



ZHEJIANG A-CRYSTAL
ELECTRONIC TECHNOLOGY CO., LTD.



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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 RESONATORS
Spec	P2SBA/12.000~60.000MHz
A-Crystal P/N	AP8 Series

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



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1. ELECTRICAL SPECIFICATIONS

1.1 Hold Type: P2SBA

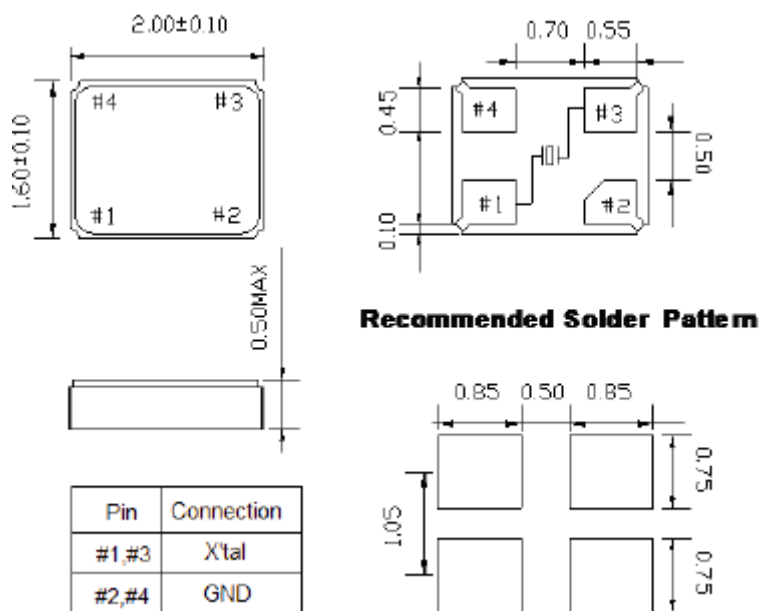
No.	Item	Symb	Electrical Specification				Remark
			Min.	Type	Max.	Units	
1	Nominal Frequency	F0	12.000		60.00	MHz	
2	Mode of Vibration		■ Fundamental △3rd Overtone △5th Overtone				
3	Frequency Tolerance	$\Delta F/F0$	± 10	± 30	± 50	ppm	at 25°C ± 3 °C
4	Operating Temperature Range	T _{OPR}	-20 -40	-	+70 +85	°C	
5	Frequency Stability	T _C	± 30		± 50	ppm	
6	Storage Temperature	T _{STG}	-55	-	+125	°C	
7	Load capacitance	CL	6~specify			pF	
8	Equivalent Series Resistance	ESR	Seepage 1			Ω	
9	Drive Level	DL	-	50	100	μW	
10	Insulation Resistance	IR	500	-	-	M Ω	At 100V _{DC}
11	Shunt Capacitance	Co			5	pF	
12	Aging Per Year	Fa	-3	-	+3	ppm	First Yea
13	Moist are Sensitivity Level	MSL		1			J-STD-033
14	Package type	2.0*1.6*0.5					

Seepage1

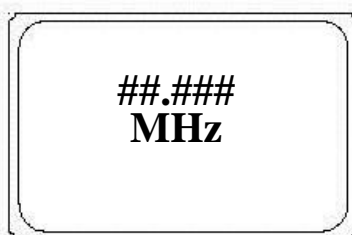
Frequency Range(MHz)	Mode of Vibration	ESR(Ω) Max
12.000<F0<23.999MHz	AT Fundamental	≤ 300
24.000<F0<24.999MHz	AT Fundamental	≤ 120
25.000<F0<35.999MHz	AT Fundamental	≤ 50
36.000 \leq F0<60.000MHz	T Fundamental	≤ 80



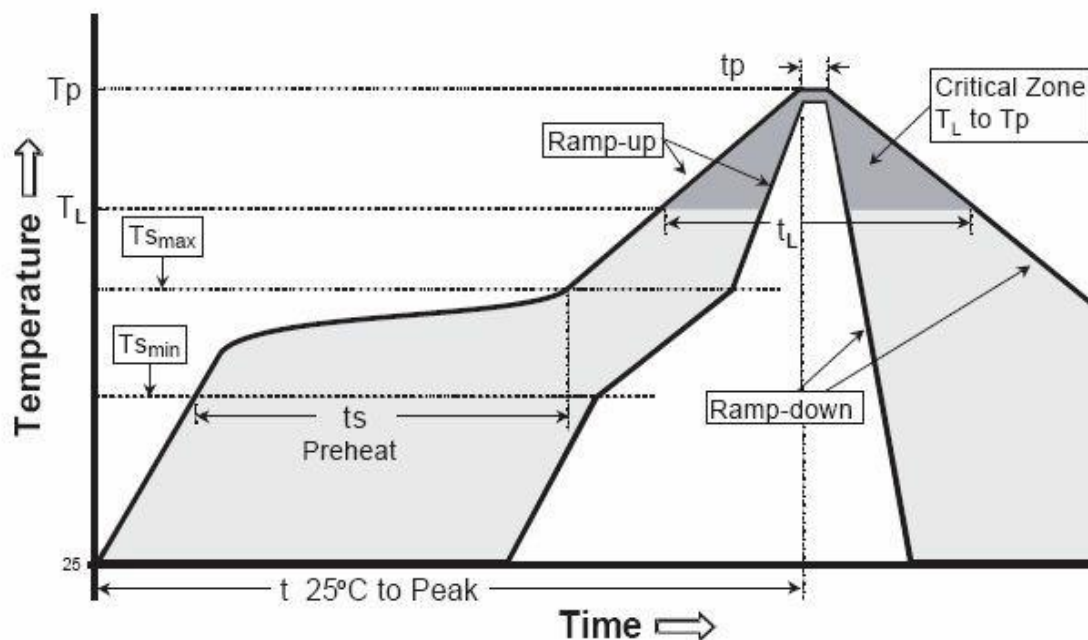
1.2 Dimension (Unit: mm)



1.3 Marking



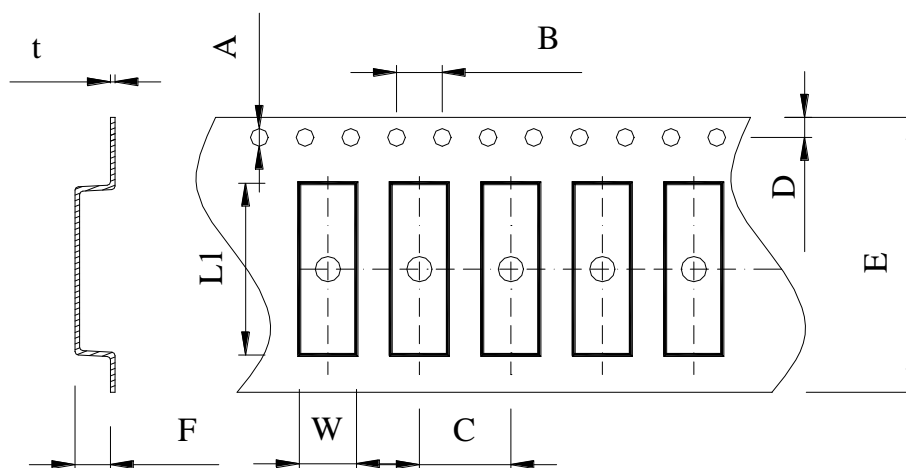
1.4 Reflow solder



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

2. PACKING

2.1 Packing Method Sketch Map (Unit: mm)



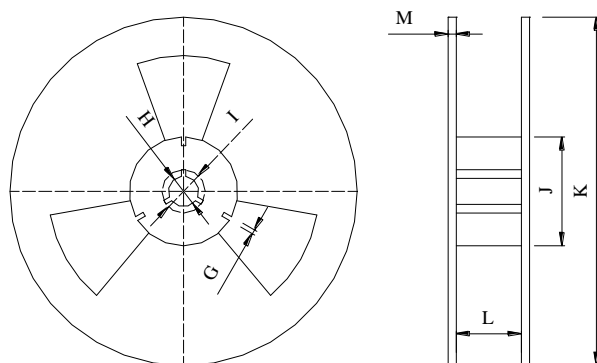
A	B	C	D	E	F	L1	W	t
1.50	4.0	4.0	1.75	8.0	1.3	2.2	1.8	0.3



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2.2 Reel Dimensions (Unit: mm)



G	H	I	J	K	L	M
2.5	13.5	21.6	60.0	180	9.5	1.6

Pieces per reel: 3000/reel

3. Products Code

3.1 SMD Crystal Resonators/MHz

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	P8 (P2SBA)	24.000M	A = 12.5PF	A=10PPM	A=10PPM	A = 0~50	Special
		32.000M	B = 10PF	B=20PPM	B=20PPM	B = -10~60	
			C = 9PF	C=30PPM	C=30PPM	C = -10~70	
			D = 8PF	D=50PPM	D=50PPM	D = -20~70	
			E = 7PF	E=100PPM	E=100PPM	E = -30~85	
			F = 6PF			F = -40~85	
			G = 16PF			G = -40~105	
			H = 18PF			H = -40~125	
			J = 20PF				
			K = 22PF				
			L = 30PF				