



**ZHEJIANG A-CRYSTAL**  
ELECTRONIC TECHNOLOGY CO., LTD.



Issue	June 13, 2023
Rev.	1.0
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## CRYSTAL UNIT SPECIFICATIONS

客户批准 Customer Approval

(请批准后回签一份 Please Return A Copy With Approval)

Customer	
Customer P/N	
Product	CRYSTAL OSCILLATOR
Spec	POSC2016/1.500K~52.000M
A-Crystal P/N	AO4 Series

Drawn	Checked	Approved
<i>caogaobang</i>	<i>tanglong</i>	<i>huanqweilong</i>



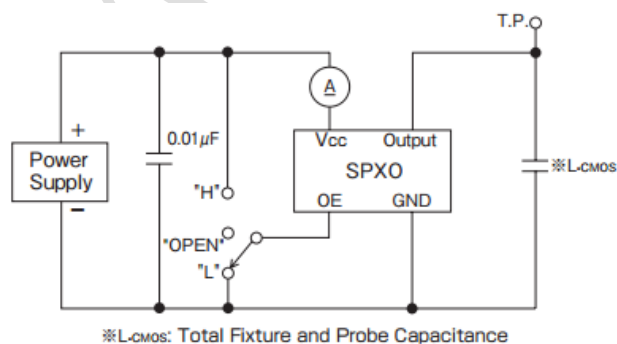
## 1. ELECTRICAL SPECIFICATIONS

### 1.1 Hold Type: POSC2016

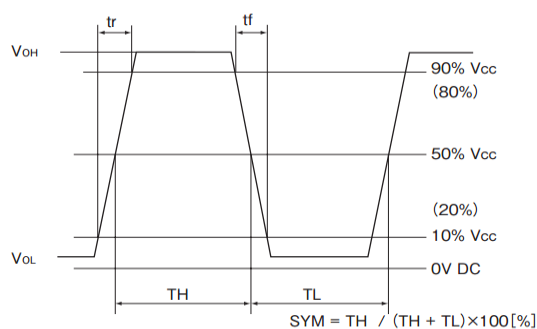
No.	Item	Symb.	Electrical Specification				Remark
			Min.	Type	Max.	Units	
1	Nominal Frequency	$F_0$	1.50K		52.000	MHz	
2	Frequency Stability		-20 -50		+20 +50	ppm	All condition*
3	Operating Temperature Range	TOPR	0 -40		+60 +85	°C	
4	Storage Temperature	TSTG	-55		+125	°C	
5	Power supply Voltage	$V_{DD}$	1.8	3.3	3.6	V	
6	Aging Per Year	$F_a$	-3		+3	ppm	First Year
7	Supply current	$I_c$			3.5	mA	
8	Output symmetry	Sym	45		55	%	
9	Rise time	$T_r$			5	ns	10%~90% $V_{DD}$
10	Fall time	$T_f$			5	ns	90%~10% $V_{DD}$
11	Output voltage	$V_{OH}$	90%			$V_{DD}$	
		$V_{OL}$			10%	$V_{DD}$	
12	Output load HCMOS LOAD				15	PF	
13	Start-up Time				2	mS	
14	Pin 1, tri-state function	pin 1=H or open.....output active at pin 3 pin 1=L.....high impedance at pin 3					
15	Package type	2.0*1.6*0.75					

All condition\*: Include 25deg C tolerance, operating temperature range , input voltage change, aging, load change, shock and vibration.

### 1.2 HCMOS Test Circuit



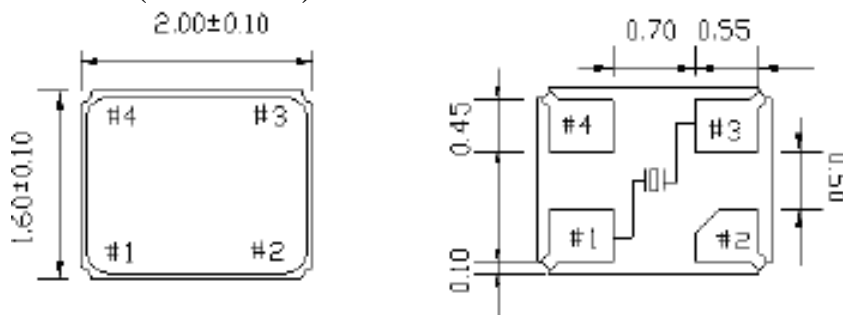
### 1.3 Hcmos Output Waveform



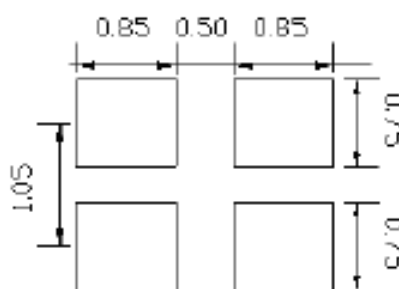


## 2. PRODUCT SIZE

### 2.1 Dimension (Unit: mm)



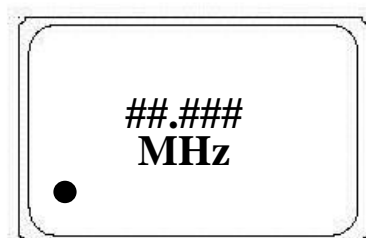
### Recommended Solder Pattern



Pin	Connection
1	Tri-state
2	GND
3	Output
4	V <sub>DD</sub>

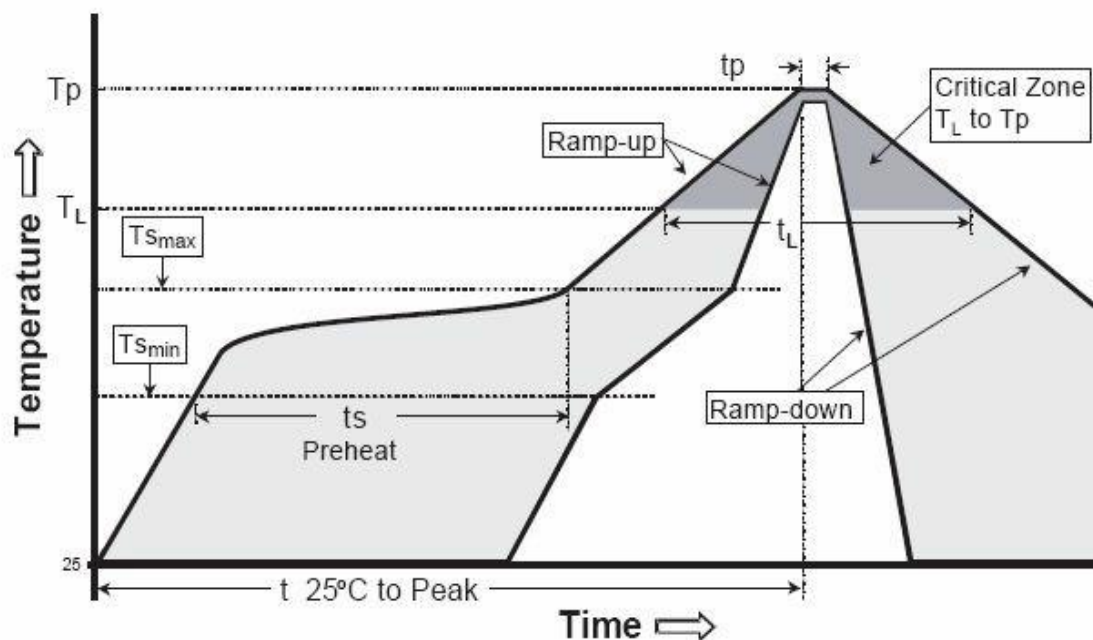
Note: 0.01uF bypass capacitor should be placed between VDD (pin 4) and GND (pin 20) to minimize power supply line noise.

### 2.2 Marking





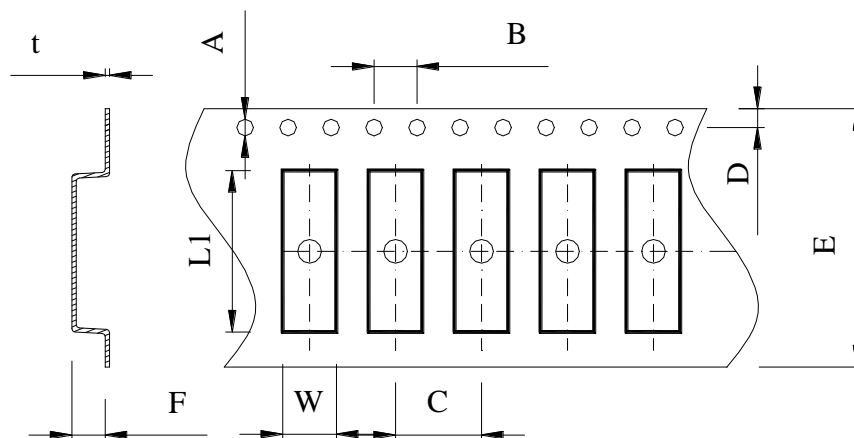
### 3. REFLOW PROFILES



$T_s = 200^{\circ}\text{C}/60 \sim 180\text{sec}$ ,  $T_L = 217^{\circ}\text{C}/60 \sim 150\text{sec}$ ,  $T_p = 260^{\circ}\text{C}/20 \sim 40\text{sec}$

### 4. PACKING

#### 4.1 Packing Method Sketch Map (Unit: mm)



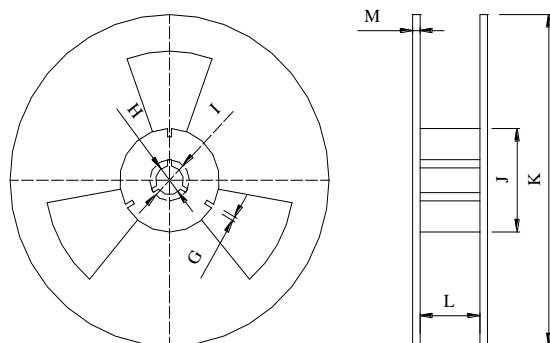
A	B	C	D	E	F	L1	W	t
1.50±0.1	4.0±0.1	4.0±0.1	1.75±0.1	8.0±0.2	1.3±0.1	2.2±0.1	1.8±0.1	0.25±0.05



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### 4.2 Reel Dimensions (Unit: mm)



G	H	I	J	K	L	M
2.0 ±0.5	13.0 ±0.5	21.0±0.5	Φ80 +1/-0	φ180 +0/-3	9.0 ±0.3	1.2 ±0.3

\*3000pcs/Reel

## 5. Products Code

### 5.1 SMD CRYSTAL OSCILLATORS

公司代码 浙江一晶	产品型号 (2位)	工作频率 (全频点位数)	负载电容 (1位字母)	调整频差 (1位字母)	温度频差 (1位字母)	工作温度 (1位字母)	其它
A-crystal Logo	Package	Nominal Frequency	Load Capacitance	Frequency Tolerating	Freq Temp Characteristics	Operating Temperature Range	Others
A	O4 (POSC2016)	4M=04000	Y=5.0V	01=5PPM	A=10PPM	1=0~50	Special
		12.000M=12000	A=3.3V	02=10PPM	B=15PPM	2=-10~60	
		32.768K=32768	M=3.0V	03=20PPM	C=20PPM	3=-10~70	
			C=2.5V	04=30PPM	D=25PPM	4=-20~70	
			D=1.8V	05=40PPM	E=30PPM	5=-30~85	
			B=2.8V	06=50PPM	F=50PPM	6=-40~85	
			Y=5.0V	07=100PPM	G=100PPM	7=-40~105	
						8=-40~125	