研騰國際企業股份有限公司

YANNIS ELECTRONICS CO., LTD.

http://www.fox-yannis.com

☑	Taiwan Office	8F.-6, No.237, Sec. 1, Datong Rd., Xizhi Dist., New Taipei City 22161, Taiwan (R.O.C.) TEL: 02-8642-2658 FAX: 02-8642-2818 E-Mail : YANNIS@FOX-YANNIS.COM
☐	China Office	
☐		

Specification Sheet For Approval	Series No:
	Date : 2020/11/27

☐ Quartz Crystal ☑ Quartz Crystal Oscillator ☐ OCXO ☐ VCXO

☐ M.C.F ☐ TCXO / VCTCXO ☐ Others _ _ _ _ _ _ _ _ _ _ _ _ _ _

Customer	
Customer P/N	
Product Type	Crystal --- (SMD --- 2.5 * 2.0 * 0.9 mm)
Nominal Frequency	24.000 MHz
Yannis P/N	Y24.000M-S2520ZDT

Customer
Approved By
Customer Engineer :
Date :
Customer QC :
Date :

Vender	
Confirmed By	
Yannis	Engineer : *Peter Huang*
Date :	2020/11/27
Yannis	QC : *Andy Tsai*
Date :	2020/11/27

Specification Sheet Contents :

- ☑ Specifications Sheet
- ☑ Package Dimension
- ☑ Crystal / Oscillator Introduction
- ☑ MSL level1
- ☐ FQC Test Report
- ☐ Temperature Stability Test Report
- ☑ Test Data Of Reliability
- ☑ Lead Free Approved

YANNIS ELECTRONICS CO., LTD.

Peggy Hsiao

Authorized Signature

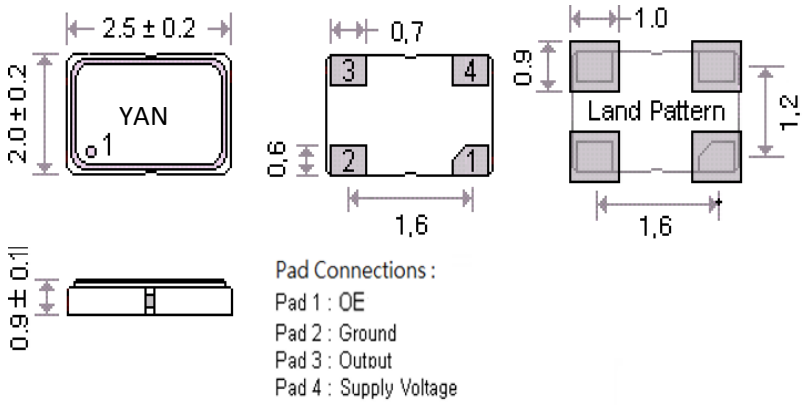
Electrical Specification

Series No. :

Date : 2020/11/27

	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typical	Max.	Unit	
1	Yannis Part No.			-			Y24.000M-S2520ZDT
2	Nominal Frequency	FL		24.000000		MHz	
3	Holder Type			-			2.5 * 2.0 * 0.9 mm , 4pads
4	Output Wave Form			-			CMOS
5	Input Voltage	V_{DD}		3.3		V	D.C ± 5 %
6	Output Voltage High " 1 "	Voh	2.97			V	90% V_{DD}
7	Output Voltage Low " 0 "	VoL			0.33	V	10% V_{DD}
8	Frequency Stability	△f / fo	-25		25	ppm	Over Operating Temperature
9	Current Consumption	I_{DD}			15	mA	
10	Rise Time & Fall Time	Tr , Tf			10	n Sec.	10 % ←→ 90 % of waveform
11	Duty Cycle	tw / t	40		50	%	at 50 % waveform
12	Start -up Time	ST			10	m Sec.	
13	Load	CL			15	pF	
14	Operating Temperature	T_opr	-40		85	°C	
15	Storage Temperature	T_stg	-55		125	°C	
16	Aging	fa	-3		3	ppm	first year
17	OE Control on Pad 1	70% of V_{DD} (min.) to enable output.					
		30% of V_{DD} (max.) to disable output.					
18	Lead Free Approved Report	SGS REPORT					

Package Dimension (Unit : mm)



Marking

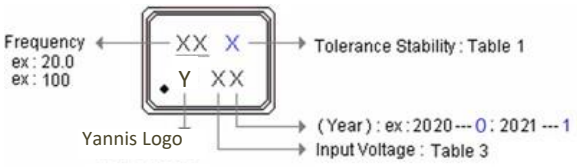


Table 1

-10°C ~ 70 °C	" A " ± 25ppm ; " B " ± 50ppm ; " C " ± 100ppm ;
	If non-standard please enter the desired stability after " C " , for example " C10 " : ± 10ppm
-40°C ~ 85 °C	" D " ± 25ppm ; " E " ± 50ppm ; " F " ± 100ppm ;
	If non-standard please enter the desired stability after " I " , for example " I10 " : ± 10ppm

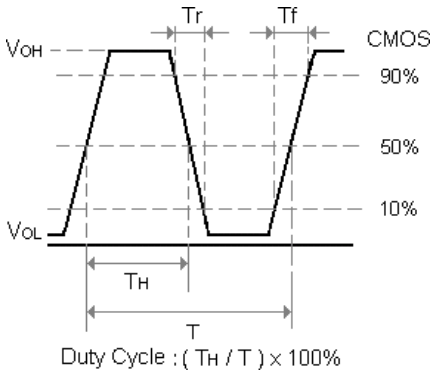
Table 2

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Code	A	B	C	D	E	F	G	H	I	J	K	L

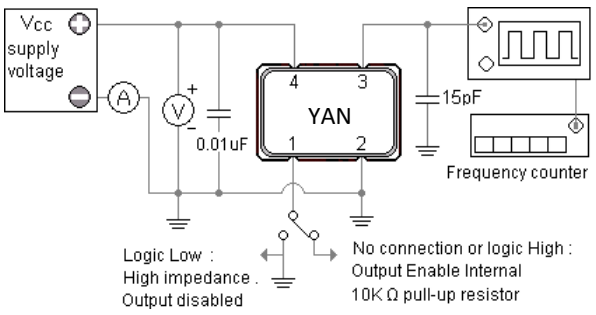
Table 3

Input Voltage	5.0 V	3.3 V	2.8 V	2.5 V	1.8 V	1.2 V	1.0 V
Enable / Disable	B	D	F	H	J	L	N

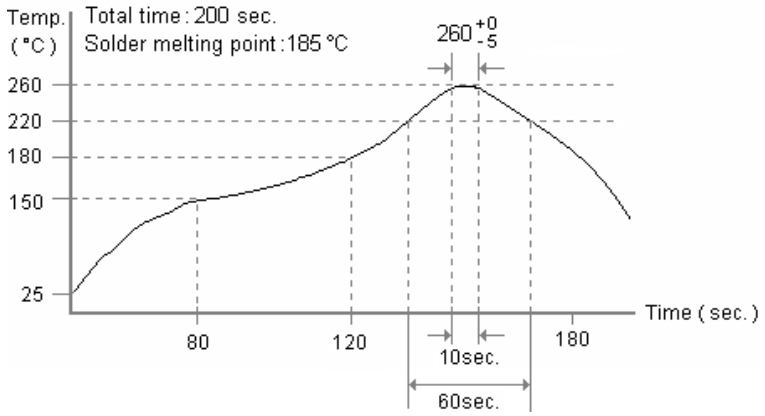
CMOS Waveform



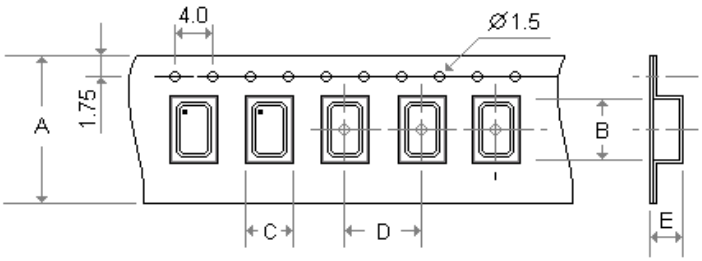
CMOS output wave test Circuit

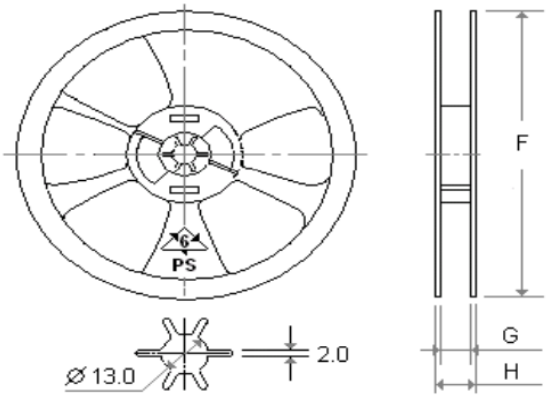


Recommended Temperature Profile For Reflow Process :



Emboss Taping & Reel Specification :





Dimensions : (Unit : mm)

A	B	C	D	E
8.0	2.7	2.2	4.0	1.2

F	G	H
180.0	9.0	12.0

Remark : 1. Standard reel quantity is 3000 pcs per reel.

2. 10 sprocket hold pitch cumulative tolerance is ± 0.1 mm.

3. E measured from a place on the inside bottom of the pocket to the top surface of the carrier.

Environmental Specification

1.Temperature Test			
*Temperature Cycling Test			
Conditions:	Steps of cycle	(1)At-55°C , 30minutes	(3)At+85°C , 30minutes
		(2)At+25°C , 10~15minutes	(4)At+25°C , 10~15minutes
	Number of	3 times	
Results:	Performance form of tested products must remain within specifications.		
*Thermal Shock Test			
Conditions:	Temperature T(H)+125°C ,T(L)-55°C		Duration of cycle 3 times
	Exposure time at temperature extremes 5minutes		
Results:	Performance form of tested products must remain within specifications.		
*Low Temperature Test			
Conditions:	Temperature -20°C±2°C		Duration of test 96hours
Results:	There Should be no stain on surface of products		
	Frequency and wave form of tested products must remain within specifications.		

2.Aging Test		
Conditions:	Temperature +85°C±2°C	Duration of test 96 hours
Results:	Deviation of frequency must be less than±3ppm	(+/-0.0003%)

3.Salt Spray Test		
Conditions	Temperature 35°C±2°C	Duration of test 48 hours
	NaCl 5%	

4.Humidity Test			
Conditions:	Temperature:+40°C+/-2°C	Relative humidity:90~95%	Duration of test:96 hours
Results:	Insulation resistance must be 500Mohm/100 minimum Vdc.		
	Resistance and wave form must remain within specification		

Mechanical Specification Sheet		
1.Vibration Test		
Conditions:	Frequency	10-55 Hz
	Amplitude	0.762 mm
	Sweep	1.0 minute
	Duration	2 hours
Results:	Performance form of tested products must remain within specifications.	
2.Drop Test		
Conditions:	Method of drop	Free drop
	Dropping floor	Hard wood board
	Height	75 cm
	Number of drops	3 times
Results:	Frequency and wave form of tested products must remain within specifications.	

Notice :

1 Yannis requires the copy of this specification returned with approved.

2 Any change to these specification have to be agreed by both parties and new revision of the specification will be issued .