

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD SEAM SEALING CXO 7.0*5.0

NOMINAL FREQ. : 33.000000MHz

TXC P/N : 7W33000011

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: Product Specification Sheet

- 1
- 2
- 3
- 4
- 5

RoHS Compliant

PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD SEAM SEALING CXO 7.0*5.0

NOMINAL FREQ. : 33.000000MHz

TXC P/N : 7W33000011

REVISION : S1

PE/RD	QA	MFG
<i>Scott Chen</i>		
<i>26-Jan-06</i>		

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

ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

- Ambient temperature : 22±5°C
- Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

- Ambient temperature : 22±1°C
- Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by MD 37WX-05M or equivalent.

Crystal cutting type

The crystal is using AT CUT (thickness shear mode).

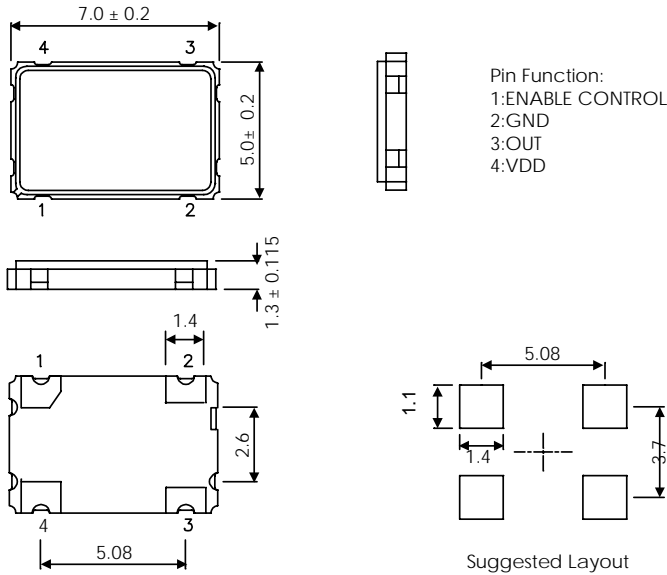
Unit Weight:

0.101±0.001 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	-	33.000000			MHz	-
2	Frequency Stability	-	±50			ppm	-
3	Operating Temperature	Topr	-10	25	70	°C	-
4	Storage Temperature	Tstg	-55	~	125	°C	-
5	Supply Voltage	VDD	3.3 ±10%			V	-
6	Input Current	Icc	-	-	15	mA	-
7	Enable Control	-	Yes			-	Pad 1
8	Output Load : CMOS	CL	15			pF	-
9	Output Voltage High	VoH	2.97	-	-	V	-
10	Output Voltage Low	VoL	-	-	0.33	V	-
11	Rise Time	Tr	-	-	5	ns	10%→90%VDD Level
12	Fall Time	Tf	-	-	5	ns	90%→10%VDD Level
13	Symmetry (Duty ratio)	TH/T	45	~	55	%	-
14	Start-up Time	Tosc	-	-	10	ms	-
15	Enable Voltage High	Vhi	70%Vdd	-	-	V	-
16	Disable Voltage Low	Vlo	-	-	10%Vdd	V	-
17	Aging	-	±3			ppm/yr.	1st. Year at 25°C
18	Output Disable Delay Time	T off	-	-	100	nS	-
19	Output Enable Delay Time	T on	-	-	100	nS	-

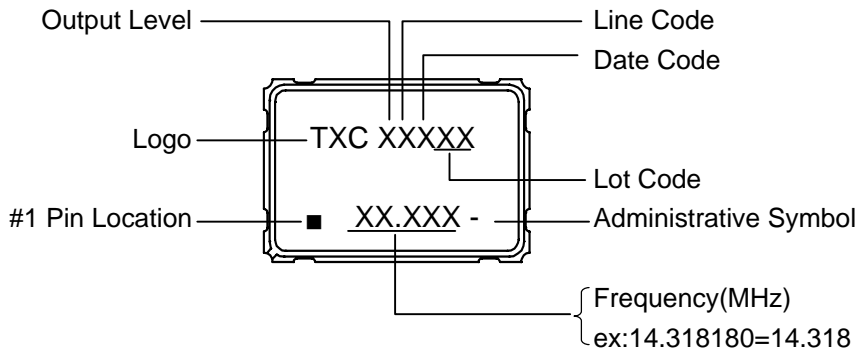
DIMENSIONS

- 1. Crystal enclosure seal : Seam Weld
- 2. Crystal enclosure medium : Nitrogen



Units:mm

MARKING



Output Level:

VDD	5.0V	3.3V	2.8V	2.5V	1.8V	2.9V	3.0v
CODE	A	B	C	D	E	F	G

Date Code

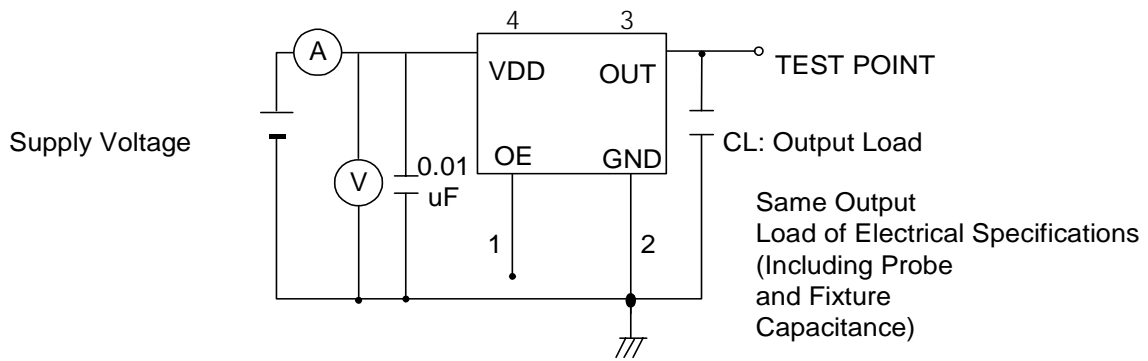
YEAR					MONTH											
					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001	2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2002	2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2004	2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

This date code will be cycled every four years

TEST DIAGRAM

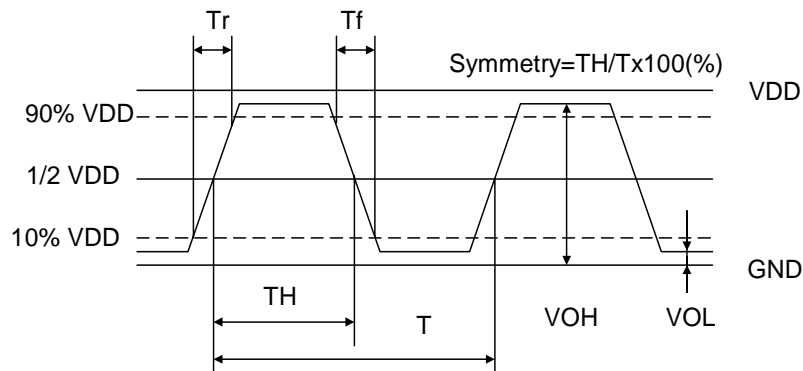
Pad 1 options:

- a. N/C
- b. Control input (output enable/disable)
 - Logic 1 or open on pad 1: Oscillator output
 - Logic 0 on pad 1 : Disable output to high impedance



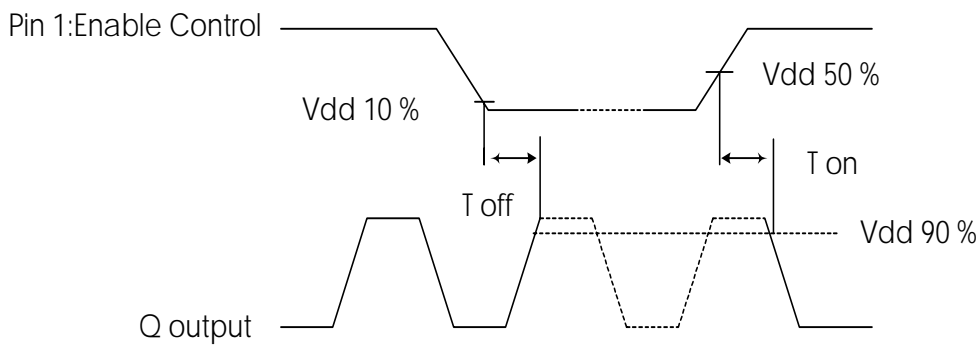
WAVEFORM CONDITIONS

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



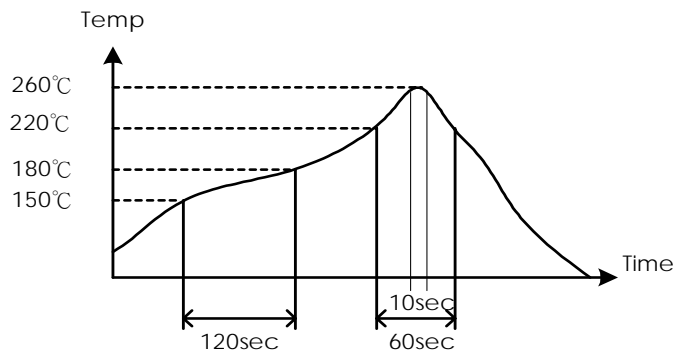
OUTPUT ENABLE / DISABLE DELAY

The following figure shows the oscillator timing during normal operation . Note that when the device is in standby, the oscillator stops. When standby is released, the oscillator starts and stable oscillator output occurs after a short delay.

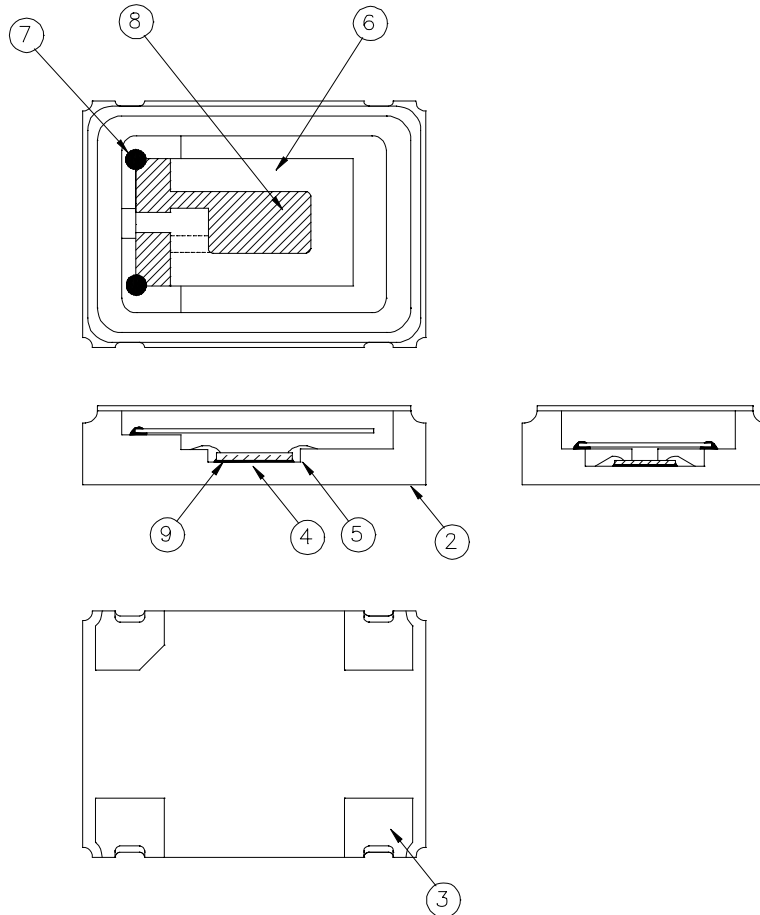


SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.
Solder melting point :220 °C

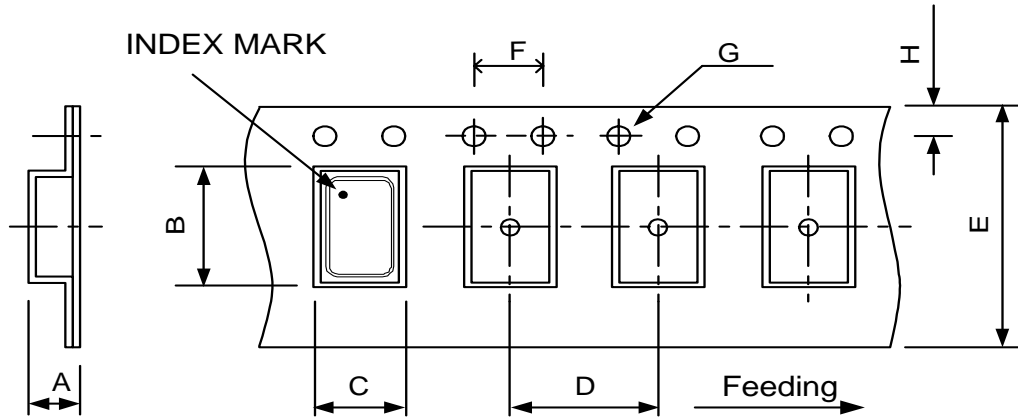


■ STRUCTURE ILLUSTRATION



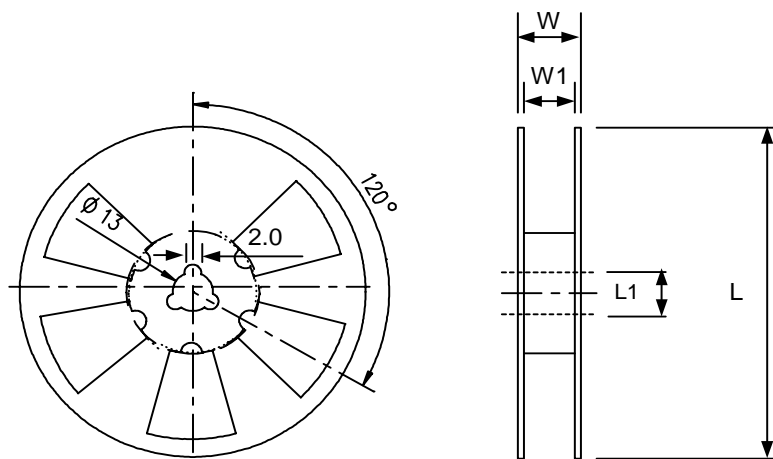
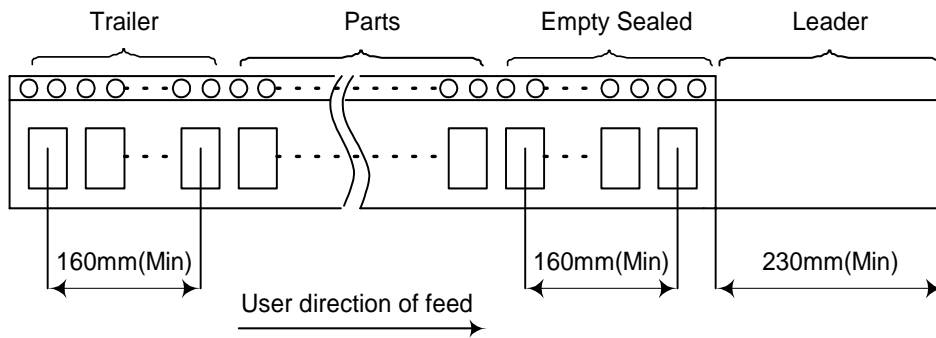
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar	1	-
2	Base(Package)	Ceramic	1	-
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	IC chip	-	1	-
5	Bonding wire	Au	5 or 6	Pad 1 options : NC is 5 wires , EN is 6 wires.
6	Crystal blank	SiO2	1	-
7	Conductive adhesive	Ag	4	Epoxy resin
8	Electrode	Cr & Ag	2	-
9	Conductive adhesive	Ag	1	Epoxy resin

■ PACKING : (EIA-481-2)



DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT : mm)
	2.00	7.90	5.45	8.00	16.00	4.00	1.50	1.75	

REMARK :



DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	180	13	20.5	16	Standard Reel Quantity is 1,000 pcs per reel

RELIABILITY SPECIFICATIONS

No.	Test Item	Test Methods	REF. DOC
1	Drop Test	75 cm height, fall freely onto stainless plate 3 times.	JIS C6701
2	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
3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm Sweep time 20 minute Perpendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
4	Solderability	Temperature 240 °C ± 5°C Immersing depth 0.5 mm minimum Immersion time 5 ± 0.5 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E
5	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C Test time 10 ± 1 sec.	MIL-STD-202F
6	High Temp. Storage	+ 125 °C ± 2 °C for 1000 ± 12 hours	MIL-STD-883E
7	Low Temp. Storage	- 40 °C ± 2 °C for 1000 ± 12 hours	
8	Thermal Cycles	Total 100 cycles of the following temperature cycle 	MIL-STD-883E
9	High Temp. Operation	+ 85°C, VDD, for 1000 hours	MIL-STD-883E
10	Pressure Cooker Storage	120 ± 3°C, RH100%, 2 bar, for 240 hours	