QUARTZ CRYSTAL UNIT

*SERIES 7F, SEAM SEALED CERAMIC2.0*1.6MM 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:	SMD2016 20.000MHZ 8PF ±10PPM -40~85℃		
P N/ SJK:	7F20000E08UCG		
ENVIRONMENTAL:	■RoHS ■REACH ■HF □PAHS □other		
REVISION:	A1 2017-5-10	MOQ:	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:					

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

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±5℃
Relative humidity : 40%~70%

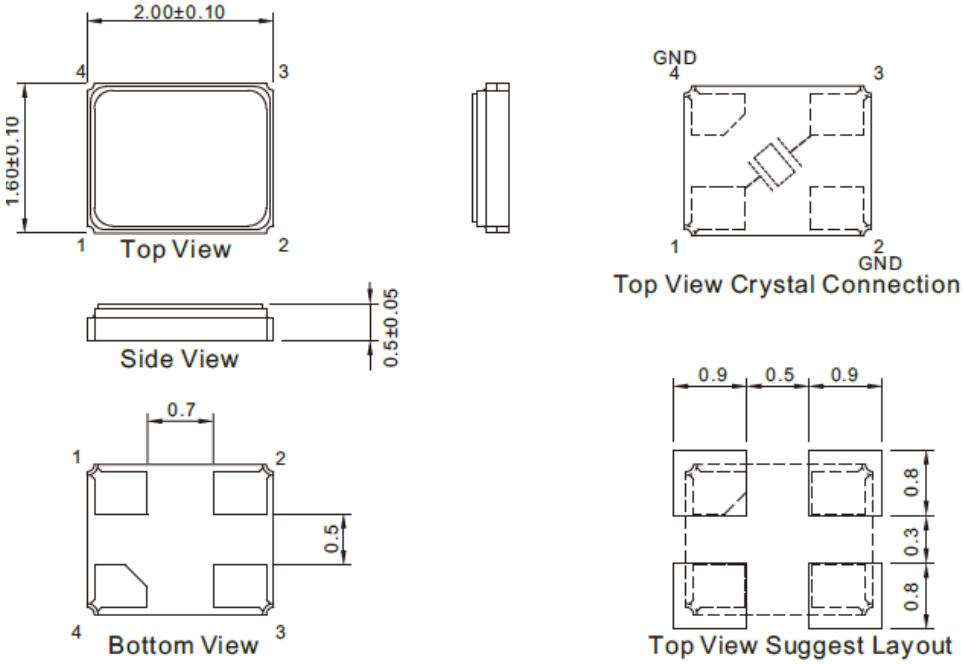
Measure equipment

Electrical characteristics measured by S&A250B or equivalent.

2. ELECTRICAL SPECIFICATIONS

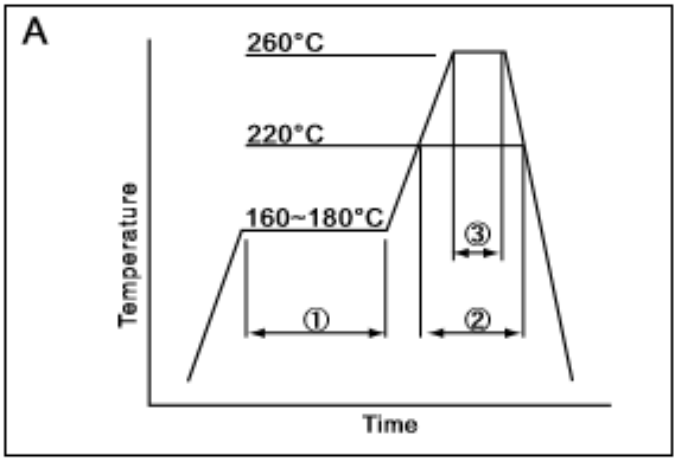
Output Frequency Range	20.000000MHz
Mode	AT/Fundamental
Frequency Tolerance	±10 ppm max (at 25°C)
Load Capacitance(C_L)	8.0 PF
Frequency Stability Over Operating Temperature Characteristics	±10ppm max /-20～70°C
	±30ppm max /-40～85°C
Operating Temperature Range	-40 °C to +85 °C
Storage Temperature Range	-40 °C to +125 °C
Shunt Capacitance (C_0)	3.0 PF Max
Driver Level (Typical)	10μW
Equivalent Series Resistance(ESR)	100Ω Max
Aging @25°C 1st year (Max)	±3ppm/year

3. DIMENSION (Units: mm)



4. MARKING

5. REFLOW CONDITION



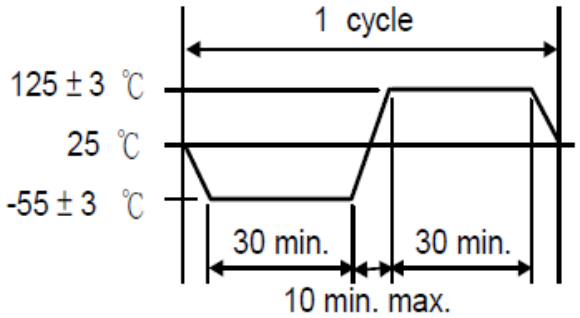
①	Preheat	160~180°C	120sec.
②	Primary heat	220°C	60sec.
③	Peak	260°C	10sec. max

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 / cm2	MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm2 for 2 hr	MIL-STD-883E
1.6	Solder ability	Temperature 245 ℃ ± 5℃ 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 ℃ Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 ℃ Test time 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 500 ± 12 hours	MIL-STD-883E
2.3	Low Temp. Storage	- 40 ℃ ± 3 ℃ 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℃ ± 3℃, RH 85% , 500Hrs	JIS C5023
2.6	Pressure Cooker Storage	121 ± 3℃ , RH100% , 2 bar , 240Hrs	JIS C6701