

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD CMOS VCXO 5.0*3.2

NOMINAL FREQ. : 50.MHz

TXC P/N : CR50000001

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):

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

RoHS Compliant

PRODUCT SPECIFICATION SHEET

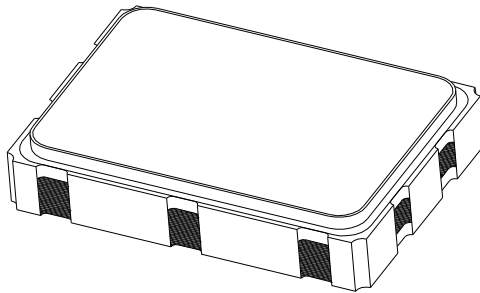
CUSTOMER : _____

PRODUCT TYPE : SMD CMOS VCXO 5.0*3.2

NOMINAL FREQ. : 50.MHz

TXC P/N : CR50000001

REVISION : A1



PE/RD	QA	MFG
2011/6/7	6/10/11	6.14.

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 CMOS VCXO 5.0*3.2

P/N: CR50000001

REVISION: A1

<u>Rev</u>	<u>Revise page</u>	<u>Revise contents</u>	<u>Date</u>	<u>Ref.No.</u>	<u>Reviser</u>
A1	N/A	Initial released	2011/6/7	N/A	Cheese Chiang

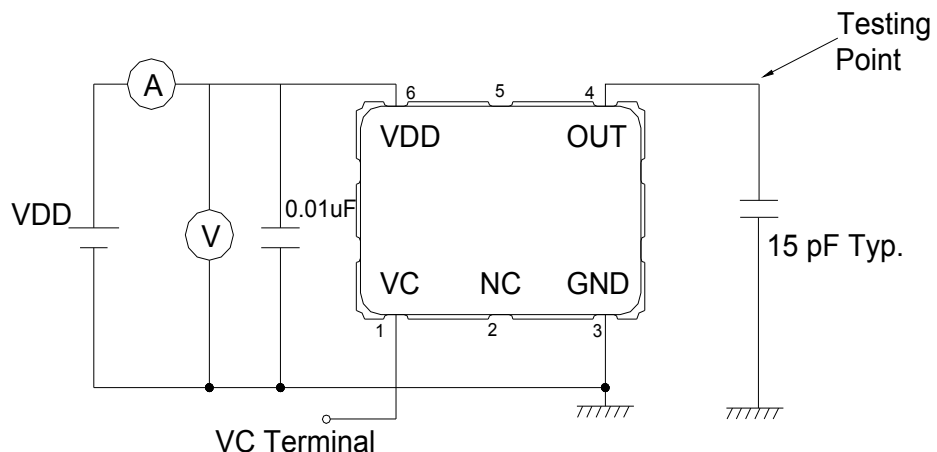
ELECTRICAL SPECIFICATIONS

Item	Parameters	Condition	Electrical Specifications			
			MIN	TYP	MAX	UNITS
1	Nominal Frequency		50.000000			MHz
2	Oscillation Mode		Fundamental			
3	Operating Temperature		-10	-	70	°C
4	Storage Temperature		-55	-	125	°C
5	Frequency Stability	Note1	-	-	±30	ppm
6	Supply Voltage (+3.3 V)		2.97	3.30	3.63	V
7	Current Consumption		-	-	30	mA
8	Standby Function	Internal Pull Up	NA			
9	Output Type		CMOS			
10	Output Load		15pF			
11	Output Voltage High +25 °C		0.9VDD	-	-	V
12	Output Voltage Low +25 °C		-	-	0.1VDD	V
13	Rise Time	10%~90% Output Swing	-	-	5	nS
14	Fall Time	90%~10% Output Swing	-	-	5	nS
15	Symmetry or Duty Cycle		45	50	55	%
16	Jitter(12kHz - 20MHz BW),50MHz		-	-	1	ps(rms)
17	Phase Noise, fo = 50MHz 10 Hz offset 100 Hz offset 1k Hz offset 10k Hz offset 100k Hz offset 1M Hz offset 10M Hz offset			-70 -105 -130 -144 -150 -160 -160		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz
18	Start-up Time	To 90% of Final Amplitude	-	-	10	mS
19	Control Voltage (+3.3V)		0	-	3.3	V
20	Pull Range		±50	-	±100	ppm
21	Control Voltage Bandwidth (-3dB)		20	-	-	kHz
22	VC Pin Input Impedance		2	5	-	MΩ
23	Linearity		-	-	10	%

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

Note 2 The standard testing environment except temperature test is 25±5°C, 40%~70% relative humidity.

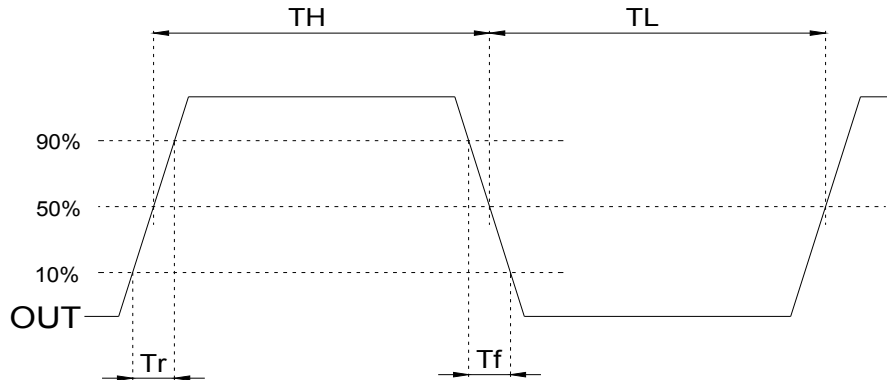
TESTING CIRCUIT



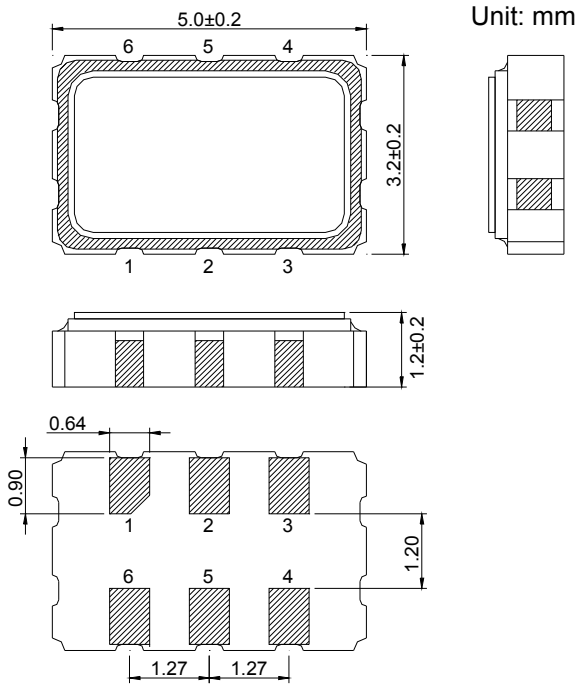
Testing Circuit Note:

- 1) Above testing circuits cover all the specifications 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

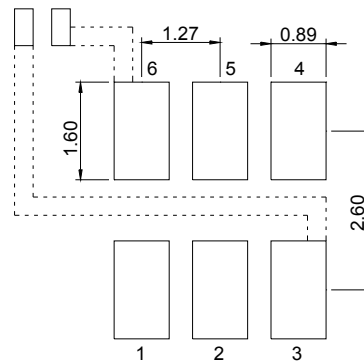


Unit: mm

Pin Function:

- 1. VC
- 2. NC
- 3. GND
- 4. OUT
- 5. NC
- 6. VDD

Land Pattern:

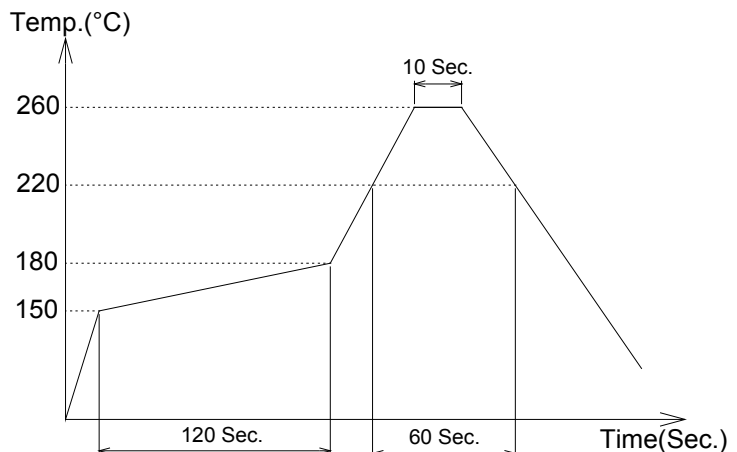


※ Pad dimension tolerance ±0.2 mm

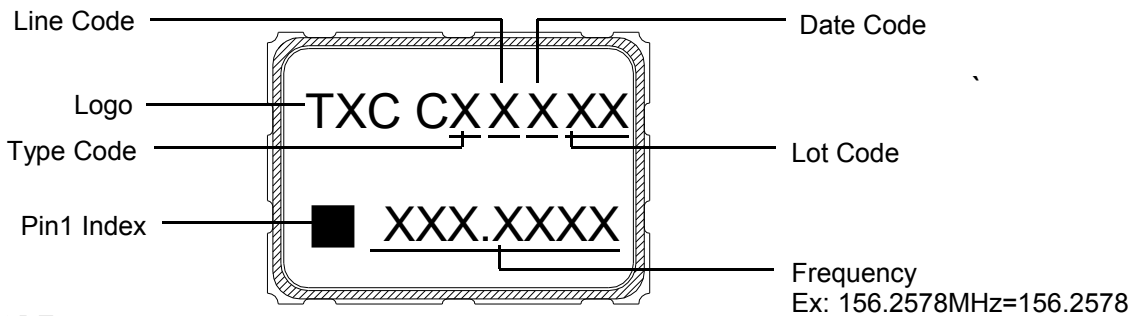
※ Power Supply Decoupling Capacitor is Required.

SUGGESTED REFLOW PROFILE

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



MARKING



DATE CODE

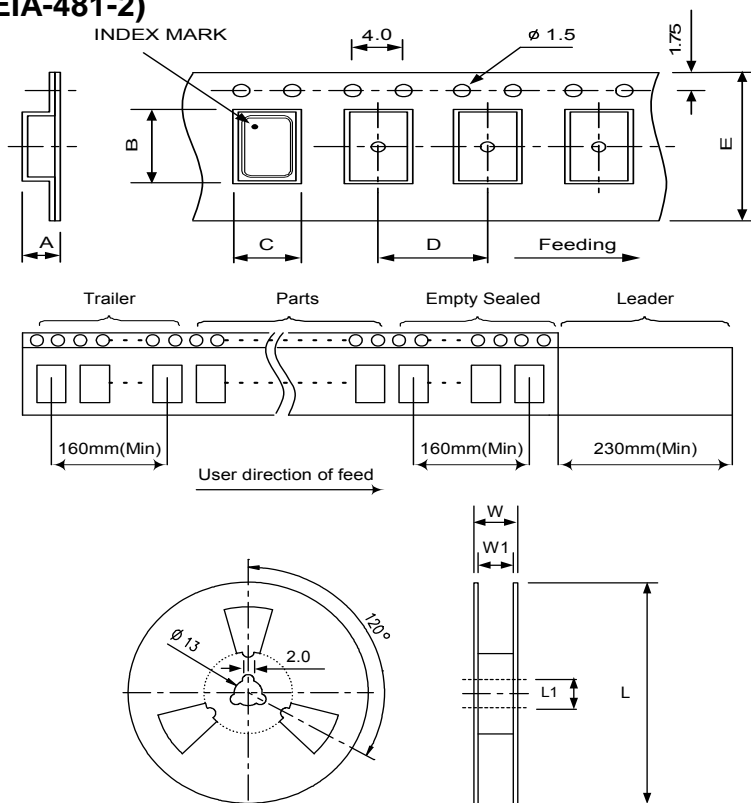
YEAR \ MONTH				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

* This date code will be cycled every four years.

TYPE CODE

Oscillation mode	Fundamental	PLL	Multiplier
Code	CR	-	-

PACKING : (EIA-481-2)



Unit: mm

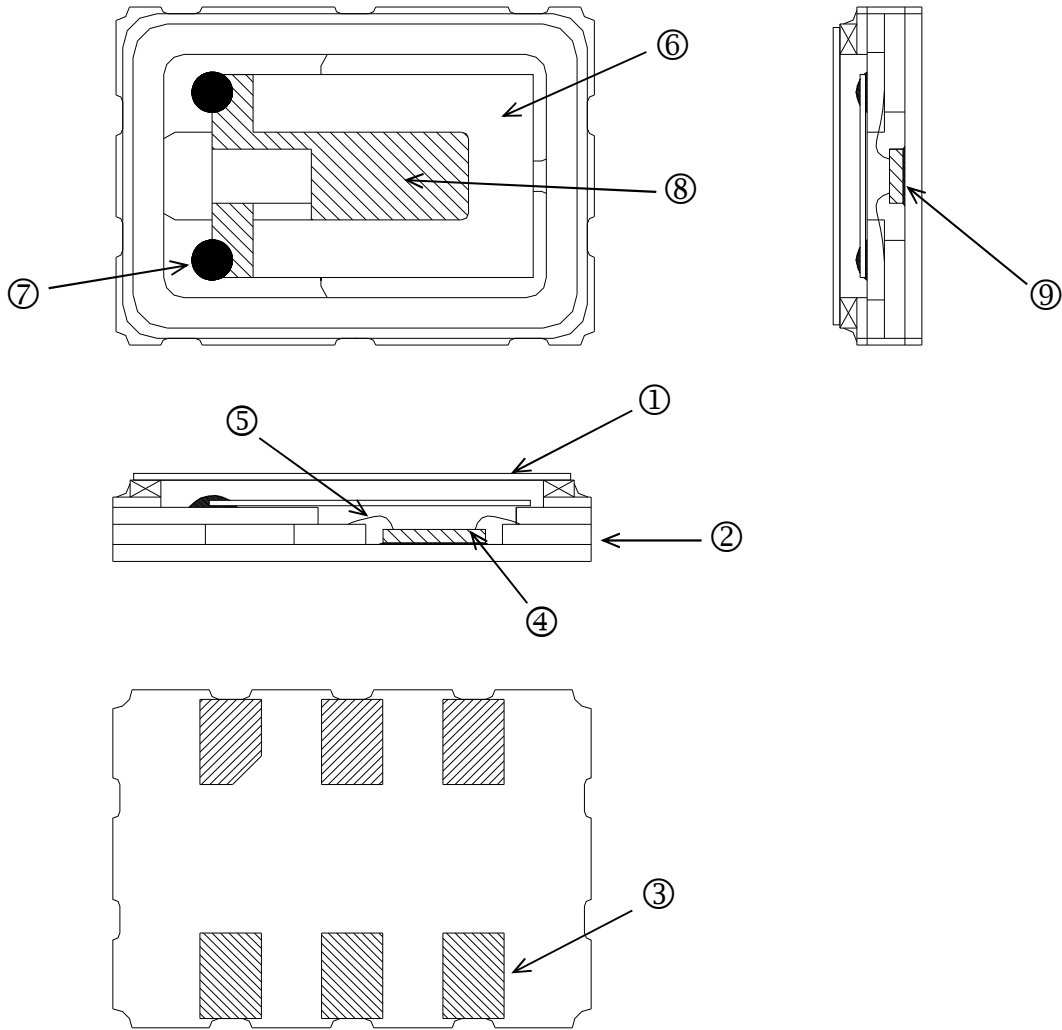
DIMENSIONS	A	B	C	D	E	L	L1	W	W1	pcs / Reel (UNIT : mm)
	1.40	5.40	3.60	8.00	12.0	180.0	13.0	16.5	12.0	Standard Reel Quantity is 1,000 pcs per reel

WEIGHT

0.058±0.001 g/pcs

■ STRUCTURE ILLUSTRATION

Crystal Enclosure Seal: Seam Welding
 Crystal Enclosure Medium: Nitrogen



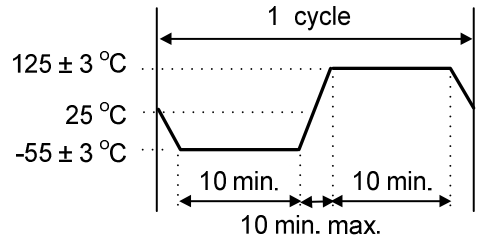
No.	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar(Fe-Ni-Co)	-
2	Base(Package)	Ceramic (Al ₂ O ₃)	-
3	Pad	Au	Tungsten Metalize + Ni Plating + Au Plating
4	IC Chip	Si	-
5	Bonding Wire	Au	-
6	Crystal Blank	SiO ₂	-
7	Conductive Adhesive	Ag	Silicon Resin
8	Electrode	Noble Metal	-
9	Conductive Adhesive	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 Bombing 4.5 Kgf / cm ² for 2 hrs Tested by mass-spectrometer	MIL-STD-883E
1.6	Solderability	Temperature 245 °C ± 5°C 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 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C Test time 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+125 °C ± 3 °C for 1000 hours	MIL-STD-883E
2.3	Low Temp. Storage	-40 °C ± 3 °C 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°C, RH100%, 2 bar, for 240 hours	JESD22-A102-C
2.6	High Temp & Humidity	85°C ± 3°C, RH 85% , 1000 hours	JIS C5023
2.7	Aging	85°C ± 3°C, Voltage input by specification, 1000 Hrs	JIS C6701