SHOULDER

RoHS Compliant | Pb Free

SHOULDER ELECTRONICS LIMITED

SPECIFICATION FOR APPROVAL

D A T E : 2012-02-21

CUSTOMER	
PRODUCT TYPE	**3225 TCXO(2.8V -30/85℃ ±0.5ppm 1.2Tmax)**
NOMINAL FREQ.	**16.368000 MHz**
CUSTOMER P/N	**N/A**
SHOULDER P/N	EX1202-A026(3225TCXO16.368)

[USER]

CHECK	**CHECK**	**APPROVAL**
20 . . .	**20 . . .**	**20 . . .**
EXPIRATION DATE	**20 . . .**	

[SHOULDER]

CHECK	**CHECK**	**APPROVAL**
LEO	YORK	PERCY
20 . . .	**20 . . .**	**20 . . .**

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Part No.		SER No.		Page	1/8

REVISIONS HISTORY

Revision No.	Date	Customer Receipt Date	Content	Remark
IR	2012-02-21		First Edition	

Part No.		SER No.		Page	2/8

SCOPE

This specification is for SMD TCXO(Temperature Compensated Crystal Oscillator).

APPLICATION STANDARDS

MIL-STD-883.

ELECTRICAL SPECIFICATIONS

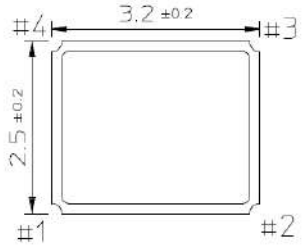
Parameters		Electrical Specifications			
		MIN	TYP	MAX	UNITS
Frequency(Fo) ref: 25℃			16.368000		MHz
Frequency Stability	Vs. Temperature Range	-0.5		+0.5	ppm
	Vs. Supply Voltage(±5%)	-0.1		+0.1	ppm
	Vs. Load(±10%)	-0.1		+0.1	ppm
	Vs. Aging(at 25℃)	-1.0		+1.0	ppm/year
Frequency Tolerence	Initial Tolerance (at 25℃)	-0.5		+0.5	ppm
	After 2 Times Reflow (at 25℃)	-1.0		+1.0	ppm
Operating Temperaue Range		-30		85	℃
Storage Temperature Range		-40		85	℃
Supply Voltage			2.8		VDC
Current Consumption				1.5	mA
Output Voltage Level		0.8			Vp-p
Output Waveform			Clipped Sinewave		
Output Load			10kΩ//10pF		
Slope (1 Frequency reading for every 2℃ @-30 to 85℃)		-1.0		+1.0	ppm/℃
Short term stability (Tau=1s)				1	ppb
Start-up Time(90% of Vp-p)				2.0	mS
Duty Cycle		40		60	%
Phase Noise	10Hz Carrier Offset		-85		dBc/Hz
	100Hz Carrier Offset		-115		dBc/Hz
	1KHz Carrier Offset		-135		dBc/Hz
	10KHz Carrier Offset		-145		dBc/Hz
Remark					

SHOULDER

Part No.		SER No.		Page	3/8

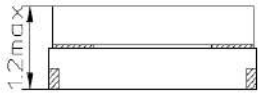
DIMENSIONS(UNIT: mm)

Top View

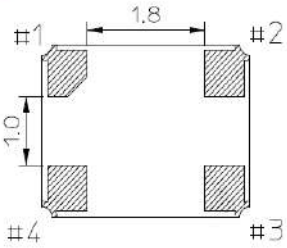


No.	Connection
#1	GND
#2	GND
#3	Output
#4	Vcc

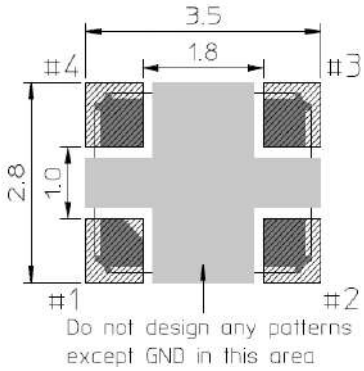
Side View



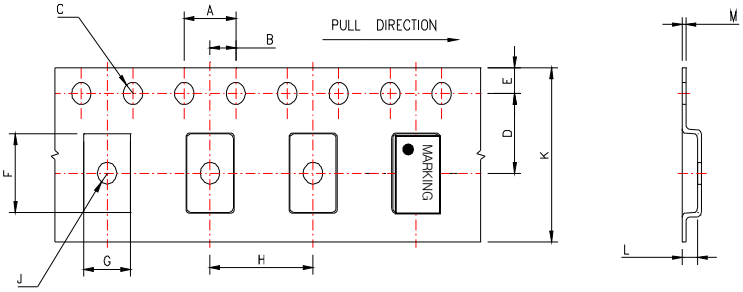
Bottom View

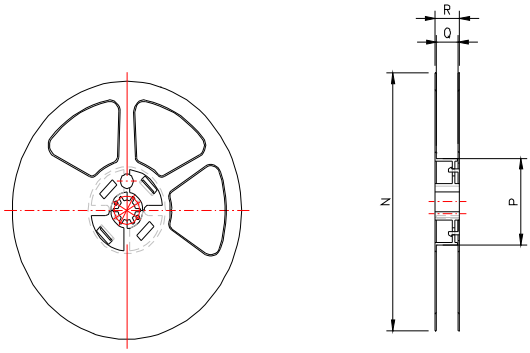


※ **Recommended Land Pattern (Top View)**



PACKING(UNIT: mm)



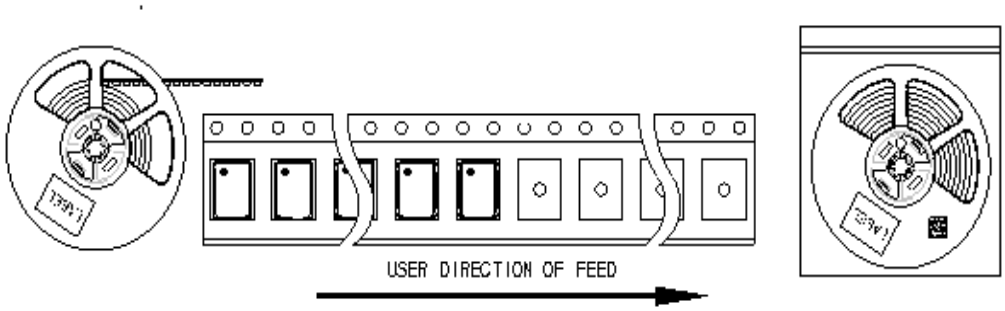


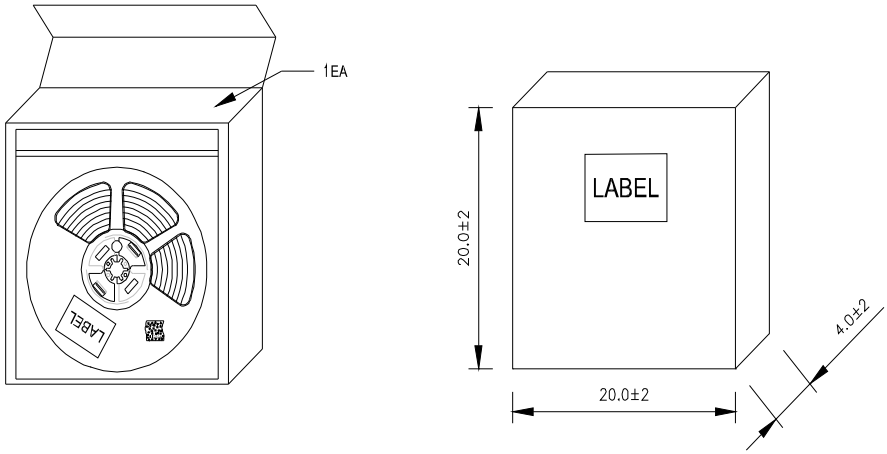
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Q'TY
SIZE	8.00	2.00	ϕ1.50	5.50	1.75	5.35	3.50	8.00	ϕ1.50	12.0	1.50	0.29	ϕ178	ϕ60	13.00	16.00	3000

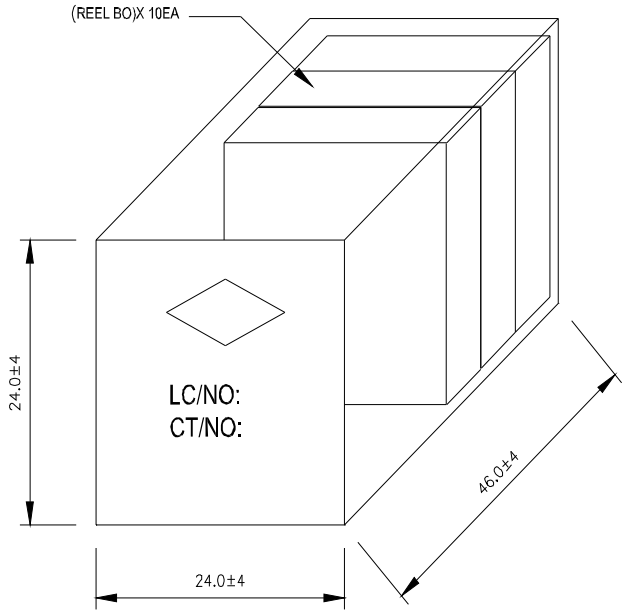
1. TOP TAPE START 250mm MINIMUM LEADER AND 160mm EMPTY POCKETS
2. END TAPE 250mm MINIMUM EMPTY POCKETS

Part No.				Page	4/8

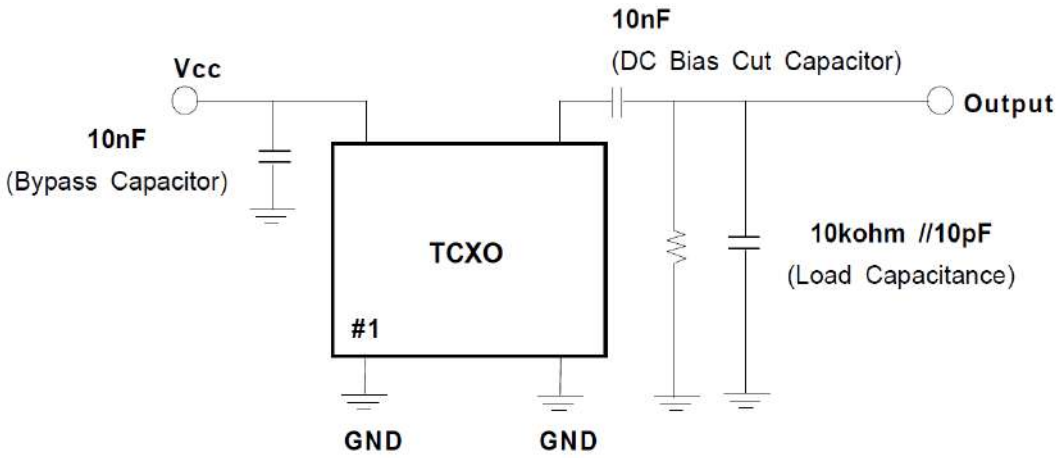
OUTBOX DIMENSIONS(CM)







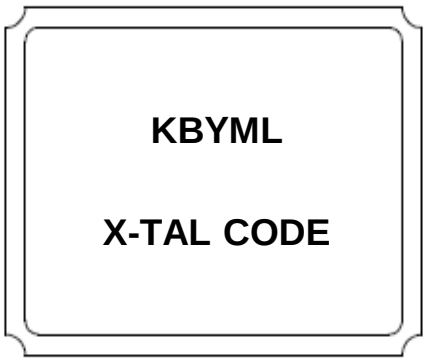
TEST DIAGRAM



※ Note

1. Be cautious of TCXO pin connection.
2. Load Capacitance includes probe and test JIG capacitance.

MARKING



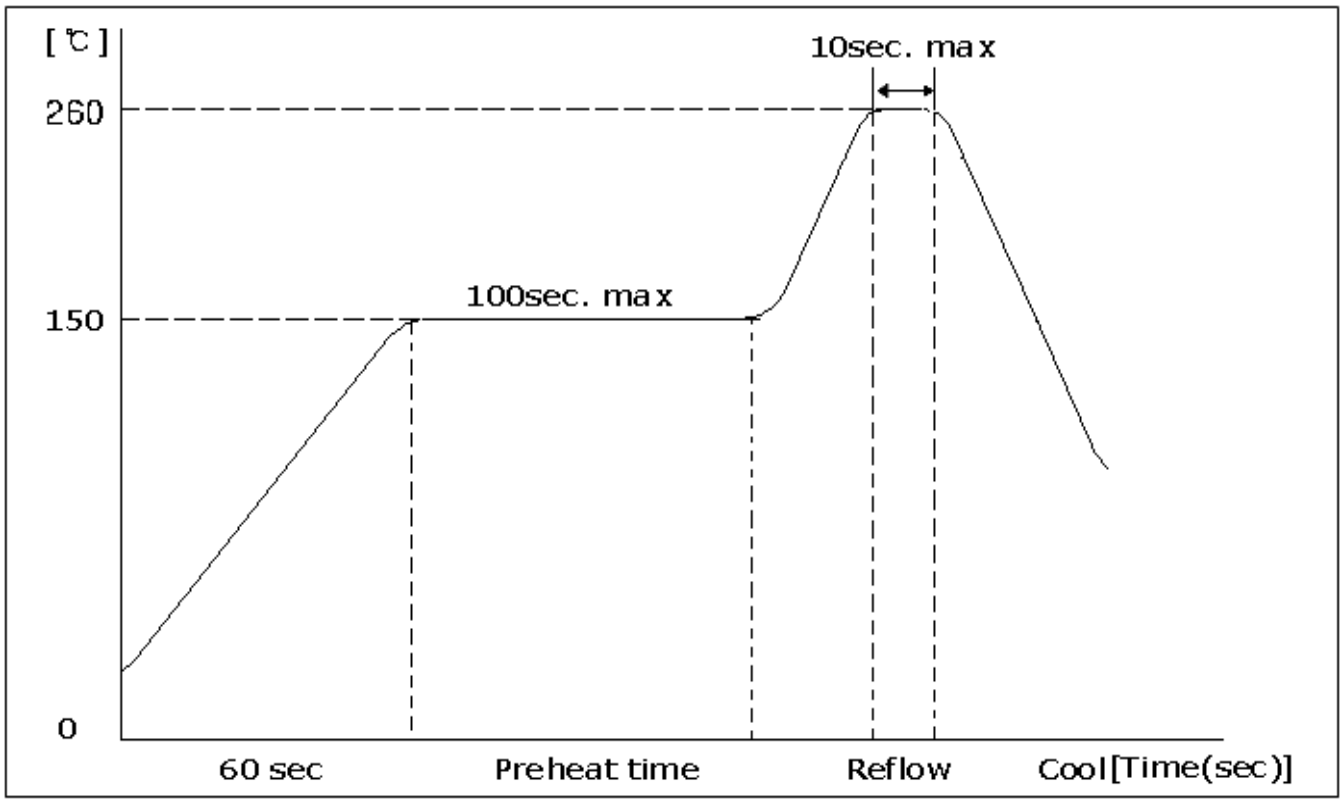
1. K : Frequency Code
2. B : Control Code
3. Y : Year
4. M : Month
5. L : Date

Part No.				Page	

RELIABILITY SPECIFICATION

NO	ITEMS	CONDITIONS
1	Solderability	Solder dip at 260℃ for 5 seconds
2	Vibration	20 - 2000-20Hz , 1.55mm total amplitude, each directions(X,Y,Z)/3times, 4min
3	Drop	3 times drop onto hard wooden board from 75cm
4	High Temp. High Humidity	+45℃±2℃, RH=90%±5% 96 hours minimum
5	High Tempe. Storage	+100℃±5℃, 100 hours minimum
6	Low Tempe. Storage	-55℃±5℃, 100 hours minimum
7	Thermal Shock	-25℃±5℃, +85℃±5℃, 15 minutes each 10 cycles
8	Aging	+125℃±5℃, 24 hours minimum
9	Reflow	+260℃ max, 10sec max

REFLOW SPECIFICATION



APPLICATION GUIDELINES

Correct application and strict adherence to the important information listed below, will be ensure optimum performance of the crystal oscillator.

SHOCK RESISTANCE

(Drop test consist of three drops onto a hard wooden board from a height of 75cm)
Nevertheless, under some condition, crystal products may be damaged by drops or Shocks during mounting.
It is important, therefore, to run mounting machines as smoothly as possible to Prevent under shocks. Please review conditions prior to using a mounting machine.

VIBRATION RESISTANCE

Mechanical vibration of a piezo buzzer could cause frequency and amplitude Change to the output frequency. It is advisable to use cushion or cutting PCB, if You mount on same PCB.

SOLDERING CONDITION

Please keep the conditions of "Reflow diagram"

STORAGE

We recommend storing products at +15℃ to +35℃ and 25% R.H to 75% R.H