



# 部 品 規 格 書

## Part Specification

CUSTOMER 客戶: \_\_\_\_\_

PART TYPE 產品型號: HC-49S

NORMAL FREQ. 頻率: 24.750MHZ 20PF

CUSTOMER P/N 客戶物料編碼: \_\_\_\_\_

ISSUE DATE 日期: 2018

**CUSTOMER'S APPROVAL**  
客戶確認

APPROVED	QA
张 勇	熊 春霞

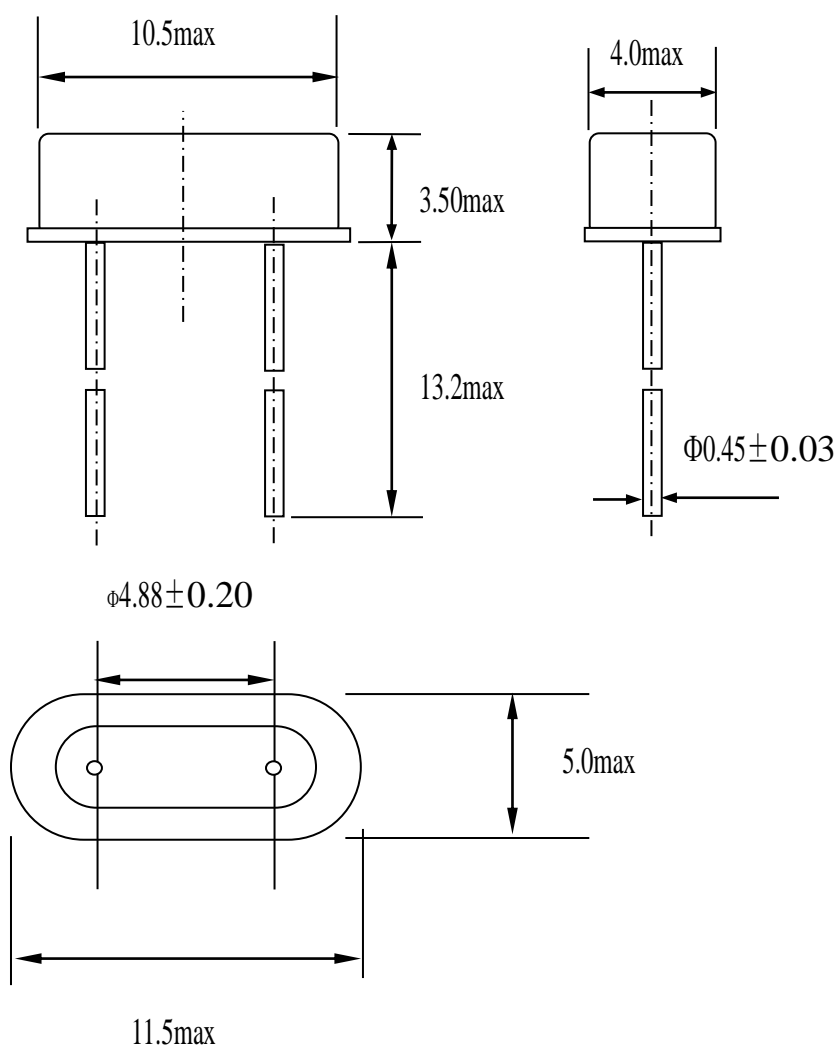
Parameters of the Crystal 產品參數性能

	Parameters 參數	
1	Nominal Frequency 標稱頻率	24.750MHz
2	Holding 封裝形式	HC-49US
3	Vibration Mode 振動模式	AT CUT, FUND. AT 切、基頻
4	Frequency Tolerance @ 25±3°C 調整頻差	±20PPM
5	Frequency Stability@ 6 工作溫度條件下的頻率容差	±20PPM
6	Operating Temperature Range 工作溫度	-10°C ~ +60°C
7	Store Temperature Range 存儲溫度	-40°C ~ +85°C
8	Equivalency Resistance 等效電阻	40 Ω
9	Load Capacitance 負載電容	20PF
10	Drive Level 激勵功率	100 μW
11	Insulation Resistance 絕緣阻抗	> 500MΩ at DC 100V±15V
12	Aging 老化	±5PPM/year
13	Shunt Capacitance (C0) 靜態電容	≤7.0PF
14	Making 打標	24.750

# Construction 產品結構

1 Outline drawing 外觀尺寸

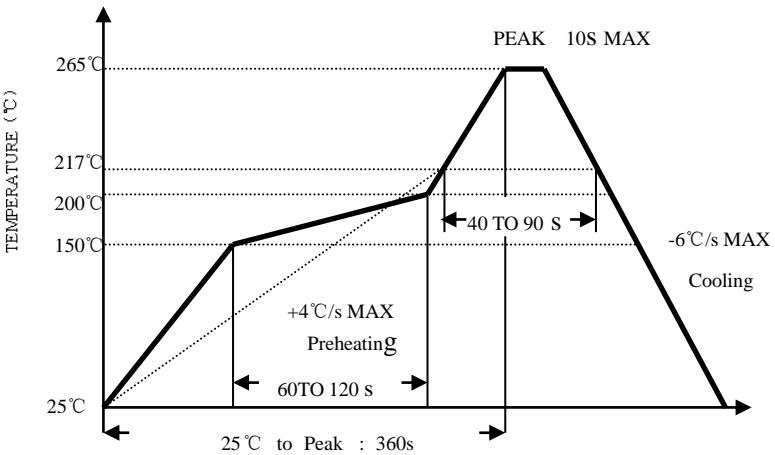
2 單位:mm



ENVIRONMENTAL (可靠性試驗)

Test Item 項目	Condition of Test 試驗條件及要求	Performance Requirements 性能要求
Tensile Strength Termination 引出端強度	The unit's lead wire should withstand a tensile force applied to the termination in the direction of its draw-out axis of up to 900g maintained as is for 30±5s . 在引線端垂直的方向施加 900g 力，時間為 30±5s.	There should be no abnormalities detected on the unit 產品外觀無異常
Vibration 振動	Endurance condition by a frequency sweep shall be made. the entire frequency range from 10HZ to 55HZ and return to 10HZ, shall be transversed in 1min. Amplitude (total excursion): 1.5mm This motion shall be applied for a period of 2h each of 3 mutually perpendicular axes(a total of 6h) 振動頻率: 從 10HZ 到 55HZ,再回到 10HZ 1 倍頻程/min 幅度為 1.5mm 3 個相互垂直的方向各 2 小時	
Drop 跌落	From 750mm height 3 times on 30mm hard wooden floor 振盪器從 750 毫米高處跌落到 30 毫米厚的硬質木板上，重複 3 次	
Shock 衝擊	Peak acceleration:981m/s <sup>2</sup> Duration of the pulse :6ms Three successive shocks shall be applied in both direction of 3 mutually perpendicular axes( a total of 18 shocks) 加速度：981m/s <sup>2</sup> 時間：6ms 作用在 3 個相互垂直的方向	
Damp heat, constant 恒定濕熱	The unit shall be stored at a temperature of 40°C±2°C with relative humidity of 90% to 95% for 56d, then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made. 在溫度：40°C±2°C、濕度：90% to 95%條件下存放 56 天，然後在標準大氣壓下放置 1 小時後測試	After the test, the parameters of table must be satisfied 滿足表中的參數要求
Cold 低溫存儲	The unit shall be stored at a temperature of -55±3°C for 2h , then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made. 在-55°C±3°C下存放 2 小時，然後在標準大氣壓下放置 1 小時後測試	
Dry heat 高溫存儲	The unit shall be stored at a temperature of 105±3°C for 16h , then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made. 在 105°C±3°C下存放 16 小時，然後在標準大氣壓下放置 1 小時後測試	
Aging 老化	The unit shall be stored at a temperature of 85±2°C for 30d , then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made. 在 85±2°C下放置 30 天,然後在標準大氣壓下放置 1 小時後測試	

## ENVIRONMENTAL (可靠性試驗)

Test Item 項目	Condition of Test 試驗條件	Performance Requirements 性能要求															
<p>Temperature Cycling 溫度迴圈</p>	<p>The unit shall be subjected to 100 successive change of temperature cycles, each as shown in table below, then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.</p> <p>在下表給定溫度和時間參數的條件下迴圈 100 次，標準大氣壓下放置 1 小時後測試</p> <table border="1" data-bbox="379 685 1134 1025"> <thead> <tr> <th></th> <th>Temperature 溫度</th> <th>Duration 放置時間</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C±3°C</td> <td>30min (30 分鐘)</td> </tr> <tr> <td>2</td> <td>standard atmospheric conditions 標準大氣壓</td> <td>Within 30S 30 秒內</td> </tr> <tr> <td>3</td> <td>125°C±3°C</td> <td>30min (30 分鐘)</td> </tr> <tr> <td>4</td> <td>standard atmospheric conditions 標準大氣壓</td> <td>Within 30S 30 秒內</td> </tr> </tbody> </table>		Temperature 溫度	Duration 放置時間	1	-55°C±3°C	30min (30 分鐘)	2	standard atmospheric conditions 標準大氣壓	Within 30S 30 秒內	3	125°C±3°C	30min (30 分鐘)	4	standard atmospheric conditions 標準大氣壓	Within 30S 30 秒內	<p>After the test, the parameters of table must be satisfied</p> <p>滿足表中的參數要求</p>
	Temperature 溫度	Duration 放置時間															
1	-55°C±3°C	30min (30 分鐘)															
2	standard atmospheric conditions 標準大氣壓	Within 30S 30 秒內															
3	125°C±3°C	30min (30 分鐘)															
4	standard atmospheric conditions 標準大氣壓	Within 30S 30 秒內															
<p>Resistance to soldering heat 耐焊接熱</p>	 <p>Reflow soldering cure se TIME (Seconds) Total : 420S 去見上圖</p> <p>Soldering iron method: Bit temperature : 390°C±10°C 溫度: 390°C±10°C Application time of soldering iron : 5S MAX 時間: 5S MAX</p>	<p>After the test, the parameters of table must be satisfied</p> <p>滿足表中的參數要求</p>															

Notice (備註):

Standard atmospheric conditions:

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows:

如無其他規定, 測試時的標準大氣壓的範圍如下:

Ambient temperature :  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$

Relative humidity : 30% to 80%

Air pressure : 860hPa to 1060hPa

If there is no doubt about the result, the measurements and tests shall be made within the follows limits:

如果對測試結果有疑問, 請在下面的條件下測試:

Ambient temperature :  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Relative humidity : 55% to 65%

Air pressure : 860hPa to 1060hPa