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 LVDS CXO 7.0*5.0

NOMINAL FREQ. : 156.253906MHz

TXC P/N : BFA5600012

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(s):

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

RoHS Compliant

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PRODUCT SPECIFICATION SHEET

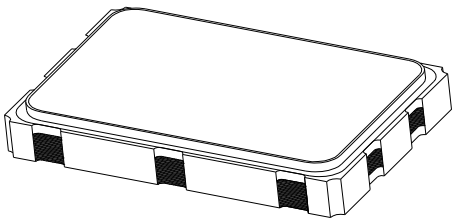
CUSTOMER :

PRODUCT TYPE : SMD LVDS CXO 7.0*5.0

NOMINAL FREQ. : 156.253906MHz

TXC P/N : BFA5600012

REVISION : A1



PE/RD	QA	ME
陳志剛 8/13 12'	Chessen Chu	魏成孝 8/14 12' Leye
2012/8/9	8/16 12	8/14 12'

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

PRODUCT TYPE: SMD LVDS CXO 7.0*5.0 P/N: BFA5600012 REVISION: A1

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A1	N/A	Initial released	2012/8/9	N/A	Oscar Chen

■ ELECTRICAL SPECIFICATIONS

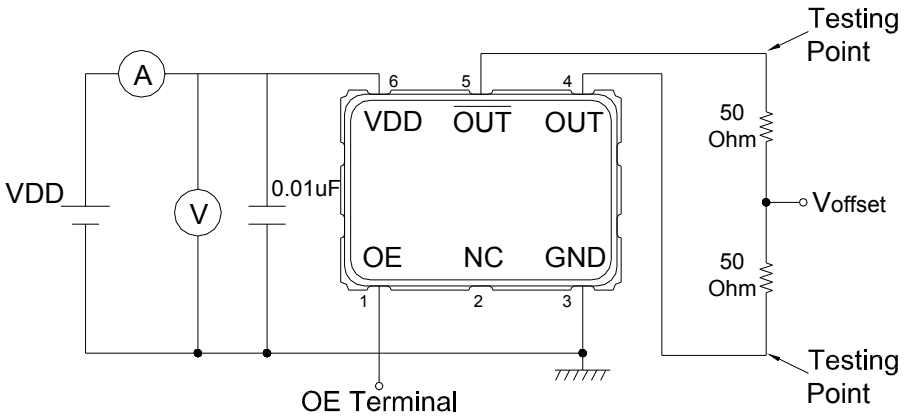
Item	Parameters	Condition	Electrical Specifications			
			MIN	TYP	MAX	UNITS
1	Nominal Frequency (Fo)		156.253906			MHz
2	Oscillation Mode		3rd Overtone			
3	Operating Temperature		-40	-	85	℃
4	Storage Temperature		-55	-	125	℃
5	Frequency Stability	Note 1	-25	-	25	PPM
6	Supply Voltage		2.97	3.30	3.63	V
7	Current Consumption	RL=100Ω	-	-	80	mA
8	Standby Function	Internal Pull Up	YES			
9	Current Consumption(Standby)	OE=Low	-	-	10	uA
10	Output Type		LVDS			
11	Output Load		100			Ω
12	Output Voltage High		-	1.43	1.6	V
13	Output Voltage Low		0.9	1.1	-	V
14	Offset Voltage		1.125	1.250	1.375	V
15	Different Output Voltage		247	330	454	mV
16	Rise Time	20% ~ 80% Output Swing	-	-	1	nS
17	Fall Time	80% ~ 20% Output Swing	-	-	1	nS
18	Symmetry		45	50	55	%
19	Start-up Time	To 90% of Final Amplitude	-	-	10	mS
20	Enable Voltage High (Logic 1)	Note 2	0.7VDD	-	-	V
21	Enable Voltage Low (Logic 0)	Note 2	-	-	0.3VDD	V
22	Output Enable Delay Time		-	-	500	uS
23	Output Disable Delay Time		-	-	500	uS
24	Phase Jitter	12K ~ 20MHz	-	-	1	pS rms

Note 1 Inclusive of frequency tolerance at 25degC, 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±5degC, 40%~70% relative humidity.

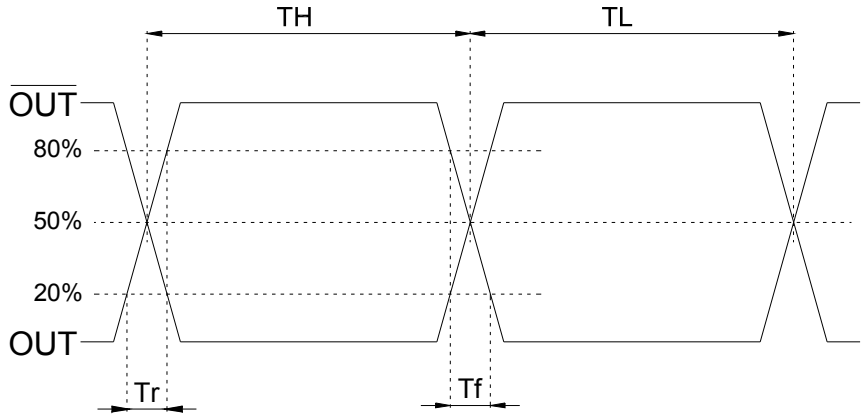
■ TESTING CIRCUIT



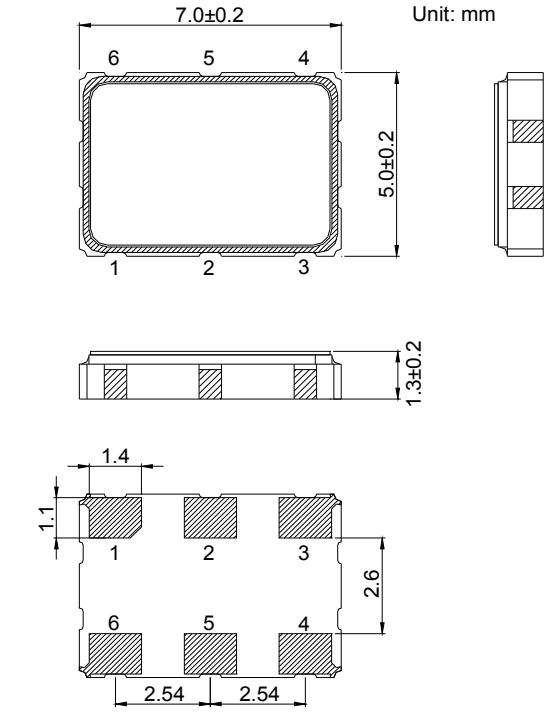
Testing Circuit Note:

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 CONDITONS



DIMENSIONS

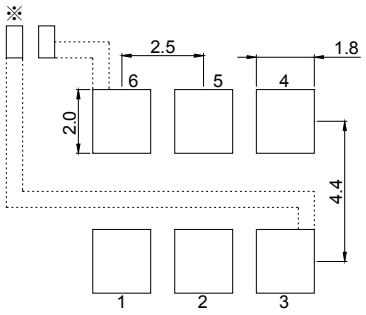


※ Pad dimension tolerance ±0.2 mm

Pin Function:

1. OE
2. NC
3. GND
4. OUT
5. $\overline{\text{OUT}}$
6. VDD

Land Pattern:

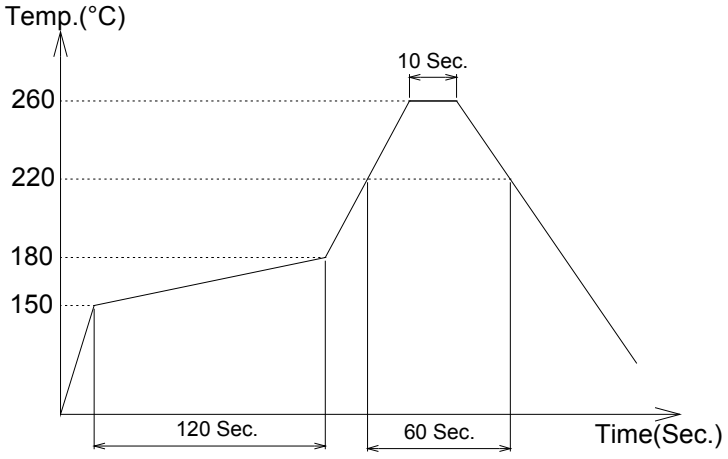


※ Power Supply Decoupling Capacitor is Required.

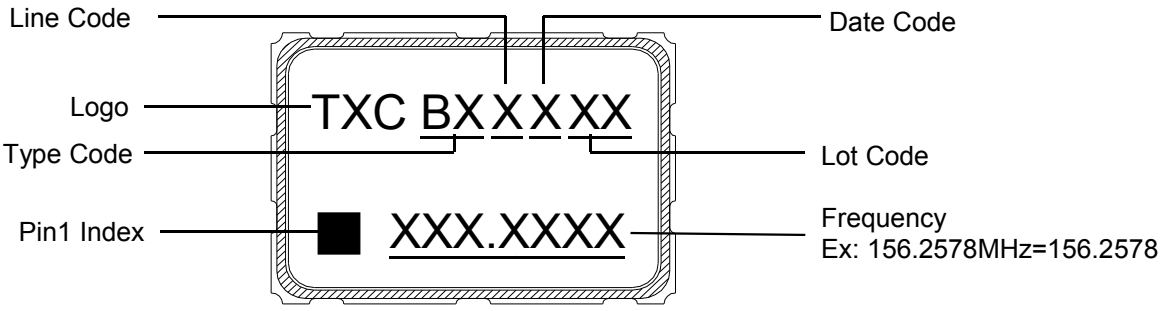
※ Pad dimension tolerance ±0.2 mm

SUGGESTED REFLOW PROFILE

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



MARKING



DATE CODE

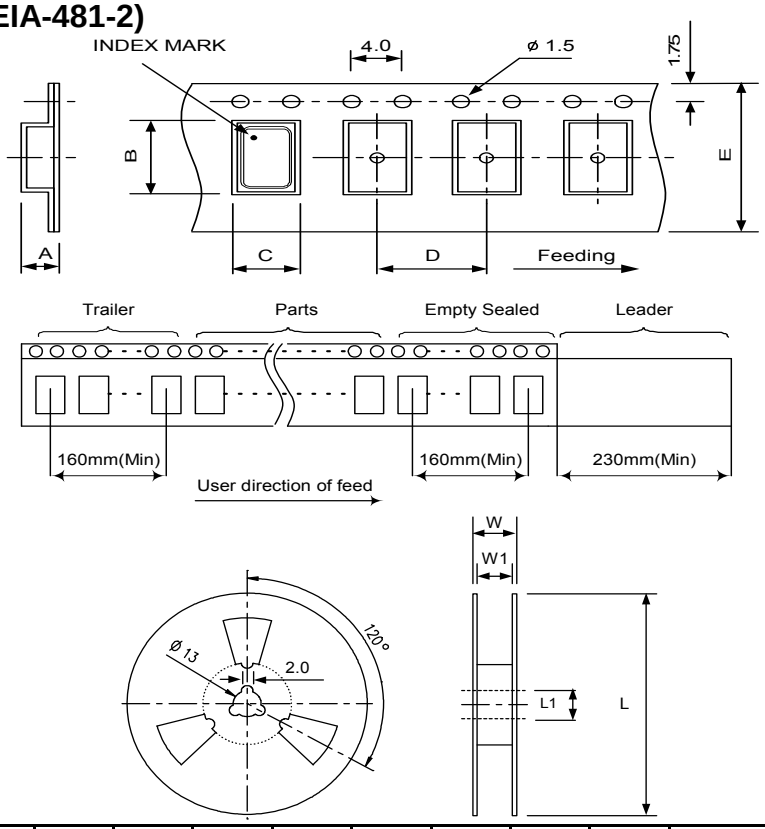
YEAR \ MONTH				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

* This date code will be cycled every four years.

TYPE CODE

Oscillation mode	Fundamental	3rd Overtone	PLL	Multiplier
Code	BE	BF	BG	BH

PACKING : (EIA-481-2)



Unit: mm

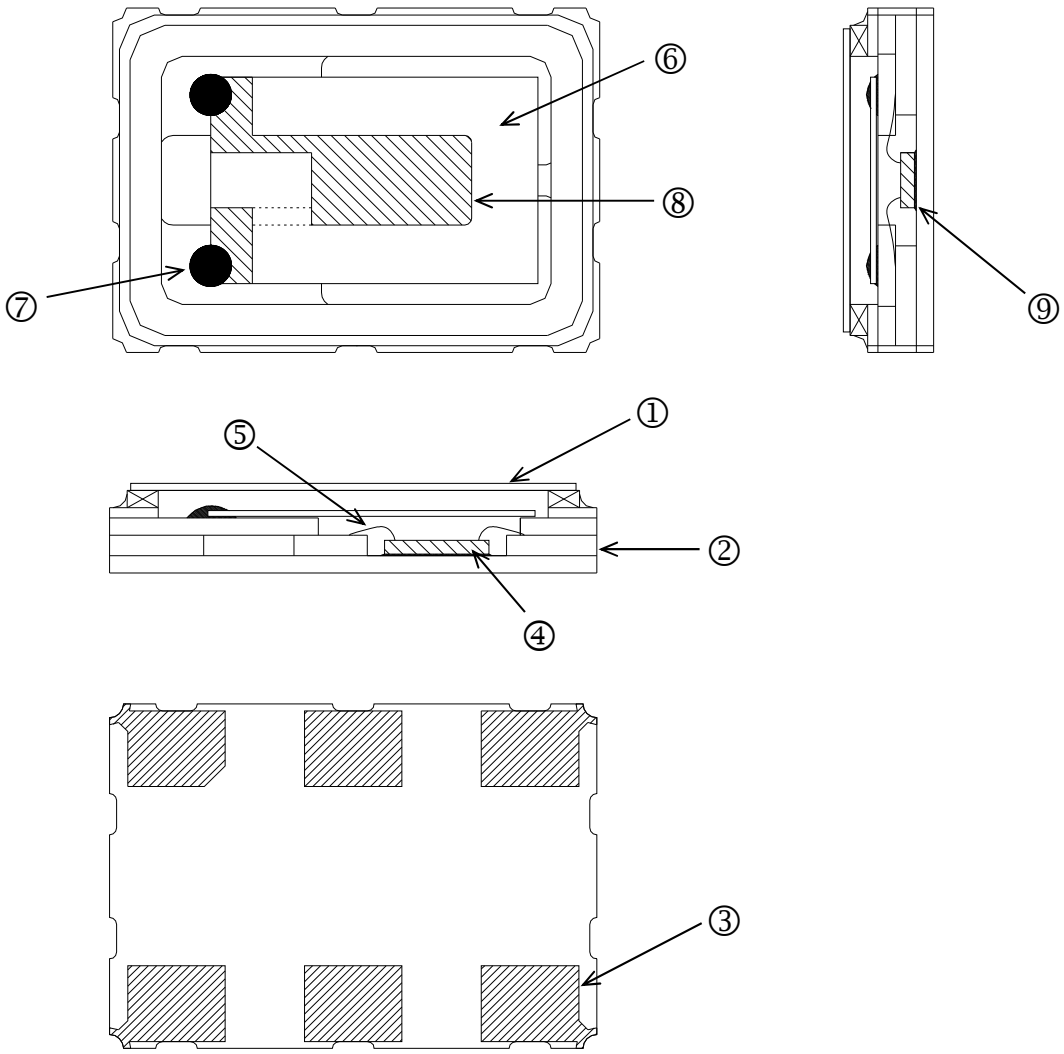
DIMENSIONS	A	B	C	D	E	L	L1	W	W1	Standard Reel Quantity is 1,000 pcs per reel
	2.00	7.90	5.45	8.00	16.0	180.0	13.0	20.5	16.0	

WEIGHT

0.149±0.001 g/pcs

STRUCTURE ILLUSTRATION

Crystal Enclosure Seal: Seam Welding
Crystal Enclosure Medium: Nitrogen



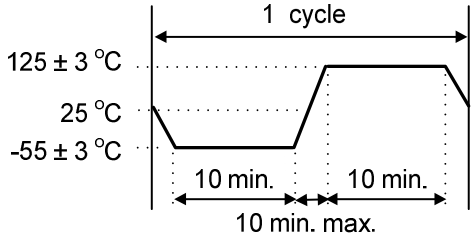
No.	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar(Fe-Ni-Co)	-
2	Base(Package)	Ceramic (Al_2O_3)	-
3	Pad	Au	Tungsten Metalize + Ni Plating + Au Plating
4	IC Chip	Si	-
5	Bonding Wire	Au	-
6	Crystal Blank	SiO_2	-
7	Conductive Adhesive	Ag	Silicon Resin
8	Electrode	Noble Metal	-
9	Conductive Adhesive	Ag	Epoxy Resin

■ RELIABILITY SPECIFICATIONS

1. Mechanical Endurance

No.	Test Item	Test Methods	REF. DOC
1.1	Drop Test	75 cm height, fall freely onto concrete floor 3 times.	JIS C6701
1.2	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
1.3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm Sweep time 20 minutes Perpendicular axes each test 4 hours (Total test time 12 hrs)	MIL-STD-883E
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector. Test Pressure: 2Kg / cm^2	MIL-STD-883E
1.5	Fine Leak	Pre-condition - Helium Bomging 4.5 Kgf / cm^2 for 2 hrs Tested by mass-spectrumeter	MIL-STD-883E
1.6	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
2.1	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
2.2	High Temp. Storage	+125 ℃ ± 3 ℃ for 1000 hours	MIL-STD-883E
2.3	Low Temp. Storage	-40 ℃ ± 3 ℃ for 1000 hours	
2.4	Thermal Shock (Air to Air)	Total 100 cycles of the following temperature cycle 	MIL-STD-883E
2.5	Pressure Cooker Test	120 ± 3℃, RH100%, 2 bar, for 240 hours	EIA-JESD22
2.6	High Temp & Humidity	85℃ ± 3℃, RH 85% , 1000 hours	EIA-JESD22
2.7	Aging	85℃ ± 3℃, Voltage input by specification, 1000 Hrs	EIA-JESD22