

## 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                                  | 27.000MHZ                                 | 18PF                                   | ±10PPM                        | -40~85℃                        |
| P N/ SJK:      | 7U27000E18UCG                            |                                           |                                        |                               |                                |
| 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 2017-5-10                             |                                           |                                        | MOQ:                          | 3000pcs/real                   |
| 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 7U, SEAM SEALED CERAMIC 3.2\*2.5MM SURFACE MOUNT PACKAGE

## 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

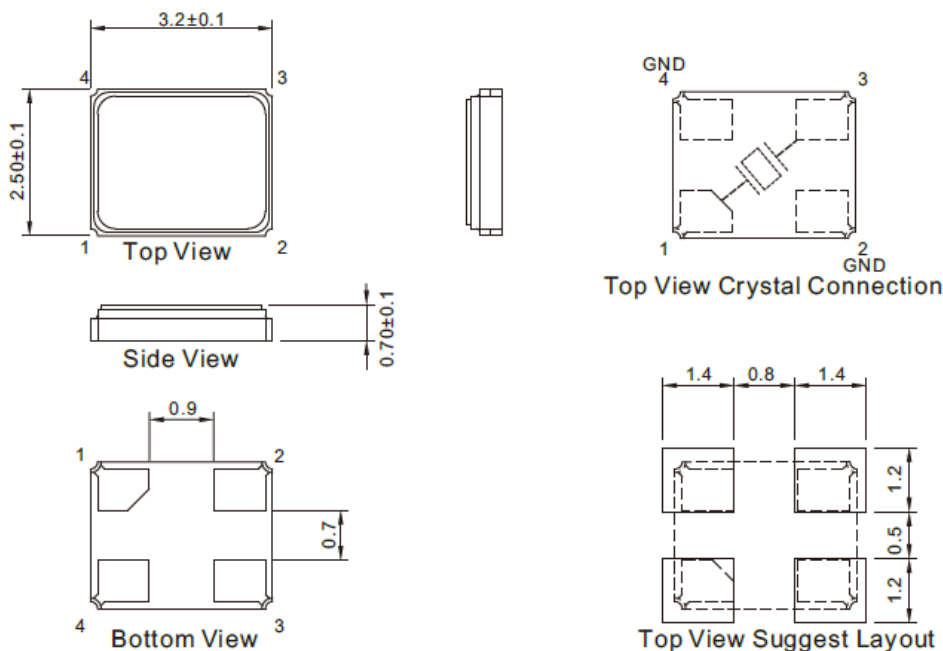
|                                                                |                                                                        |
|----------------------------------------------------------------|------------------------------------------------------------------------|
| Output Frequency Range                                         | 27.000000MHz                                                           |
| Mode                                                           | AT/Fundamental                                                         |
| Frequency Tolerance                                            | $\pm 10$ ppm max (at $25^{\circ}\text{C}$ )                            |
| Load Capacitance( $C_L$ )                                      | 18.0 PF                                                                |
| Frequency Stability Over Operating Temperature Characteristics | $\pm 10$ ppm max /<br>-20 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$ |
|                                                                | $\pm 30$ ppm max/<br>-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$  |
| Operating Temperature Range                                    | -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$                       |
| Storage Temperature Range                                      | -40 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$                      |
| Shunt Capacitance ( $C_0$ )                                    | 3.0 PF Max                                                             |
| Driver Level (Typical)                                         | 10 $\mu\text{W}$                                                       |
| Equivalent Series Resistance(ESR)                              | 40 $\Omega$ Max                                                        |
| Aging @25 $^{\circ}\text{C}$ 1 <sup>st</sup> year (Max)        | $\pm 3$ ppm/year                                                       |

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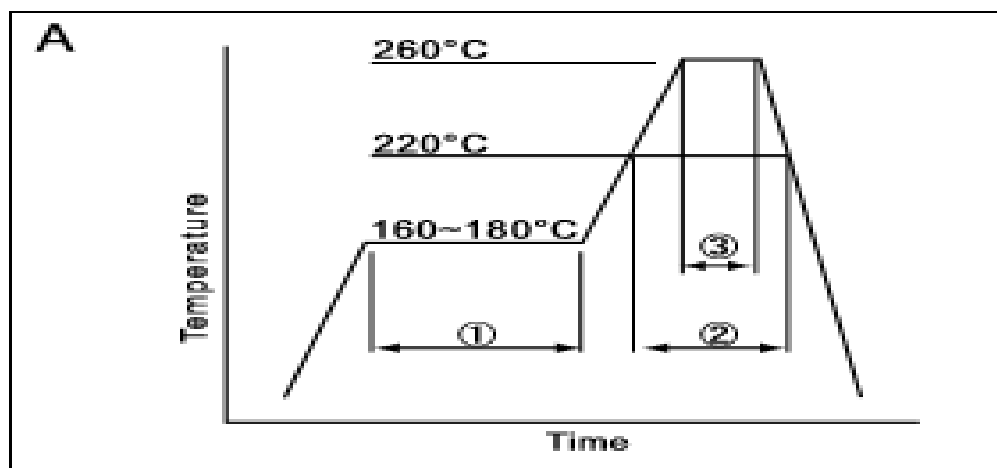
## 3. DIMENSION (Units: mm)



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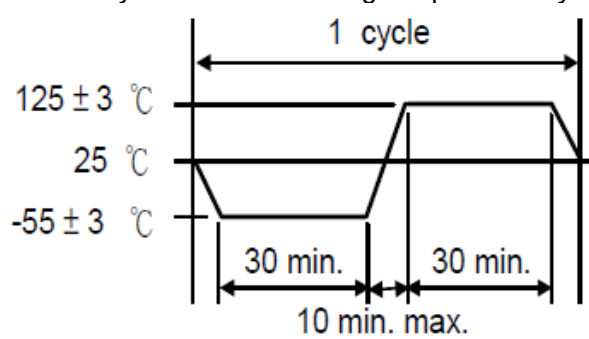
SERIES 7U, SEAM SEALED CERAMIC 3.2\*2.5MM SURFACE MOUNT PACKAGE

## 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 )<br>three mutually perpendicular axes each 3 times.<br>0.5m sec. duration time                            | MIL-STD-202F |
| 1.3 | Vibration        | Frequency range 10 ~ 2000 Hz<br>Amplitude 1.52 mm/20G<br>Sweep time 20 minute<br>Perpendicular axes each test time 4 hours<br>(Total test time 12 hours) | MIL-STD-883E |
| 1.4 | Gross Leak       | Standard Sample For Automatic Gross Leak<br>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<br>Immersing depth 0.5 mm minimum<br>Immersion time 5 ± 1 seconds<br>Flux Rosin resin methyl alcohol<br>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<br>Pre-heat time 60 ~ 120 sec.<br>Test temperature 260 ± 5 °C<br>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<br> | 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    |