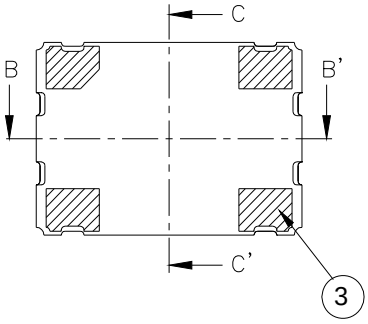
A–A' sectional drawing



B–B' sectional drawing



C–C' sectional drawing



NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	LID	Kovar (Fe/Co/Ni)	-
2	Base(Package)	Ceramic (Al_2O_3) + Kovar (Fe/Co/Ni)+ Ag/Cu	Color black
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO_2	-
5	Conductive adhesive	Ag	Silicon resin
6	Electrode	Noble Metal	-
7	IC chip	-	-
8	Bonding wire	Au	Pad 1 options : NC is 5 wires , EN is 6 wires.
9	Die attached	Conductive (Ag)	Epoxy resin

■ WEIGHT:

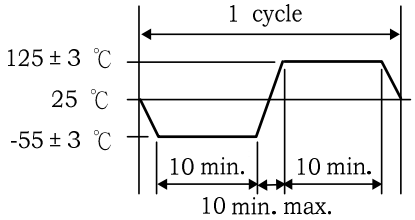
0.152±0.001 g/pcs

■ RELIABILITY SPECIFICATIONS

1.Mechanical Endurance

No.	Test Item	Test Methods	REF. DOC
1	Drop Test	75 cm height, fall freely onto concrete floor 3 times.	JIS C6701
1	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202F
1	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minutes Perpendicular axes each test time 4 Hrs (Total test time 12 Hrs)	MIL-STD-883E
1	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2kg / cm^2	MIL-STD-883E
2	Fine Leak	Pre-condition - Helium Bomging 4.5 Kgf / cm2 for 2 hrs Tested by mass-spectrumeter	
2	Solderability	Temperature 245 ℃ ± 5℃ Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E

2.Environmental Endurance

No.	Test Item	Test Methods	REF. DOC
2	Resistance To Soldering Heat	Pre-heat temperature 125 ℃ Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 ℃ Test time 10 ± 1 sec.	MIL-STD-202F
2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 1000 Hrs	MIL-STD-883E
2	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 1000 Hrs	
2	Thermal Shock (Air to Air)	Total 100 cycles of the following temperature cycle 	MIL-STD-883E
3	Pressure Cooker Test	120 ± 3℃ , RH100% , 2 bar ,for 240 Hrs	JESD22-A102-C
3	High Temp＆Humidity	85℃ ± 3℃, RH 85% , 1000 Hrs	JIS C5023
3	Aging	85℃ ± 3℃, Voltage input by specification, 1000 Hrs	JIS C6701