

## 深圳市晶科鑫实业有限公司

Shenzhen Crystal Technology Industrial Co., Ltd

### APPROVAL SHEET

CUSTOMER P/N:		
TYPE:	49S CRYSTAL	
DESCRIPTION:	49SMD 12.000MHZ 20PF $\pm$ 20PPM -40~85°C	
P N/ SJK:	6CS12000F20UCG	
ENVIRONMENTAL:	<input checked="" type="checkbox"/> RoHS <input checked="" type="checkbox"/> REACH <input checked="" type="checkbox"/> HF <input type="checkbox"/> PAHS <input type="checkbox"/> other	
REVISION:	A1 2014-6-10	MOQ: 1000pcs
MSL:	Levels 1	

SIGNATURE					
SUPPLIER			CUSTOMER		
Issue	Check	Approve	QA	Check	Approve
SJK			Signature		
FAE_EMAIL			Date		
Date			Approve:	<input type="checkbox"/> accept	<input type="checkbox"/> unaccepted
Note:					

# QUARTZ CRYSTAL UNIT



*SERIES 6CS/SS, Resistance Welded HC-49S/SSMD Package*

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## 1. FEATURE

- Leadless type
- High precision characteristic covering up to high frequency range
- Designed for automatic mounting and reflow soldering
- Embossed taping specification
- The best choice of Bluetooth wireless communication sets, DSN, PDA and mobile phone

## 2. ELECTRICAL SPECIFICATIONS

Output Frequency Range	12.000000MHz
Mode	AT/Fundamental
Frequency Tolerance	±20 ppm max (at 25°C)
Load Capacitance(C <sub>L</sub> )	20.0 PF
Frequency Stability Over Operating Temperature Characteristics	±30ppm max
Operating Temperature Range	-40 °C to +85 °C
Storage Temperature Range	-40 °C to +125 °C
Shunt Capacitance (C <sub>0</sub> )	3.0 PF Max
Driver Level (Typical)	100μW
Equivalent Series Resistance(ESR)	40 Ω Max

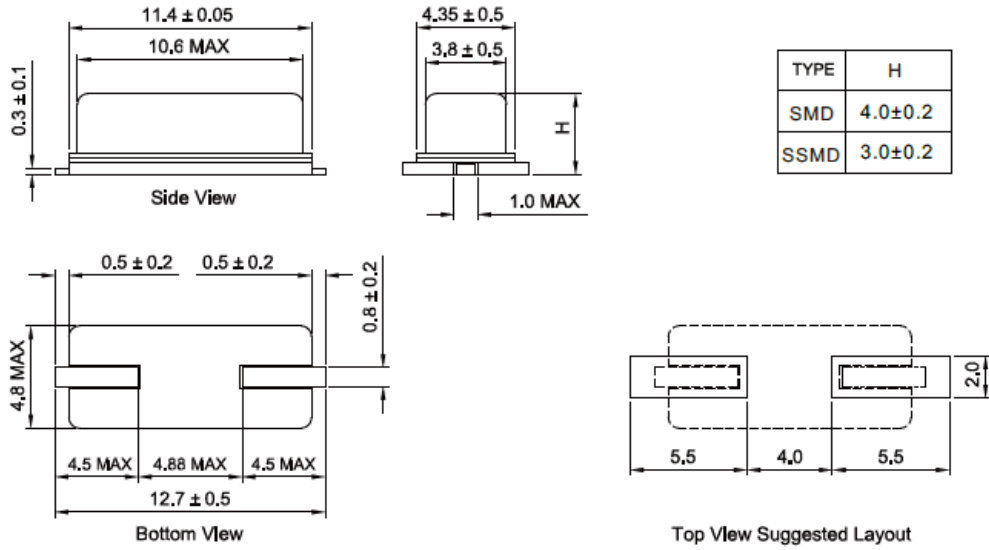
# QUARTZ CRYSTAL UNIT



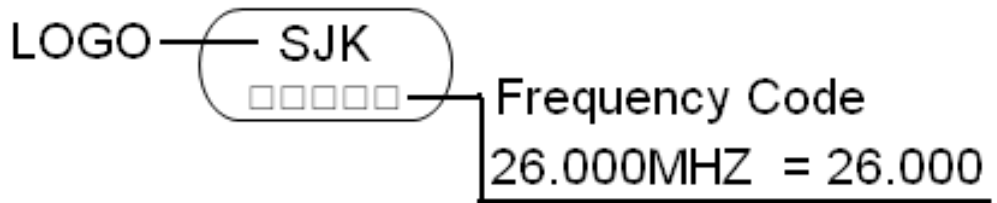
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Aging @25°C 1 <sup>st</sup> year (Max)	±3ppm/year
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### 3. DIMENSION (Units: mm)



### 4. MARKING

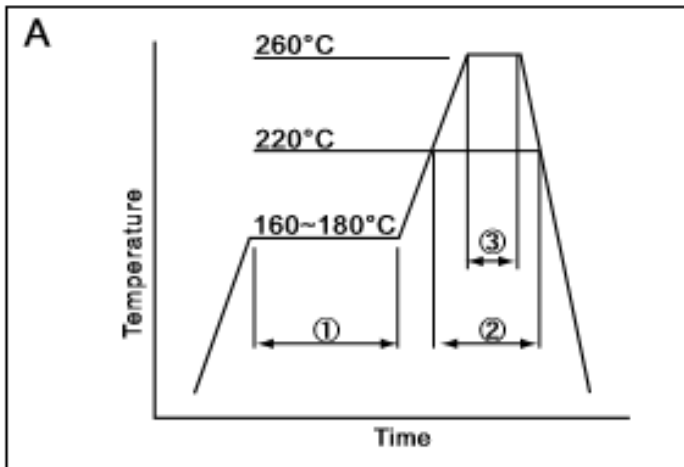


### 5. REFLOW CONDITION

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

## 6. RELIABILITY TEST SPECIFICATION

### 1. Mechanical Endurance

No.	Test Item	Test Methods	REF.DOC
1.1	Drop Test	150 cm height, 3 times on concrete floor.	JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave ( 1000 G ) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202F
1.3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute Perpendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm <sup>2</sup>	MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm <sup>2</sup> for 2 hr	MIL-STD-883E
1.6	Solder ability	Temperature 245 °C ± 5°C Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent ( 1 : 4 )	MIL-STD-883E

### 2. Environmental Endurance

No.	Test Item	Test Methods	REF.DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C Test time 10 ± 1 sec.	MIL-STD-202F

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2.2	High Temp. Storage	+ 125 °C ± 3 °C for 500 ± 12 hours	MIL-STD-883E
2.3	Low Temp. Storage	- 40 °C ± 3 °C for 500 ± 12 hours	MIL-STD-883E
2.4	Thermal Shock	<p>Total 100 cycles of the following temperature cycle</p> <p>125 ± 3 °C 25 °C -55 ± 3 °C</p> <p>30 min. 30 min. 10 min. max.</p>	MIL-STD-883E
2.5	High Temp & Humidity	85°C ± 3°C, RH 85% , 500Hrs	JIS C5023
2.6	Pressure Cooker Storage	121 ± 3°C , RH100% , 2 bar , 240Hrs	JIS C6701