

QUARTZ CRYSTAL UNIT

SERIES 7U, SEAM SEALED CERAMIC 3.2*2.5MM SURFACE MOUNT PACKAGE



深圳市晶科鑫实业有限公司

Shenzhen Crystal Technology Industrial Co., Ltd

APPROVAL SHEET

CUSTOMER P/N:					
TYPE:	SMD CRYSTAL				
DESCRIPTION:	SMD3225	13.500MHZ	12PF	±10PPM	-40~85℃
P N/ SJK:	7U13500E12UCG				
ENVIRONMENTAL:	☒ RoHS	☒ REACH	☒ HF	☐ PAHS	☐ other
REVISION:	A1 2017-5-10			最小包装: 3000pcs/real	
MSL:	Levels 1				

SIGNATURE					
SUPPLIER			CUSTOMER		
Issue	Check	Approve	QA	Check	Approve
SJK	18682088994 (Mr. Huang)		Signature		
FAE_EMAIL	sjk-fae@q-crystal.com		Date		
Date			Approve: ☐ accept ☐ unaccepted		
Note:					

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1. TESTING CONDITION

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement

and tests are as follow:

Ambient temperature : $25\pm 5^{\circ}\text{C}$

Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by S&A250B or equivalent.

2. ELECTRICAL SPECIFICATIONS

Output Frequency Range	13.500000MHz
Mode	AT/Fundamental
Frequency Tolerance	± 10 ppm max (at 25°C)
Load Capacitance(C_L)	12.0 PF
Frequency Stability Over Operating Temperature Characteristics	± 30 ppm max
Operating Temperature Range	-40°C to $+85^{\circ}\text{C}$
Storage Temperature Range	-40°C to $+125^{\circ}\text{C}$
Shunt Capacitance (C_0)	3.0 PF Max
Driver Level (Typical)	10 μ W
Equivalent Series Resistance(ESR)	80 Ω Max
Aging @ 25°C 1 st year (Max)	± 3 ppm/year

Tel: 0755-88352810-837(Mr.huang) Fax: 0755-88353718 <http://www.q-crystal.com>

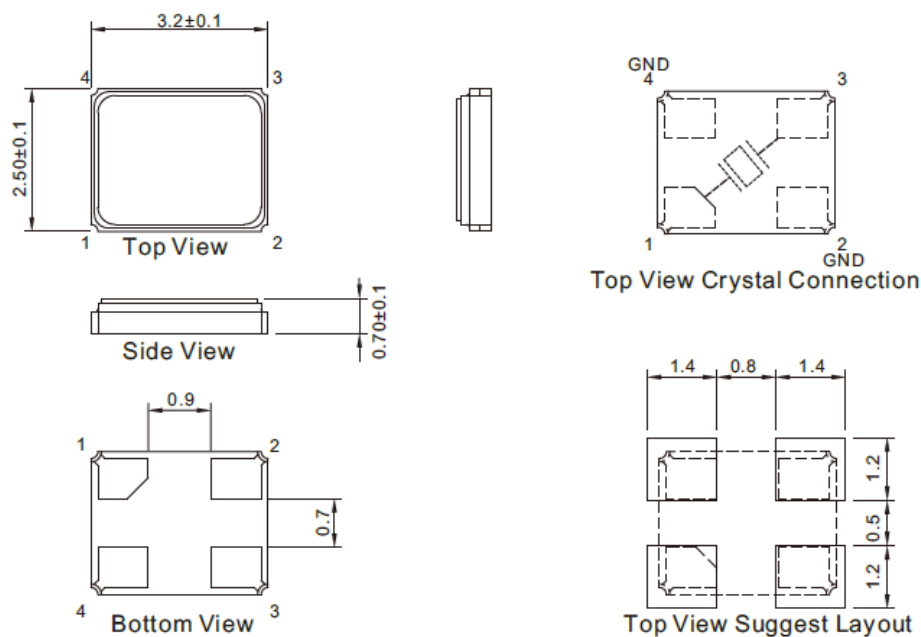
ADD: Room 1204~1206,Building 3C, TianAn Cloud Park Phase 1,Bantian, Longgang District, Shenzhen

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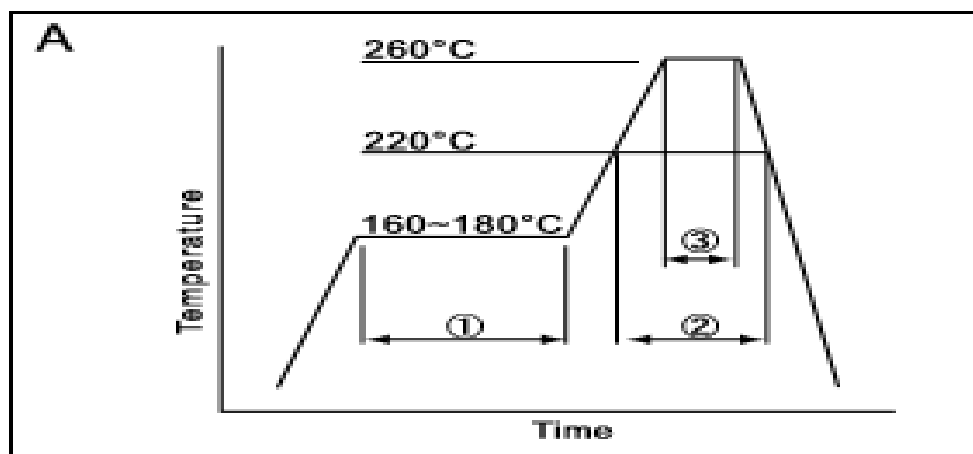
3. DIMENSION (Units: mm)



4. MARKING



5. REFLOW CONDITION



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

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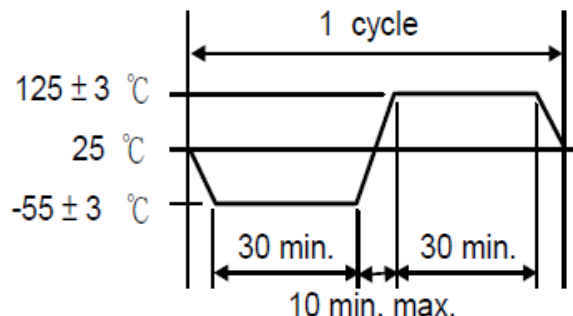
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6. RELIABILITY TEST SPECIFICATION

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 ²	MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm ² 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
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	Total 100 cycles of the following temperature cycle 	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

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