

YIC 裕中企業股份有限公司
裕銓電子(深圳)有限公司

SPECIFICATION

BRAND NAME : Y I C

DESCRIPTION : Quartz Crystal Unit

PART NUMBER : 12M20P/XT324

裕中: YUECHUNG INTERNATIONAL CORP.

台北縣汐止市新台五路一段 79 號 20 樓之 4
20F-4, No. 79, Sec. 1, Shin Tai Wu RD., His- Chih,
Taipei Hsien, Taiwan.

TEL : 886-2-2698-2191 #153

FAX : 886-2-2698-2192 / 2698-2193

裕銓: YUECHUNG ELECTRONICS(SHENZHEN) CO.,LTD.

深圳市福田保稅區英達利科技數碼園 A 棟 304 室
Room 304,Block A,Ying DaLi,Tech Shu Ma Park,Futian
Free Trade Zone, Shenzhen, Chain.

TEL :86-755-8204-4536 / 8204-4539

FAX :86-755-8204-4415

Web Site: <http://www.yic.com.tw>

E-mail: yahoo@yic.com.tw

業務員 : 陳 泯 璇



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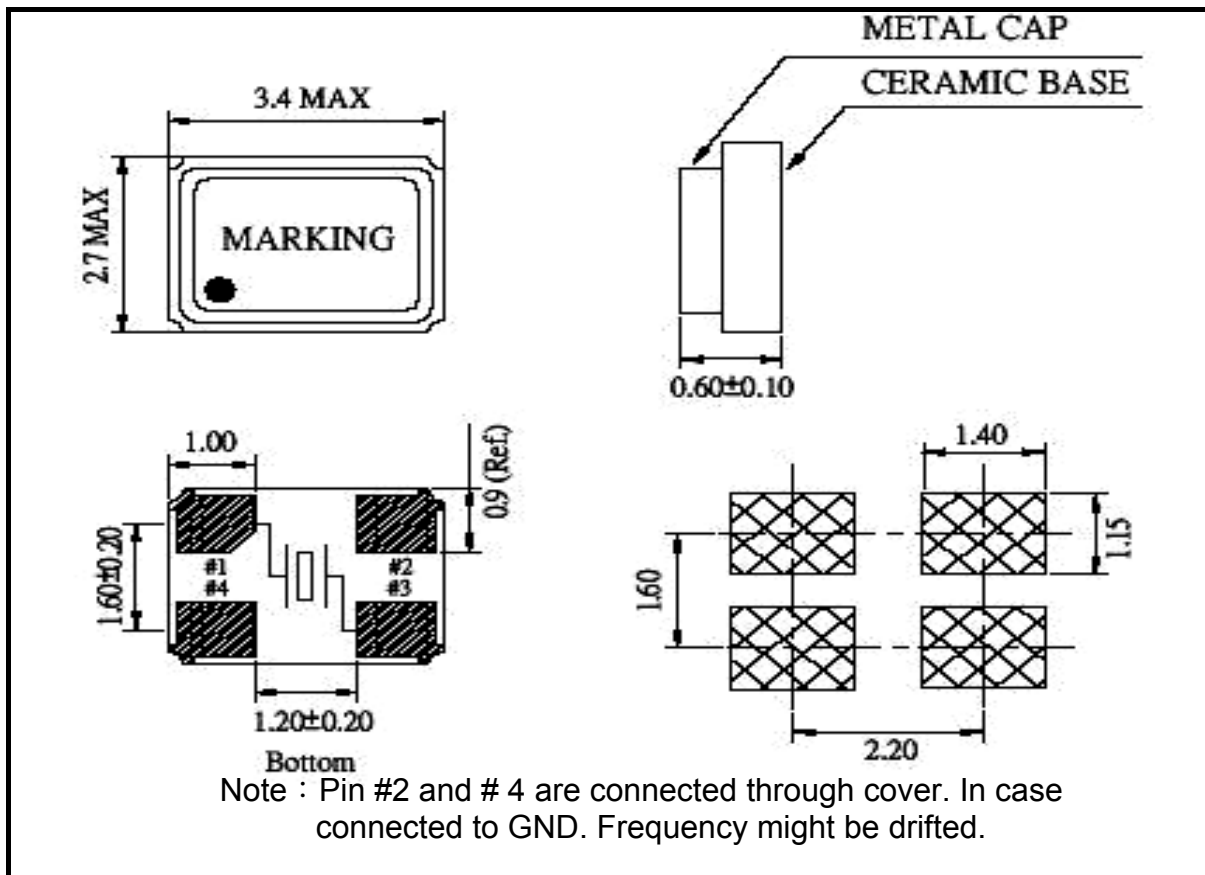
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■ Specifications

1.Part No.	12M20P/XT324,YIC
2.Nominal Frequency	12.000 MHz
3.Frequency Tolerance at 25°C	± 30 PPM
4.Frequency Stability (Ref. to 25°C)	± 30 PPM (-10°C ~ +70°C)
5.Mode of Oscillation	■ Fund. □ 3 rd □ 5 th overtone
6.Operating Temperature Range	-10°C ~ +70°C
7.Storage Temperature Range	-40°C ~ +85°C
8.Load Capacitance (C _L)	20 PF
9.Shunt Capacitance (C _O)	5 PF Max.
10.Equivalent Series Resistance (ESR)	50 Ω Max.
11.Drive Level	10 μW
12.Aging (at 25°C)	± 3 PPM / year Max.

■ Dimensions

Unit : mm





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■ Reliability Specification

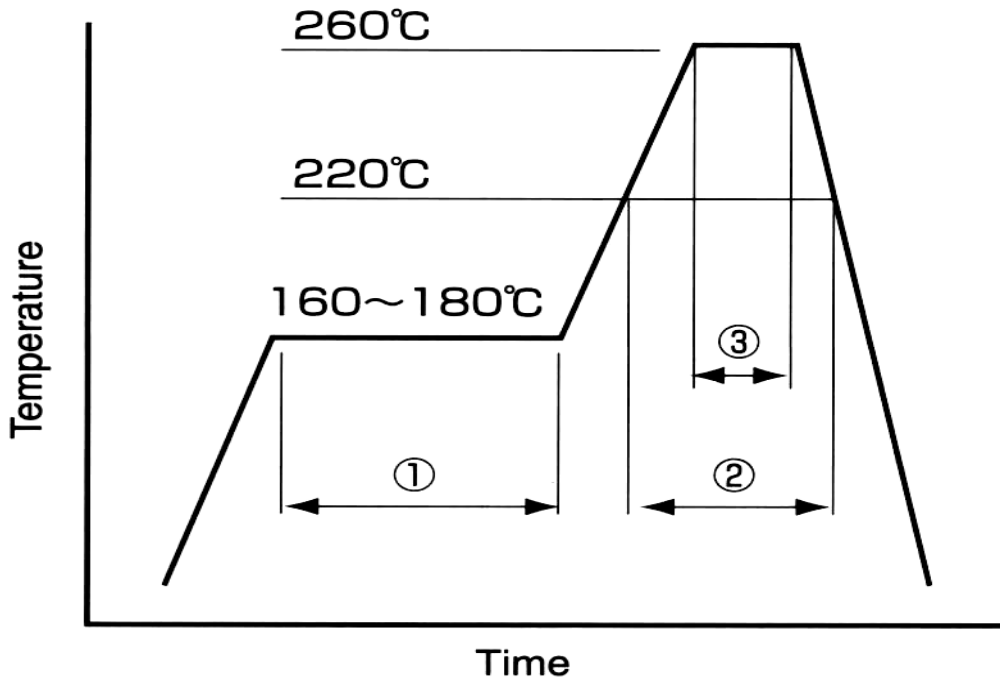
Item	Condition	Criteria										
1.Shock	Dropping height 75cm,3 times on a hard wooden board	Frequency Stability $\Delta F/F : \pm 10$ PPM Max.										
2.Vibration	1.Frequency : 10 ~ 2000Hz 2.Amplitude : 1.5 mm / 20g 3.Directions : X,Y,Z, each : 2 Hrs	Frequency Stability $\Delta F/F : \pm 10$ PPM Max.										
3.Solder-ability Test	Dipping the terminal pads in a $235 \pm 5^{\circ}\text{C}$ solder bath for 5 sec.	More that 95% surface of the terminal pads shall be covered with a uniform solder coating.										
4.Helium Leak Test	Mass-Spectrometer type leak detector shall be used to measure the leakage rate of gas through any faulty seal.	less than $2 \times E^{-8}$ atm.cc/sec										
5.Solvent Resistance	Immersed in $(\text{CH}_3)_2\text{OH}$ for 10 minutes then brushed in forward direction 10 times.	Marking shall be easily read.										
6.Low Temperature Test	1.Temperature : $-40 \pm 3^{\circ}\text{C}$ 2.Length of test : 100hrs.	Frequency Stability $\Delta F/F : \pm 20$ PPM Max.										
7.High Temperature Test	1.Temperature : $85 \pm 3^{\circ}\text{C}$ 2.Length of test : 100hrs.	Frequency Stability $\Delta F/F : \pm 20$ PPM Max.										
8.Resistance to Soldering Heat	Dipping in a $260 \pm 5^{\circ}\text{C}$ solder bath for 10 sec.	Frequency Stability $\Delta F/F : \pm 10$ PPM Max.										
9.High Temperature & R.H. Test	1.Temperature : $85 \pm 3^{\circ}\text{C}$ 2.Relative Humidity : 85% 3.Length of test : 500 hrs.	Frequency Stability $\Delta F/F : \pm 30$ PPM Max.										
10.Temperature Cycle	The unit shall be subjected to 100 successive change of temperature cycles. Each cycle as follow : <table><thead><tr><th>Temperature</th><th>Duration</th></tr></thead><tbody><tr><td>1. $-40 \pm 3^{\circ}\text{C}$</td><td>30 minutes</td></tr><tr><td>2. $25 \pm 3^{\circ}\text{C}$</td><td>2~3 minutes</td></tr><tr><td>3. $85 \pm 3^{\circ}\text{C}$</td><td>30 minutes</td></tr><tr><td>4. $25 \pm 3^{\circ}\text{C}$</td><td>2~3 minutes</td></tr></tbody></table>	Temperature	Duration	1. $-40 \pm 3^{\circ}\text{C}$	30 minutes	2. $25 \pm 3^{\circ}\text{C}$	2~3 minutes	3. $85 \pm 3^{\circ}\text{C}$	30 minutes	4. $25 \pm 3^{\circ}\text{C}$	2~3 minutes	Frequency Stability $\Delta F/F : \pm 20$ PPM Max.
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Reflow Profile:



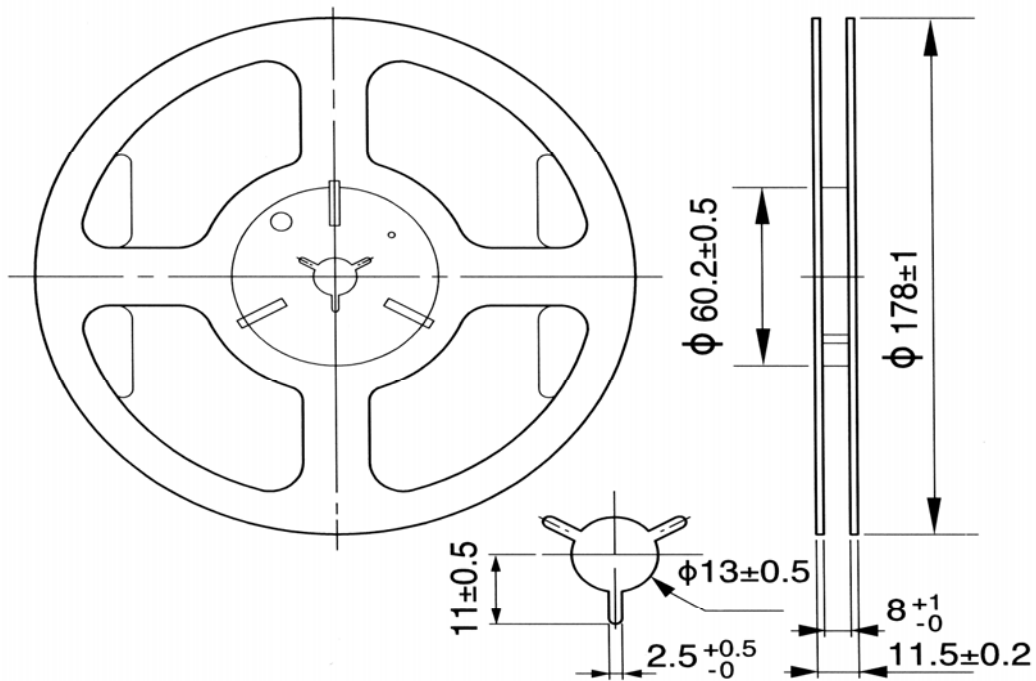
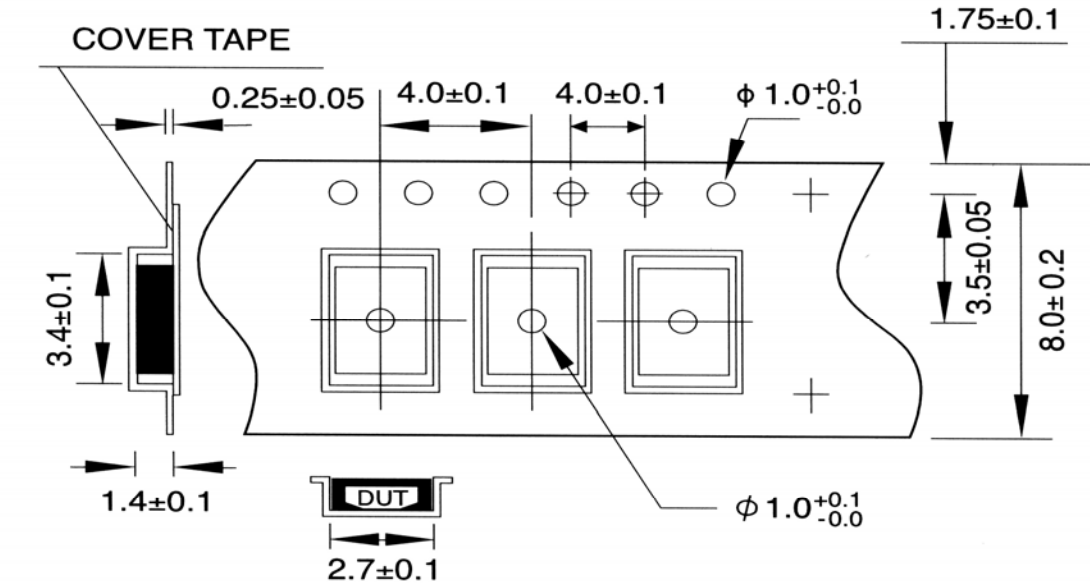
- 1. Preheat : 160 ~ 180°C 120sec
- 2. Primary heat: 220°C 60sec
- 3. Peak : 260°C 10sec max.



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■ Tape & Reel (unit:mm)



* 3000PCS/Reel(MAX.)