



# INTERQUIP ELECTRONICS CO., LIMITED

Flat A, 9th Floor, On Shing Industrial Building, 2-16 Wo Liu Hang Road,

Fotan, New Territories, Hong Kong

Tel: (852) 2413 5515 Fax: (852) 2413 7053

Web site: <http://www.interquip.com> Email: [iql@interquip.com](mailto:iql@interquip.com)

## Crystal Resonator Specification and Approval Sheet

**Customer:** APEX Electronics Ltd

**Project Name:** N/A

**Applications:** N/A

**Contact Person:** Donald McLellan

**Customer P/N :** N/A

### 1. Scope:

1.1 This specification applies to quartz crystal unit with a frequency of 15.000000MHz, which will be used in crystal oscillator applications.

### 2. Construction:

2.1 Type of Holder: SMCE-5032 (RoHS Compliant)

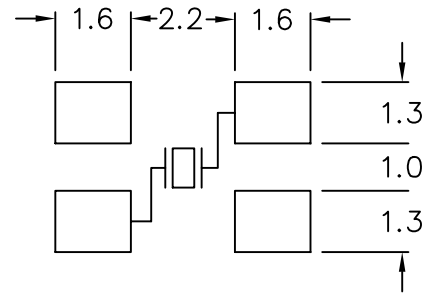
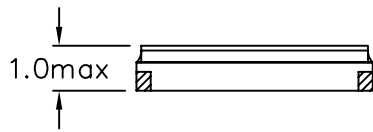
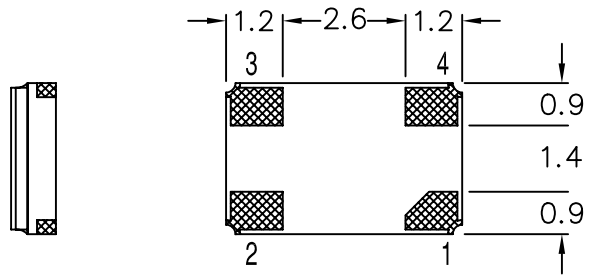
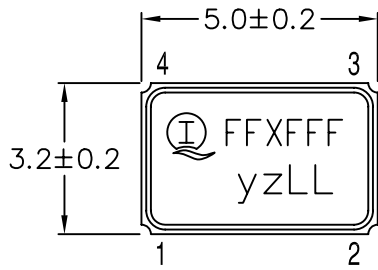
2.2 Enclosure Seal: Seam Weld

### 3. Characteristics:

|      |                                      |                     |                            |
|------|--------------------------------------|---------------------|----------------------------|
| 3.1  | Nominal Frequency                    | (f)                 | <b>15.000000MHz</b>        |
| 3.2  | Mode of Vibration                    |                     | <b>Fundamental</b>         |
| 3.3  | Load Capacitance                     | (C <sub>L</sub> )   | <b>18pF</b>                |
| 3.4  | Frequency Tolerance at 25°C±3°C      | (Δf/f)              | <b>±30ppm</b>              |
| 3.5  | Resonance Resistance                 | (Ω)                 | <b>80 Ohm Max.</b>         |
| 3.6  | Shunt Capacitance                    | (C <sub>0</sub> )   | <b>7pF Max.</b>            |
| 3.7  | Drive Level                          | (D <sub>L</sub> )   | <b>0.1mW</b>               |
| 3.8  | Frequency Deviation with Temperature | (Δf/f)              | <b>±30ppm</b>              |
| 3.9  | Operating Temperature Range          | (T <sub>OPR</sub> ) | <b>-20°C to 70°C</b>       |
| 3.10 | Storage Temperature Range            | (T <sub>STG</sub> ) | <b>-55°C to 125°C</b>      |
| 3.11 | Insulation Resistance                | (SR)                | <b>500MΩ or more</b>       |
| 3.11 | Aging                                | (Δf/f)              | <b>±5ppm per year Max.</b> |

|  |      |                    |    |          |                          |       |                 |
|--|------|--------------------|----|----------|--------------------------|-------|-----------------|
|  |      |                    |    | TITLE    | <b>CRYSTAL RESONATOR</b> | DWG.  | <b>M Zhao</b>   |
|  |      |                    |    |          |                          | DATE  | <b>12-02-29</b> |
|  |      |                    |    | PART NO  | <b>5XAA15000183KF8Q3</b> | CHKD. | <b>J Mok</b>    |
|  |      |                    |    | MODEL    | <b>SMCE-5032</b>         | DATE  | <b>12-02-29</b> |
|  |      |                    |    | Remark   |                          | APPD. | <b>XM Sun</b>   |
|  |      |                    |    |          |                          | DATE  | <b>12-02-29</b> |
|  | DATE | MODIFY DESCRIPTION | BY | SALESMAN | Gary Chan                | SHEET | <b>1/2</b>      |
|  |      |                    |    |          |                          | REV   | <b>0</b>        |

## EXTERNAL DIMENSIONS



## RECOMMENDED SOLDERING PATTERN

## MARKING SPECIFICATIONS

— COMPANY'S LOGO

FF FFF — REPRESENT FREQUENCY (MHz)

X — REPRESENT PRODUCTION LINE CODE

YZ — REPRESENT MONTH & YEAR CODE RESPECTIVELY

" Y " :

|       |     |     |     |      |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| MONTH | Jan | Feb | Mar | Apr. | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| MARK  | A   | B   | C   | D    | E   | F   | G   | H   | J   | K   | L   | M   |

" Z " CODE IS THE LAST NUMBER OF PRODUCTION YEAR  
FOR INSTANCE:

|      |      |      |      |      |      |
|------|------|------|------|------|------|
| YEAR | 2008 | 2009 | 2010 | 2011 | 2012 |
| MARK | 8    | 9    | 0    | 1    | 2    |

LL — REPRESENT LOT CODE (AA-ZZ)

2. DO NOT SCALE DRAWING

NOTES: 1. ALL DIMENSIONS ARE IN MM



Interquip Electronics Co., Ltd

|       |                    |    |  |                       |  |  |  |       |             |
|-------|--------------------|----|--|-----------------------|--|--|--|-------|-------------|
| TITLE |                    |    |  | SMD RESONATOR         |  |  |  | DWN.  | M Zhao      |
|       |                    |    |  |                       |  |  |  | DATE  | 2009.3.10   |
|       |                    |    |  | PART NO.              |  |  |  | CHKD  | Johnson Mok |
|       |                    |    |  | MODEL SMCE-5032       |  |  |  | DATE  | 2009.3.10   |
|       |                    |    |  | REMARK                |  |  |  | APPD. | XM.Sun      |
|       |                    |    |  |                       |  |  |  | DATE  | 2009.3.10   |
| DATE  | MODIFY DESCRIPTION | BY |  | DWG.NO. 004-06187-000 |  |  |  | REV.0 |             |