HD SHOULDER

RoHS Compliant | Pb Free

SHOULDER ELECTRONICS LIMITED

SPECIFICATION FOR APPROVAL

D A T E : 2012-08-02

CUSTOMER	
PRODUCT TYPE	**3225 TCXO(3.0V -30/85℃ ±0.5ppm 1.2Tmax)**
NOMINAL FREQ.	**16.367667 MHz**
CUSTOMER P/N	**N/A**
SHOULDER P/N	**EX1106-S543(3225TCXO16.367667)**

[USER]

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

[SHOULDER]

CHECK	CHECK	APPROVAL
LEO	YORK	PERCY
2012 . 08 . 02 .	**2012 . 08 . 02 .**	**2012 . 08 . 02 .**

Shoulder Electronics Limited

Add：Headquarter:No. 115, Gaoyun road, Binhu Economic & Technology Development Area, Wuxi, China

Tel：0510-85629111 Fax：0510-85627222 Post code：214124

E-mail：Info@shoulder.cn Web：www.shoulder.cn

ShenZhen Branch

Add：ROOM505,5D CD Bldg.Tian Fa Building,Tian An Cyber park,Fu Tian Dist,ShenZhen,China

Tel：0755-88291770 0755-88353052 88353815 Fax：0755-88352771

IHD 好达 SHOULDER

Part No.		SER No.		Page	1/8

REVISIONS HISTORY

Revision No.	Date	Customer Receipt Date	Content	Remark
IR	2012-08-02		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.

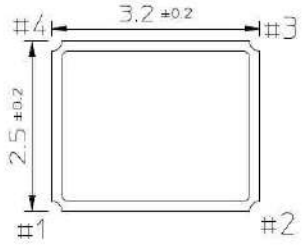
ELECTRICAL SPECIFICATIONS

Parameters		Electrical Specifications			
		MIN	TYP	MAX	UNITS
Frequency(Fo) ref: 25℃			16.367667		MHz
Frequency Tolerence	Initial Tolerance (at 25℃)	-2.0		+2.0	ppm
Frequency Stability	Vs. Temperature Range	-0.5		+0.5	ppm
	Vs. Supply Voltage(±5%)	-0.2		+0.2	ppm
	Vs. Load(±5%)	-0.3		+0.3	ppm
	Vs. Aging(at 25℃)	-1.0		+1.0	ppm/year
Operating Temperaue Range		-30		85	℃
Storage Temperature Range		-40		85	℃
Supply Voltage			3.0		VDC
Current Consumption				1.5	mA
Output Voltage Level		0.8			Vp-p
Output Waveform			Clipped Sinewave		
Output Load			10kΩ//10pF		
Start-up Time(90% of Vp-p)				3.0	mS
Duty Cycle		40		60	%
Phase Noise	10Hz Carrier Offset		-86		dBc/Hz
	100Hz Carrier Offset		-115		dBc/Hz
	1KHz Carrier Offset		-138		dBc/Hz
	10KHz Carrier Offset		-146		dBc/Hz
Remark					

Part No.		SER No.		Page	3/8

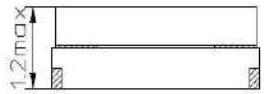
DIMENSIONS(UNIT: mm)

Top View

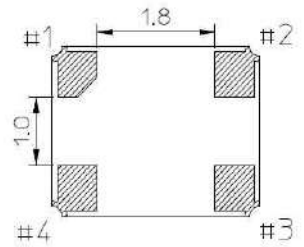


No.	Connection
#1	GND
#2	GND
#3	Output
#4	Vcc

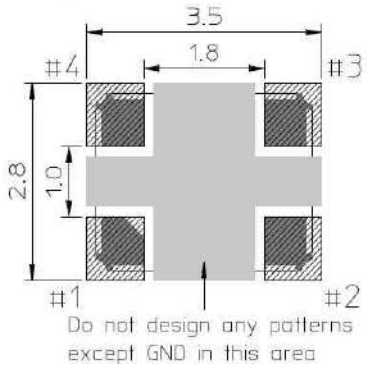
Side View



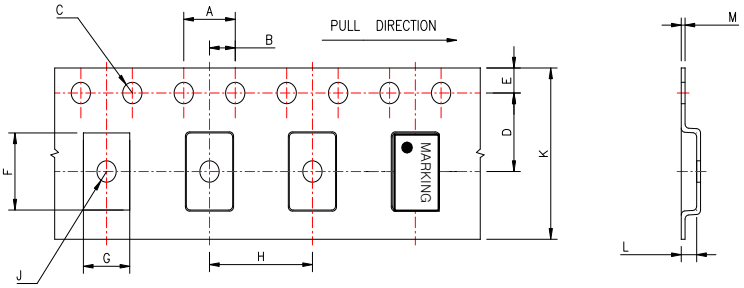
Bottom View

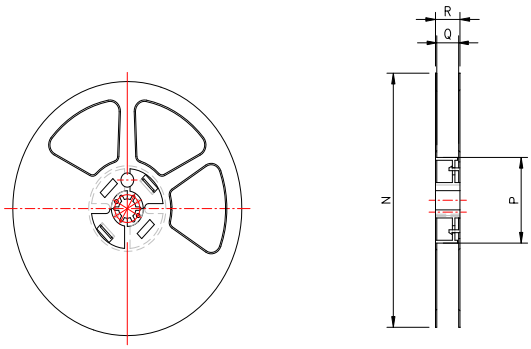


※ Recommended Land Pattern (Top View)



PACKING(UNIT: mm)





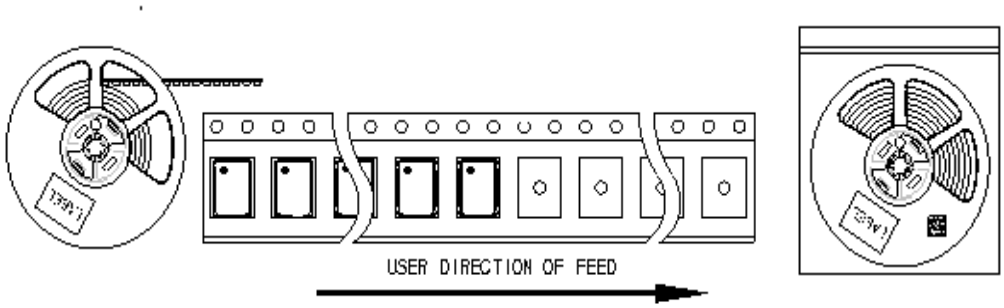
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Q'TY
SIZE	8.00	2.00	ϕ1.50	5.50	1.75	5.35	3.50	8.00	ϕ1.50	12.0	1.50	0.29	ϕ178	ϕ60	13.00	16.00	3000

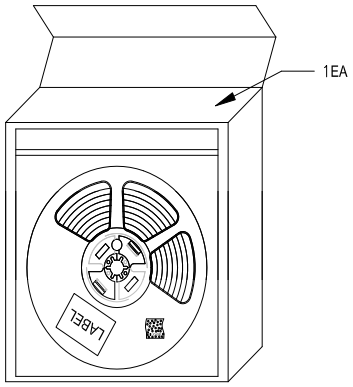
1. TOP TAPE START 250mm MINIMUM LEADER AND 160mm EMPTY POCKETS
2. END TAPE 250mm MINIMUM EMPTY POCKETS

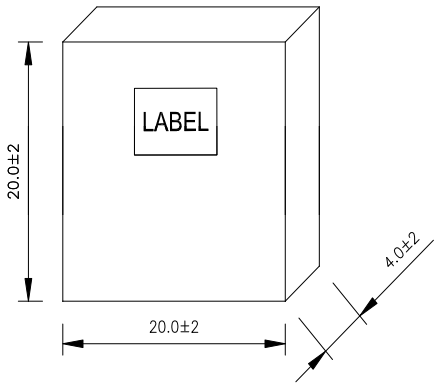
SHOULDER

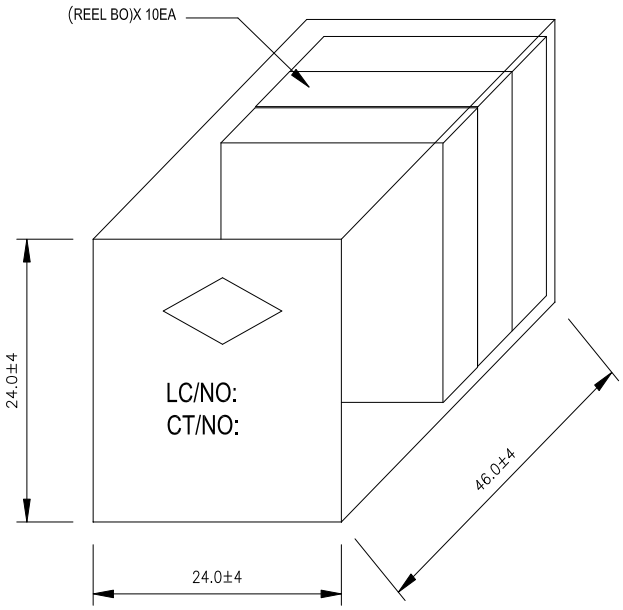
Part No.		SER No.		Page	4/8

OUTBOX DIMENSIONS(CM)

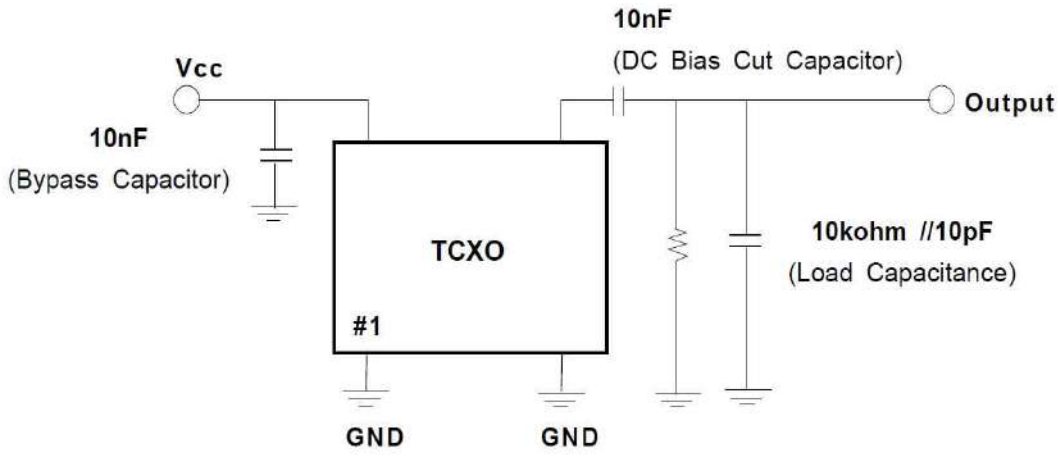








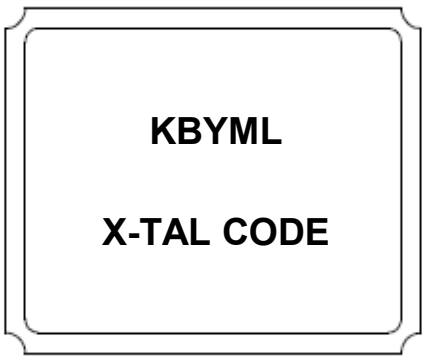
TEST DIAGRAM



※ Note

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

MARKING



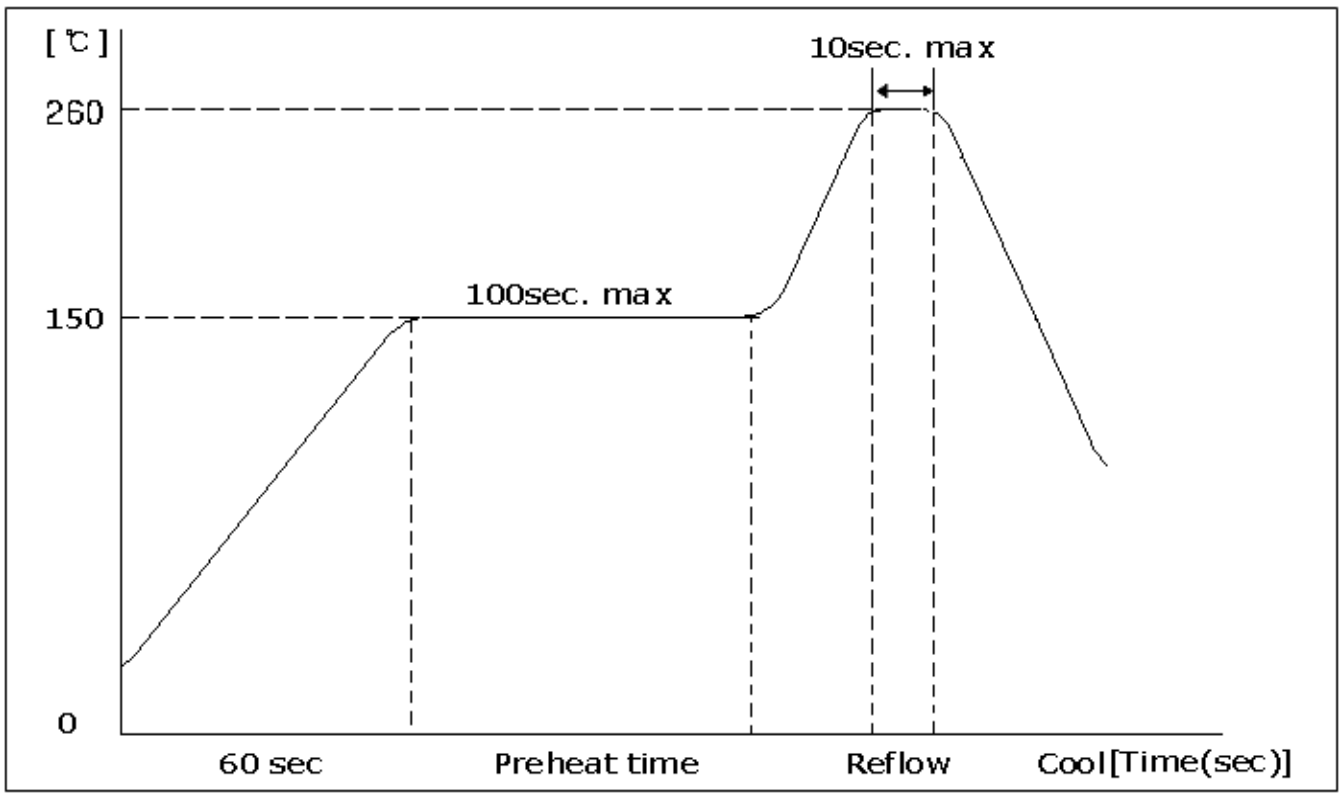
1. K : Frequency Code
2. B : Control Code
3. Y : Year
4. M : Month
5. L : Date

Part No.		SER No.		Page	6/8

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

Shoulder's all products are designed to endure physical shocks.
(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

RoHS

Shoulder's all products are complies with all relevant international regulations concerning he substances with environmental impacts.